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SERVICE DATE – LATE RELEASE MARCH 24, 2014  
UPDATED – OCTOBER 3, 2014

**SURFACE TRANSPORTATION BOARD**

**UPDATED DECISION\* – PUBLIC VERSION**

Docket No. NOR 42125

E.I. DUPONT DE NEMOURS AND COMPANY

v.

NORFOLK SOUTHERN RAILWAY COMPANY

Digest:<sup>1</sup> The Board finds that the complaining shipper does not have a feasible shipping alternative to the defendant railroad for much of the transportation at issue, but that Complainant has failed to demonstrate that the challenged rates are unreasonably high.

Decided: March 21, 2014

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\* This updated decision reflects the changes noted in the Board's other decision served today in this proceeding.

<sup>1</sup> The digest constitutes no part of the decision of the Board but has been prepared for the convenience of the reader. It may not be cited to or relied upon as precedent. Policy Statement on Plain Language Digests in Decisions, EP 696 (STB served Sept. 2, 2010).

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**ACRONYMS**

|        |                                                |
|--------|------------------------------------------------|
| AHM    | Anhydrous Methylamines                         |
| AQM    | Aqueous Methylamines                           |
| ATC    | Average Total Cost                             |
| BNSF   | Burlington Northern & Santa Fe Railway Company |
| BRC    | Belt Railway of Chicago                        |
| CMP    | Constrained Market Pricing                     |
| CTC    | Centralized Traffic Control                    |
| DCF    | Discounted Cash Flow                           |
| DFE    | Difluoroethane                                 |
| DME    | Dimethyl Ether                                 |
| DMF    | Dimethyl Formamide                             |
| DMIR   | Duluth, Missabe and Iron Range Railway Company |
| DMS    | Dimethyl Sulfate                               |
| DRR    | The hypothetical "DuPont Stand-Alone Railroad" |
| DuPont | E.I. DuPont de Nemours & Company               |
| G&A    | General and Administrative                     |
| ICC    | Interstate Commerce Commission                 |
| ICCTA  | ICC Termination Act of 1995                    |
| IHB    | Indiana Harbor Belt Railroad Company           |
| MOW    | Maintenance-of-Way                             |
| MP     | Minnesota Power, Inc.                          |
| MMF    | Monomethyl Formamide                           |
| MMM    | Maximum Markup Methodology                     |
| NS     | Norfolk Southern Railway Company               |
| NSC    | Norfolk Southern Corporation                   |
| PDO    | Bio-propanediol                                |
| PTC    | Positive Train Control                         |
| R-1    | Annual Report Form R-1                         |
| RCAF   | Rail Cost Adjustment Factor                    |
| ROW    | Right-of-Way                                   |
| RPI    | Road Property Investment                       |
| RSAM   | Revenue Shortfall Allocation Method            |
| RTC    | Rail Traffic Controller                        |
| R/VC   | Revenue-to-Variable Cost                       |
| SAA    | Conrail Shared Asset Areas                     |
| SAC    | Stand-Alone Cost                               |
| SARR   | Stand-Alone Railroad                           |
| STB    | Surface Transportation Board                   |
| TCS    | Triple Crown Services                          |
| TDIS   | Thoroughbred Direct Intermodal Services        |



|      |                                            |
|------|--------------------------------------------|
| TIH  | Toxic Inhalation Hazard                    |
| TRRA | Terminal Railroad Association of St. Louis |
| T&E  | Train and Engine                           |
| URCS | Uniform Railroad Costing System            |
| WFL  | Flammable Liquid Waste                     |
| WP   | Workpaper                                  |

## OVERVIEW

On October 7, 2010, E.I. DuPont de Nemours & Company (DuPont) filed a complaint challenging the rates of Norfolk Southern Railway Company (NS) in 138 lanes of movements<sup>2</sup> that cover 26 discrete commodities.<sup>3</sup> The 138 challenged lanes are governed by 100 separate rates, which were established at the expiration of a long-term contract entered into by NS and DuPont in 1997.

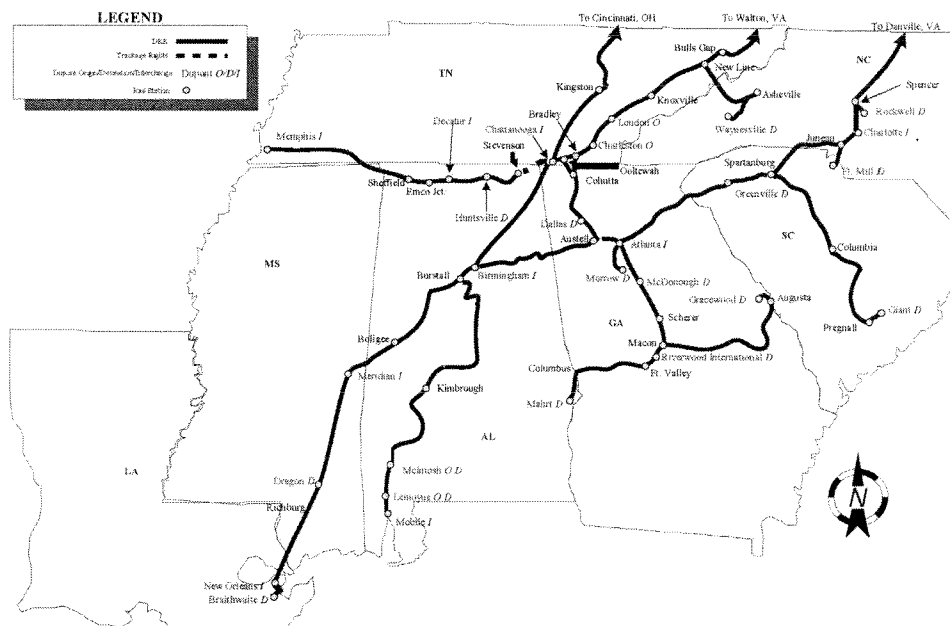
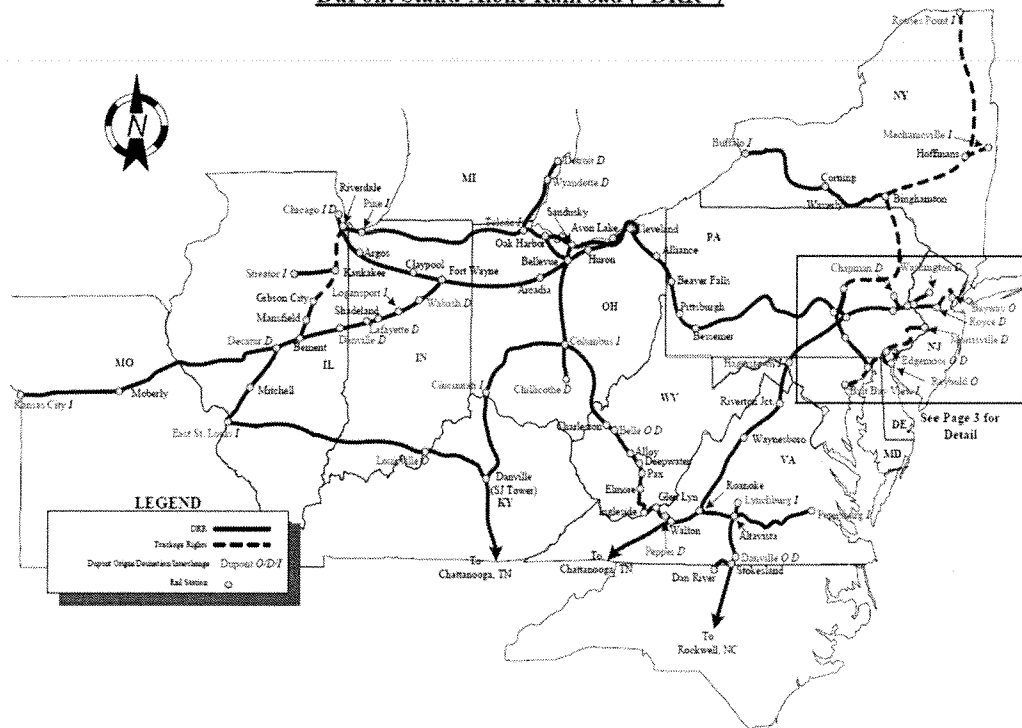
DuPont pursued relief under the agency's stand-alone cost (SAC) test. Under this test, for traffic over which a rail carrier has "market dominance," the parties must hypothesize a stand-alone railroad (SARR) that could serve the traffic at issue if the rail industry were free of entry barriers. Under the SAC test, the challenged rates cannot be higher than what the SARR would need to charge to serve the complaining shipper while fully covering all of its costs and earning a reasonable return on investment. This SAC analysis produces a simulated competitive rate against which the challenged rates are judged. In this analysis, rates are sometimes expressed as the ratio of revenue to variable cost (R/VC).

For this case, DuPont created the hypothetical DuPont Stand-Alone Railroad (DRR). The DRR would operate in 20 states with over 7,200 constructed route miles and another 820 miles in trackage rights and joint facilities. The DRR would handle all or some of the line haul for 92% of NS's current traffic base and would claim 74% of NS's overall revenues. The DRR would handle nearly 6.2 million carloads and earn \$6.6 billion in revenue in its first full calendar year of operations. As a railroad carrying a significant amount of carload traffic, the DRR must have an operating plan that accounts for the movement of each carload from its specific origin to its specific destination. This includes moving cars to and from yards, classifying cars into blocks and trains, and picking up and delivering cars to shipper facilities. At the same time, the DRR must move unit trains and time-sensitive intermodal traffic on its system.

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<sup>2</sup> NS provides transportation in single-line service for 17 of the challenged lanes. For the other 121 lanes, NS operates in joint-line service with one or more other railroads. In this decision, these categories are identified with "A-" (single-line) and "B-" (joint-line) designations. DuPont previously had challenged an additional 29 lanes, but elected to remove them from the case prior to filing its opening evidence.

<sup>3</sup> These 26 commodities are: anhydrous methylamines (AHM), aniline oil, aqueous methylamines (AQM), bio-propanediol (PDO), chlorine, difluoroethane (DFE), dimethyl ether (DME), dimethyl formamide (DMF), dimethyl sulfate (DMS), flammable liquid waste (WFL), fuming sulfuric acid, glycolic acid, lime, monomethyl formamide (MMF), muriatic acid, petroleum coke, polyethylene, potassium caustic, sodium caustic, sodium methyrate, spent sulfuric acid, sulfur trioxide, sulfuric acid, titanium dioxide, titanium tetrachloride, and zircon sand.

**DuPont Stand-Alone Railroad ("DRR")**

In this case, DuPont has not demonstrated that the challenged rates are unreasonable under the SAC test. Accordingly, the Board will not prescribe rates for DuPont's traffic.

## NS MOTION TO DISMISS

On October 24, 2013, NS filed a motion to dismiss the case pursuant to 49 U.S.C. § 11701(c), arguing that, because proceedings in this case have not concluded by the end of the third year after the date on which it began, the instant proceeding should be dismissed. DuPont filed a reply to the motion on November 11, 2013, arguing that § 11701(c) does not require dismissal of the case. As DuPont has failed to show that the rates NS charges on the issue traffic are unreasonable, the motion to dismiss need not be addressed in this decision.

## MARKET DOMINANCE

### A. Introduction

The Board's market dominance inquiry seeks to determine whether there is "effective competition from other carriers or modes of transportation for the transportation to which a rate applies." 49 U.S.C. § 10707(a). This inquiry comprises two components, the first of which is quantitative. The statute establishes a conclusive presumption that a railroad does not have market dominance if the rate charged produces revenues that are less than 180% of its variable costs<sup>4</sup> of providing the service. 49 U.S.C. § 10707(d)(1)(A).<sup>5</sup>

If this quantitative R/VC ratio threshold is met, the Board moves to the second component, a qualitative analysis. Wis. Power & Light Co. v. Union Pac. R.R., 5 S.T.B. 955, 961 (2001), aff'd sub nom. Union Pac. R.R. v. STB, 62 F. App'x 354 (D.C. Cir. 2003). In this analysis, the Board determines whether there are any feasible transportation alternatives that are sufficient to constrain the railroad's rates to competitive levels, considering both intramodal

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<sup>4</sup> Variable costs are those railroad costs that vary with the level of output. The comparison of revenues to variable costs, reflected as a percentage figure, is known as an R/VC ratio.

<sup>5</sup> In this case, both parties stipulate in the narrative sections of their filings that NS's R/VC ratios exceed the 180% threshold for all of the challenged rates. See DuPont Opening I-3; NS Reply II-A-1. We conclude, however, that the R/VC ratios associated with the Charlotte-Fort Mill (sulfuric acid) rate—which governs the movements on lanes B-93 and B-118—fall below the statutory jurisdictional threshold after taking into account the proper mileage calculations for these movements. Even using the mileages NS estimated in its reply (NS Reply Exhibit III-A-3, at p. 3) and DuPont accepted in its rebuttal (DuPont Rebuttal II-A-4 & Exhibit II-A-13, at p. 2-3), the resulting R/VC ratios are below 180%.

competition—competition from other railroads—and intermodal competition—competition from other modes of transportation such as trucks, transload arrangements, barges, or pipelines. E.I. du Pont de Nemours & Co. v. CSX Transp., Inc. (2008 DuPont I), NOR 42099, slip op. at 2 (STB served June 30, 2008). Even where feasible transportation alternatives are shown to exist, those alternatives may not provide “effective competition.” See Mkt. Dominance Determinations & Consideration of Prod. Competition (Mkt. Dominance II), 365 I.C.C. 118, 129 (1981) (“Effective competition for a firm providing a good or service means that there must be pressures on that firm to perform up to standards and at reasonable prices, or lose desirable business.”), aff’d sub nom. W. Coal Traffic League v. United States, 719 F.2d 772 (5th Cir. 1983) (en banc).

Market dominance is particularly complicated in this case because of the large number of origin/destination pairs and the number of commodities involved. The movement origins and/or destinations can be served via rail (for the most part) only by NS.<sup>6</sup> Although most of the various commodities at issue in this case physically can also be transported via truck or rail/truck movements,<sup>7</sup> to find that market dominance is not present it is not enough simply to establish that truck or truck/rail service compete to some extent with NS rail service. As DuPont correctly observes, at some point even a monopolist could price its services so high that plainly unrealistic transportation alternatives will eventually serve to constrain rates. See, e.g., Ariz. Pub. Serv. Co. v. United States (APS 1984), 742 F.2d 644, 651 (D.C. Cir. 1984). Rather, the central issue in determining market dominance in this case is whether truck or truck/rail alternatives function as “effective” constraints on NS’s pricing—i.e., whether they constitute competition sufficient to deter NS from charging monopoly prices for the transportation of DuPont’s products.

Most rate cases over the last two decades were brought by utilities challenging rates for the transportation of large coal volumes with relatively few origins and destinations. Truck or truck/rail alternatives are rarely a feasible alternative to direct rail service in such cases. Thus, the most typical pattern in past rate cases has been either that (1) defendant railroads concede market dominance, or (2) the questions relating to market dominance were relatively straightforward and easy to resolve. In cases such as the instant one, however, involving a variety of different commodities with multiple origins and destinations, both the qualitative market dominance inquiry and the SAC analysis can be exponentially more complicated.

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<sup>6</sup> NS claims that there are direct rail alternatives for several origin and destination pairs. This claim is addressed in the redacted, public version of the market dominance appendix (Appendix E). The unredacted, highly confidential version of this appendix was released only to the parties’ outside counsel.

<sup>7</sup> NS concedes that barge transportation is not a competitive alternative for any of the issue movements. See NS Reply II-B-1 n.1.

## B. Limit Price

As the Board first explained in a recent rate case, there is a need for a more objective approach in cases where the market dominance analysis is complicated by the large numbers of origin and destination pairs involved. See M&G Polymers USA, LLC v. CSX Transp., Inc. (M&G), NOR 42123, slip op. at 3 (STB served Sept. 27, 2012) (case settled prior to merits determination). After concluding that neither party had offered a satisfactory approach to resolving market dominance that would adequately take these complications into account, the Board in M&G applied an approach designed to help it to gauge objectively whether feasible direct rail, direct truck, or truck/rail transload alternatives were effectively constraining the railroad's pricing. See M&G, slip op. at 13-21. It also sought public comments on this approach. See M&G, slip op. at 18. The Board's majority again applied the same methodology for determining market dominance in a subsequent rate case. See Total Petrochems. & Refining USA, Inc. v. CSX Transp., Inc. (TPI I), NOR 42121, slip. op. at 16-29 (STB served May 31, 2013), reconsideration denied (TPI II) (STB served Dec. 19, 2013) (with Vice Chairman Begeman dissenting in both), appeal docketed sub nom. CSX Transp., Inc. v. STB, No. 13-1313 (D.C. Cir. Dec. 26, 2013).<sup>8</sup>

Under the approach used in M&G and TPI I, which was termed the "limit price" approach, as a threshold matter transportation alternatives to the challenged movement that were feasible from a practical (i.e., physical) standpoint were identified.<sup>9</sup> After this initial step, the "limit price," i.e., the highest price the defendant carrier theoretically could charge for the issue traffic without causing a significant amount of that traffic to be diverted to a particular competitive alternative, was calculated. Second, the "limit price R/VC ratio" was calculated by comparing the limit price to the defendant carrier's variable costs of providing the service at issue. Finally, the limit price R/VC ratio was compared to the defendant carrier's most recent Revenue Shortfall Allocation Method (RSAM) figure—the measure of the average markup that the defendant carrier would need to collect from all of its potentially captive traffic to earn a

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<sup>8</sup> CSX filed with the Board a petition seeking a stay, pending judicial review, of the December 19, 2013 decision. The Board, with Vice Chairman Begeman dissenting, denied the petition. Total Petrochems. & Refining USA, Inc. v. CSX Transp., Inc., NOR 42121 (STB served Jan. 2, 2014).

<sup>9</sup> Many prior Board discussions of market dominance have used the term "feasibility" differently, encompassing both a practical/physical analysis as well as an economic one. Under a limit price approach, however, the term is used solely to describe the concept of "practical feasibility"—i.e., whether an alternative is possible from a practical standpoint given real-world constraints. Determining whether or not such an alternative is effectively constraining the rate at issue is a distinct inquiry engaged in after the determination of practical feasibility.

return on investment equal to the cost of capital.<sup>10</sup> If the limit price R/VC ratio exceeded the defendant carrier's RSAM figure, there would be a preliminary conclusion that the alternative cannot exert competitive pressure sufficient to effectively constrain the rate at issue. If the limit price R/VC ratio fell below the RSAM figure, the preliminary conclusion would be that the competitive alternative effectively constrains the rate at issue. The preliminary conclusion could be overcome by evidence demonstrating that the alternative upon which the limit price was based—or the challenged rail transportation itself—had certain intangible qualities that bore on the alternative's ability to effectively constrain the rate at issue.

In TPI I and TPI II, the Board's majority explained why it believed that the limit price approach was an appropriate way to determine market dominance, why it was economically sound, and why its use in those proceedings was permissible. TPI I, slip op. at 19-27; TPI II, slip op. at 5-14. The majority also stated that the limit price approach was not a binding rule and that, while the majority chose to use a limit price approach in that case, the agency would be open to other ways to address the competitiveness of suggested transportation alternatives. TPI I, slip op. at 22; TPI II, slip op. at 7-8. Here, although NS and (to a lesser extent) DuPont have expressed concerns about the limit price approach—concerns that generally were addressed by the Board in TPI I and TPI II<sup>11</sup>—no better approach has been presented. NS would simply compare the price of the alternative to the challenged rate, and, if the two figures are similar, declare that effective competition exists.<sup>12</sup> However, as the Board's majority said in TPI, the

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<sup>10</sup> The Board has previously indicated that the fact that a particular rate produces an R/VC ratio which falls below the carrier's RSAM number indicates that competitive transportation alternatives likely exist and are exerting downward pressure on the rate governing that traffic. See Simplified Standards for Rail Rate Cases (Simplified Standards 2007), EP 646 (Sub-No. 1), slip op. at 81 (STB served Sept. 5, 2007) (suggesting that a rate that falls below RSAM is "being constrained by . . . market forces"), aff'd sub nom. CSX Transp., Inc. v. STB, 568 F.3d 236 (D.C. Cir. 2009), vacated in part on other grounds, 584 F.3d 1076 (D.C. Cir. 2009).

<sup>11</sup> Compare NS Reply II-B-43 to II-B-45 with TPI I, slip op. at 21-22 & TPI II, slip op. at 5-7 (addressing rail carrier argument that 49 U.S.C. § 10707(d)(2) expressly bars use of the limit price approach when considering qualitative market dominance); compare NS Reply II-B-46 to II-B-49 with TPI I, slip op. at 21-22 & TPI II, slip op. at 7-9 (addressing rail carrier argument that use of the limit price approach requires its adoption via notice-and-comment rulemaking); compare NS Reply II-B-49 to II-B-57 with TPI I, slip op. at 22-26 & TPI II, slip op. at 9-14 (addressing rail carrier arguments that the limit price approach is arbitrary and economically meaningless); compare DuPont Rebuttal II-B-209 to II-B-216 with TPI I, slip op. at 26 & n.78 (addressing shipper argument that the limit price approach should only be used to demonstrate the absence—but not the existence—of effective competition and that the RSAM benchmark should be replaced by the revenue-to-variable-cost-greater-than-180 ratio).

<sup>12</sup> See, e.g., NS Reply II-B-94 to II-B-98.

mere fact that a rail carrier prices its services right at the threshold where, if slightly higher, it might begin to lose traffic to an alternative does not indicate whether that alternative is constraining rates effectively. DuPont would compare the price of the alternative to the challenged rate, and would conclude that competition conclusively does not exist if the alternative is at least 10% more than the challenged rate.<sup>13</sup> Certain transportation alternatives, however, even if more expensive, may constrain rates if they have characteristics that render them more desirable than transportation by rail.

The Board will apply the methodology developed in M&G, and applied in the pending TPI rate case, in order to resolve the question of market dominance here because no better methodology is currently available to the Board to resolve complex cases of market dominance. Thus, to assess whether the rates on the many lanes at issue in this case are being effectively constrained, the transportation alternatives presented by the parties will first be examined to determine if they are feasible from a practical (i.e., physical) standpoint. The limit price will then be calculated for those alternatives that are in fact feasible from a practical standpoint. Because, as noted, just identifying the limit price does not end the inquiry, this limit price will then be compared to the railroad's variable costs of providing the service at issue. If this ratio of the limit price over variable costs (i.e., the "limit price R/VC ratio") exceeds NS's 2011 RSAM figure,<sup>14</sup> it will result in a preliminary conclusion that the alternative cannot exert competitive pressure sufficient to constrain rates effectively. If, in contrast, the limit price R/VC ratio falls below this RSAM figure, it will result in a preliminary conclusion that the competitive alternative effectively constrains the rate at issue. The further the limit price R/VC ratio is above

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<sup>13</sup> See, e.g., DuPont Opening I-14 to I-22. DuPont cites the Board's 2008 DuPont I decision as support for this proposition, asserting that the decision "concluded that a 10% rate disparity after a substantial rail rate increase was sufficient to demonstrate a lack of effective competition." DuPont Opening I-15. DuPont has read this decision too broadly. 2008 DuPont I, slip op. at 7, plainly stated that the Board "considered a number of factors in reaching" the conclusion that trucking did not provide effective competition in that case, only one of which was "the conflicting evidence submitted by the parties regarding the cost difference between rail and truck for shipping" the commodity at issue. Other factors relevant to the Board's market dominance conclusion were the infrequency of truck shipments, the commodity's physical characteristics, customer preferences, and the level of the challenged rate itself. 2008 DuPont I, slip op. at 7-8.

<sup>14</sup> NS's 2011 RSAM figure—covering the 4-year period from 2008-2011—is 275%. See Simplified Standards for Rail Rate Cases—2011 RSAM & R/VC<sub>>180</sub> Calculations (Simplified Standards 2013), EP 689 (Sub-No. 4), slip op. at 3 (STB served Feb. 11, 2013).



or below the RSAM figure, the stronger the preliminary conclusion that the alternative is either effectively constraining or not effectively constraining the rate governing the issue traffic.<sup>15</sup>

Finally, the question of whether the alternative has any intangible features sufficient to overcome the applicable preliminary conclusion will be considered. For example, if an otherwise uncompetitive alternative provides certain unquantifiable benefits to the shipper, it could be determined that an alternative with a limit price R/VC ratio above the RSAM figure nonetheless effectively exerts market pressure on the railroad sufficient to deter it from charging monopoly prices.<sup>16</sup> Alternatively, if the challenged rail transportation provides certain unquantifiable benefits, it could be determined that an alternative with a limit price R/VC ratio below the RSAM figure nonetheless does not place effective market pressure on the railroad.<sup>17</sup>

### **C. Origin and Destination of Transportation Alternatives**

Prior to applying the limit price approach, a preliminary issue must first be addressed regarding what types of transportation alternatives may be considered. For many of the joint-line movements, NS has offered “direct trucking” or transload alternatives involving transportation over the entire length of the movement, rather than just between the origin and destination points on NS’s portion, in an effort to demonstrate that it lacks market dominance over the movement. Throughout its pleadings, DuPont contends that such evidence does not constitute evidence of “direct” competition, but rather is evidence of indirect “geographic” competition that is

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<sup>15</sup> In situations involving multiple proposed alternatives, only the lowest-priced feasible alternative—i.e., the feasible alternative with the lowest limit price and therefore the lowest limit price R/VC ratio—has been utilized in the comparison with the carrier’s RSAM figure.

<sup>16</sup> See, e.g., M&G, slip op. at 59 (concluding that the proposed direct truck alternative provided advantages over the challenged Apple Grove-Clifton Forge rail transportation because direct trucking generally provides certain customer-related benefits, such as the ability to respond more quickly to customer delivery requests); M&G, slip op. at 37-38 (noting the possibility that direct truck alternatives generally might involve certain intangible benefits vis-à-vis rail transportation, such as increased reliability, better on-time performance, and the provision of certain inventory control benefits to the parties).

<sup>17</sup> See, e.g., M&G, slip op. at 58-59 (concluding that the challenged Apple Grove-Belpre rail transportation provided advantages over the proposed direct truck alternative because the movement’s destination was a railcar storage facility and the alternative would have both (a) necessitated significant railcar prepositioning simply for purposes of storage, and (b) foreclosed the possibility of subsequent delivery via truck due to product integrity concerns with more than two transloads); M&G, slip op. at 56 n.254 (noting the possibility that transportation via railcar generally might involve certain intangible benefits vis-à-vis transload alternatives, such as presumed shorter transport times).

impermissible under Minnesota Power, Inc. v. Duluth, Missabe & Iron Range Railway (DMIR I), 4 S.T.B. 64 (1999), and Minnesota Power, Inc. v. Duluth, Missabe & Iron Range Railway (DMIR II), 4 S.T.B. 288 (1999). As explained in greater detail below, the DMIR decisions hold that in a challenge to a so-called “bottleneck” tariff rate that operates in combination with a contract rate,<sup>18</sup> evidence of alternative transportation must be between the same precise origin and destination to which the challenged tariff rate applies (i.e., the origin and destination of the bottleneck segment). Otherwise, it is treated as a form of prohibited indirect competition—i.e., geographic competition—which the Board no longer considers in its market dominance inquiry.<sup>19</sup>

The validity of the DMIR decisions was first called into question in Total Petrochemicals & Refining USA, Inc. v. CSX Transportation, Inc., Docket No. NOR 42121, and M&G Polymers USA, LLC v. CSX Transportation, Inc., Docket No. NOR 42123. In those cases, the issue was not addressed for procedural reasons.<sup>20</sup> In this case, certain evidence presented by both parties conflicts with the DMIR precedent. In contrast to the complainants in M&G and TPI, DuPont on

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<sup>18</sup> In the “bottleneck” line of cases, the Board established the principle that rates governing bottleneck segments (those in which either the origin or destination of the overall movement is served by a single rail carrier) can be independently challenged for reasonableness when the balance of the overall movement is governed by a transportation contract between the shipper and the connecting carrier. See Cent. Power & Light Co. v. S. Pac. Transp. Co., 1 S.T.B. 1059 (1996), clarified, 2 S.T.B. 235 (1997), aff’d sub nom. MidAm. Energy Co. v. STB, 169 F.3d 1099 (8th Cir. 1999). Again, for 121 of the lanes challenged by DuPont in this case, which are governed by 83 separate rates, NS operates in joint-line service with one or more other railroads. All of these represent rates for bottleneck segments. See DuPont Opening I-2.

<sup>19</sup> By way of example, assume a shipper challenges a tariff rate for transportation by one carrier from New York City to Trenton, N.J., where the traffic is then interchanged with a different carrier (which charges a contract rate) for delivery to the shipper’s plant in Washington, D.C. Pursuant to the DMIR decisions, the parties may not submit evidence that the product could be effectively trucked from N.Y.C. to D.C. Although D.C. is the overall movement’s ultimate destination, it is not the destination for purposes of the transportation covered by the challenged tariff rate. Thus, under the DMIR decisions, the parties would need to show the presence (or absence) of effective competition to move the product from N.Y.C. to Trenton.

<sup>20</sup> See TPI I, slip op. at 10 n.29 (explaining that because the Board’s majority was deciding respondent’s motion to strike on the basis that complainant’s DMIR-related arguments constituted impermissible rebuttal evidence, the majority declined to address “whether DMIR is distinguishable on its facts from the instant case,” whether “DMIR correctly applied [our governing market dominance principles], and, even if it did correctly apply those principles, whether DMIR should be overruled”); M&G, slip op. at 10 n.27 (similar).

opening properly raised the argument that the Board should disregard transportation alternatives that do not comply with the DMIR decisions.<sup>21</sup> Thus, the issue is now squarely before the Board.

Proper resolution of this issue substantially depends on an analysis of the statutory and regulatory history concerning the distinction between direct and indirect competition, so we begin our inquiry there. We then proceed to a brief review of the DMIR decisions and a presentation of the various arguments put forth by the parties in this case. We then present our analysis.

## **1. Statutory and Regulatory History of Direct v. Indirect Competition**

The Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act) gave the Interstate Commerce Commission (ICC) discretion to establish rules and procedures for determining whether and when a carrier possesses market dominance. See Pub. L. 94-210, § 202(b), 90 Stat. 31 (1976). The ICC's adoption of market dominance rules shortly after passage of the 4R Act limited the market dominance inquiry to evaluating the effects of direct competition on a railroad's ability to set its rates. See Special Procedures for Making Findings of Mkt. Dominance as Required by the R.R Revitalization & Regulatory Reform Act of 1976 (Mkt. Dominance I), 353 I.C.C. 875 (1976), aff'd sub nom. Atchison, Topeka & Santa Fe Ry. v. ICC, 580 F.2d 623 (D.C. Cir. 1978). In Market Dominance I, the ICC concluded that the statute prohibited consideration of anything other than evidence of direct competition, based on the "effective competition . . . for the traffic or movement to which a rate applies" language. 353 I.C.C. at 904 (citing § 202 of the 4R Act). The ICC defined direct competition as transportation alternatives providing "services which directly compete with the service outlined in the tariff under consideration."<sup>22</sup>

The Staggers Rail Act of 1980 did not alter the agency's discretionary authority regarding market dominance standards. In another rulemaking following passage of the Staggers Act, the ICC concluded that the statute's definition of market dominance had "a range of possible interpretations which Congress left to the Commission to fix exactly," thereby reversing its position that the agency was precluded by statute from considering anything other than direct competition—i.e., "other carriers transporting the same commodity between the origin and destination to which the challenged rate applies"—in its market dominance inquiry. Mkt. Dominance II, 365 I.C.C. at 128-29. Because indirect competition can sometimes effectively discipline a carrier's tariff rates, Market Dominance II concluded that geographic and product

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<sup>21</sup> DuPont Opening I-12 to I-14.

<sup>22</sup> Mkt. Dominance I, 353 I.C.C. at 904. See also Mkt. Dominance I, 353 I.C.C. at 907 (referring to alternatives offered by other carriers and other modes involving the provision of "transportation services available for moving a particular commodity from . . . the origin area named in the tariff to . . . the named destination area").

competition should be considered in the market dominance inquiry alongside competition involving other “carriers or modes of transportation serving the same origin/destination pair as that for the disputed rate.”<sup>23</sup>

The ICC Termination Act of 1995 (ICCTA) did not diminish the agency’s discretion regarding its market dominance rules and procedures.<sup>24</sup> Thus, in 1998, the Board elected once again to limit the market dominance inquiry to direct competition only.<sup>25</sup> While Market Dominance III reached the same result as Market Dominance I, it relied on a different rationale for doing so. In contrast to Market Dominance I, Market Dominance III first concluded that the only form of competition required by statute to be included in the Board’s market dominance inquiry is direct competition.<sup>26</sup> That, explained the Board, is because the statute permits, but does not require, the consideration of indirect competition. Mkt. Dominance III, 3 S.T.B. at 946. Employing a balancing test in an effort to meet competing statutory objectives, the Board then concluded that consideration of indirect competition significantly impedes the efficient processing of rate cases. Mkt. Dominance III, 3 S.T.B. at 948. The Board acknowledged that product and geographic competition can be effective competitive constraints on rail pricing, but, in its discretion, chose to balance the interest of exploring every possible form of competition that might constrain a railroad’s rates against the burden, time, and expense of performing such an investigation. Mkt. Dominance III, 3 S.T.B. at 946-48. “On balance,” explained the Board, “there is no question that the scale tips in favor of limiting the market dominance inquiry to the literal statutory requirement.” Mkt. Dominance III, 3 S.T.B. at 949. As a result, the inquiry is now limited to the consideration of direct competition—i.e., intra- and intermodal alternatives

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<sup>23</sup> Mkt. Dominance II, 365 I.C.C. at 129. See also Mkt. Dominance II, 365 I.C.C. at 132-33 (defining intramodal competition as “competition between two or more railroads transporting the same commodity between the same origin and destination” and intermodal competition as “competition between rail carriers and other modes for the transportation of a particular product between the same origin and destination”).

<sup>24</sup> See H.R. Conf. Rep. No. 104-422, at 173 (1995) (stating that while the conference provision would not disturb the existing statutory standard or the current agency regulations concerning the market dominance standard, there was recognition that the agency had broad discretion to revise and supplement its standards and regulations as appropriate).

<sup>25</sup> See Mkt. Dominance Determinations—Prod. & Geographic Competition (Mkt. Dominance III), 3 S.T.B. 937, 950 (1998), remanded sub nom. Ass’n of Am. R.R. v. STB, 237 F.3d 676 (D.C. Cir. 2001), reaff’d by Mkt. Dominance Determinations—Prod. & Geographic Competition (Mkt. Dominance IV), 5 S.T.B. 492 (2001), pet. for review denied sub nom. Ass’n of Am. R.R. v. STB, 306 F.3d 1108 (D.C. Cir. 2002).

<sup>26</sup> 3 S.T.B. at 946 (citing Mkt. Dominance I and Mkt. Dominance II for the proposition that “the plain language of the statute only requires that we consider alternatives for moving the same product between the same origin and destination points”).

for “transport[ing] the same commodity between the same points.” Mkt. Dominance III, 3 S.T.B. at 937.

## 2. The DMIR Decisions

The instant controversy involves the Board’s interpretations of “direct” and “geographic” competition announced in a discovery dispute in the DMIR decisions. In that proceeding, Minnesota Power, Inc. (MP) challenged the reasonableness of the rates charged by Duluth, Missabe and Iron Range Railway Company (DMIR) for the transportation of coal from a connection with Burlington Northern and Santa Fe Railway Company (BNSF) at Keenan, Minn., to MP’s Laskin generating facility near Colby, Minn. On May 11, 1999, the Board served a decision that, in part, denied a motion to compel discovery filed by DMIR. DMIR sought documents and information in support of its argument that the principal alternative to DMIR’s service of the issue traffic was existing single-line rail service provided by BNSF from the same Montana and Wyoming mines to MP’s Boswell facility, a BNSF-served power plant, where MP could transload the coal onto trucks for delivery to the Laskin facility. The Board denied the motion on the grounds that the Board had, in Market Dominance III, “limited the market dominance inquiry to an examination of the intra- and intermodal transportation alternatives between the points to which the rate applies.” DMIR I, 4 S.T.B. at 66. Therefore, the Board ruled, any evidence of truck deliveries to Laskin would be relevant only if they originated in Keenan. DMIR I, 4 S.T.B. at 66.

Following a petition for reconsideration filed by DMIR, the Board clarified that the transportation alternative proposed by DMIR constituted improper “geographic” competition, explaining that:

For a separately challengeable bottleneck-segment rate, transportation alternatives between the “same origin and destination points” . . . must necessarily refer to those between the interchange point at which the bottleneck carrier obtains the traffic and the point of delivery.

DMIR II, 4 S.T.B. at 292 n.13. “Because the transportation to which the rate at issue applies is limited to the movement between Keenan and Laskin,” explained the Board, “transportation alternatives involving service to or from other points would constitute geographic competition.” DMIR II, 4 S.T.B. at 292. While DMIR had argued that Market Dominance III envisioned a broader interpretation of the “origin and destination” and that requiring the origin to be a remote interchange point reached far beyond the Board’s rationale in that decision,<sup>27</sup> the Board rejected the carrier’s argument and reaffirmed its position that the origin and destination for any proposed

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<sup>27</sup> DMIR argued that under Market Dominance III, alternatives originating at the same mines constituted permissible intermodal, as opposed to impermissible geographic, competition.

alternative must directly correlate with the “transportation for which the rate applies,” i.e. the origin and destination for the challenged bottleneck segment.

### 3. Positions of the Parties

NS puts forward a number of arguments in an effort to support its contention that the Board should not follow the DMIR decisions. First, NS argues that prohibiting evidence of so-called “whole-route” competition is illogical because (1) DuPont itself actually avails itself of such alternatives in the real world, and (2) to ignore such competition would be economically irrational. Second, NS argues that the DMIR decisions are inconsistent with Congressional intent because (1) the statute requires consideration of intermodal alternatives while the DMIR decisions prohibit the consideration of whole-route intermodal alternatives, and (2) they ignore the overall Congressional policy that railroad rates should be governed by competitive forces to the maximum extent possible. Third, NS argues that the DMIR decisions represent a misapplication of the agency’s market dominance guidelines and do not accord with the definition of geographic competition reflected in past rate cases. Fourth, NS argues that the DMIR decisions are distinguishable from the case at hand. Fifth, NS argues that the DMIR decisions are inherently flawed, and—insofar as their discussions regarding market dominance are concerned—constitute non-binding dicta in any event.<sup>28</sup>

In response, DuPont first argues that the statute’s plain meaning dictates that only alternatives using the same origin and destination as the challenged bottleneck segment may be considered in the Board’s market dominance inquiry, and that NS has selectively quoted the statute and its legislative history to bolster its contrary argument. Second, DuPont argues that overturning the DMIR decisions would lead to divergence in treatment of the challenged movement not only in the context of (1) rate reasonableness vs. market dominance, but also in the context of (2) quantitative market dominance vs. qualitative market dominance. Third, DuPont argues that NS’s position that whole-route alternatives function to effectively discipline its bottleneck segment rates is premised on an outdated understanding of economics and is contrary to more recent judicial precedent. Fourth, DuPont argues that NS’s proposal would be unwieldy and impractical. Fifth, DuPont contends that agency precedent (rulemakings and cases) does not support NS’s position. Sixth, DuPont argues that the DMIR decisions are not distinguishable from the case at hand.<sup>29</sup>

### 4. Board Analysis

The DMIR decisions correctly held that whole-route alternatives fall outside the agency’s traditional definition of direct competition as set forth in various prior Board decisions. Market

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<sup>28</sup> See generally NS Reply II-B-58 to II-B-91.

<sup>29</sup> See generally DuPont Rebuttal I-48 to I-71.

Dominance III clearly and unambiguously concluded that the Board's market dominance inquiry is now limited to considering alternatives that directly compete with the "transportation to which [the challenged] rate applies." Since 1976, the agency has consistently defined direct competition as alternatives offered by other carriers or modes involving the provision of "transportation services available for moving a particular commodity from . . . the origin area named in the tariff to . . . the named destination area." Mkt. Dominance I, 353 I.C.C. at 907.<sup>30</sup> Because whole-route alternatives fall outside the definition of direct competition (adopted in prior Board decisions), and because the Board's market dominance inquiry is now limited to direct competition only, the DMIR decisions correctly applied our current market dominance guidelines to exclude the consideration of such alternatives from our qualitative market dominance analysis.

The exclusion of whole-route alternatives from the market dominance inquiry is consistent with the "legislative directive to process rate complaints more expeditiously and the long-standing Congressional intent that market dominance be a practical determination made without delay." Mkt. Dominance III, 3 S.T.B. at 938. Limiting the inquiry to alternative transportation covering the origin and destination of the bottleneck segment will significantly decrease the burden, time, and expense of performing the market dominance inquiry, consistent with the exclusion of indirect competition under Market Dominance III. Exclusion of whole-route alternatives also serves to harmonize the qualitative market dominance analysis with the quantitative market dominance analysis and the Board's rate reasonableness review, all of which are premised on similar statutory language (i.e., "the transportation to which the rate applies" language).<sup>31</sup>

For the above reasons, consideration of whole-route alternatives will be excluded from the market dominance analysis. NS's various arguments do not demonstrate that such a course is inappropriate or unjustified. First, the reasons set forth in the DMIR decisions and the policy considerations described above outweigh the concerns expressed by NS regarding the practical

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<sup>30</sup> See also Mkt. Dominance II, 365 I.C.C. at 129 (describing direct competition as involving "carriers or modes of transportation serving the same origin/destination pair as that for the disputed rate"); Mkt. Dominance III, 3 S.T.B. at 937 (describing direct competition as involving intra- and intermodal alternatives for "transport[ing] the same commodity between the same points").

<sup>31</sup> See 49 U.S.C. §§ 10701(d)(1), 10707(a)-(b), 10707(d)(1)(a). In cases involving bottleneck segments (such as the instant one), the Board's quantitative market dominance analysis and rate reasonableness review are limited to the challenged bottleneck segments at issue. Allowing evidence of whole-route alternatives would render the qualitative market dominance analysis inconsistent with the other components of the Board's review, given that the "transportation to which the rate applies" language for purposes of the former would necessarily have to be read more broadly to include the entire through route.

consequences of excluding whole-route alternatives from our qualitative market dominance analysis. The fact that DuPont avails itself of such alternatives for certain of the challenged movements says nothing about whether these alternatives constitute forms of direct competition—which may be considered under our current market dominance guidelines—or forms of indirect competition—which may not be considered under the current guidelines.

Second, the prohibition on whole-route alternatives initially set forth in the DMIR decisions is consistent with the Board's various (and often conflicting) statutory directives. In Market Dominance III and Market Dominance IV the Board balanced the rail transportation policy directives and, notwithstanding the guidance of 49 U.S.C. § 10101(1) and the directives of 49 U.S.C. § 10707(a), decided to prohibit consideration of indirect forms of competition. Mkt. Dominance III, 3 S.T.B. at 948.<sup>32</sup> This same concern supports the conclusion reached by the Board in the DMIR decisions that whole-route alternatives do not constitute a form of direct competition for bottleneck segments and therefore should be excluded from the qualitative market dominance inquiry.

Third, as the above discussion makes clear, whole-route alternatives fall outside the agency's traditional definition of direct competition as consistently set forth in the agency's various market dominance decisions dating back almost 40 years. NS seeks to undermine this fact by arguing that two prior ICC and Board decisions included consideration of whole-route alternatives in their analysis of direct competition rather than their analysis of indirect competition.<sup>33</sup> Both cases cited by NS were decided under market dominance regimes that included consideration of both forms of competition.<sup>34</sup> Despite NS's assertion to the contrary, neither case ever "held that . . . whole-route competitive alternatives analogous to the whole-

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<sup>32</sup> Indeed, Market Dominance IV, 5 S.T.B. at 497-99, specifically considered all of the relevant goals of the Rail Transportation Policy set forth in 49 U.S.C. § 10101 and concluded that the exclusion of indirect competition represented an appropriate balance of competing statutory directives.

<sup>33</sup> See NS Reply II-B-78 to II-B-80.

<sup>34</sup> The first case cited by NS, Dayton Power & Light Co. v. Louisville & Nashville Railroad, 1 I.C.C. 2d 375 (1985), was decided at a time—between Market Dominance II in 1981 and Market Dominance III in 1998—when the agency considered both direct and indirect competition in rail rate cases. While the second case cited by NS, CF Industries, Inc. v. Koch Pipeline Co., 4 S.T.B. 637 (2000), was decided after Market Dominance III, it was decided under the Board's pipeline rate jurisdiction. In pipeline cases, while the Board is "guided generally" by its rail market dominance guidelines, it concluded in CF Industries that the concerns which led it to prohibit consideration of indirect competition in rail rate cases were not present with respect to pipeline rate cases. CF Industries, 4 S.T.B. at 641-42. Thus, the Board considered both direct and indirect competition in CF Industries just as it had in Dayton Power.



route truck competition at issue here”<sup>35</sup> constituted direct competition. Proper characterization of those alternatives was neither a contested issue in those cases nor necessary to the rationale upon which those decisions were based.<sup>36</sup>

#### **D. Application to This Case**

In the qualitative market dominance inquiry, the complainant bears the burden of establishing the absence of effective competition from other rail carriers or modes of transportation for the traffic to which the challenged rate applies.<sup>37</sup> DuPont demonstrates in its opening evidence, and NS concedes on reply, that no effective intermodal or intramodal competition exists for 25 rates governing 39 of the challenged movements.<sup>38</sup> The parties

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<sup>35</sup> NS Reply II-B-78 (emphasis added).

<sup>36</sup> As a result, it is immaterial that the Board did not discuss Dayton Power in the DMIR decisions.

Furthermore, NS’s argument that the DMIR decisions are distinguishable from the case at hand is unpersuasive. The fact that the proffered alternative at issue in those decisions (rail from the mines to an interchange point at Boswell where the coal would be transloaded onto truck) was of the same “type” as what the Board would have permitted (rail from the mines to an interchange point at Keenan where the coal would be transloaded onto truck) was irrelevant to the reasoning of the DMIR decisions. The logic of those decisions would have equally prohibited alternatives involving the direct trucking of coal from the mines to Laskin (given that the scope of potential alternatives was limited to those involving service from and to the points of the challenged bottleneck segment only).

<sup>37</sup> See 49 U.S.C. § 10707. See also CSX Corp.—Control & Operating Leases/Agreements—Conrail Inc., 3 S.T.B. 196, 266 (1998); Gov’t of the Territory of Guam v. Sea-Land Serv., Inc., WCC 101, slip op. at 5-6 (STB served Feb. 2, 2007) (“In rail cases, because a finding of market dominance is a threshold jurisdictional requirement, we place the burden of proof on the shipper to show that there is not effective competition.”).

<sup>38</sup> See DuPont Opening II-B-1 to II-B-172; NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for 39 of the challenged lanes). The following 25 separate rates govern solely uncontested movements: Belle-Chicago (AHM), Belle-Chicago (AQM), Belle-Chicago (DMF), Belle-East St. Louis (DMS), Belle-East St. Louis (glycolic acid), Belle-East St. Louis (MMF), Belle-Streator (AHM), Belle-Streator (DMF), Birmingham-McIntosh (sulfuric acid), Buffalo-Edgemoor (chlorine), Charleston-Edgemoor (chlorine), East St. Louis-Royce (DFE), Edgemoor-Riverwood (titanium dioxide), Edgemoor-Rouses Point (titanium dioxide), Edgemoor-East St. Louis (titanium tetrachloride), Edgemoor-Streator (titanium dioxide), Edgemoor-Wabash (titanium dioxide), Lemoyne-Giant (WFL), Loudon-Brathwaite (PDO), Loudon-Chattanooga (PDO), McIntosh-Lemoyne (sodium caustic), McIntosh-Mobile (chlorine), New Orleans-Dragon (DFE), New Orleans-Gracewood (sulfur trioxide), and

(continued . . . )

disagree on whether effective intermodal competition exists for 75 rates governing the other 99 movements challenged by DuPont. The parties contest whether effective intramodal competition exists for two of the challenged rates.<sup>39</sup>

The majority of the evidence submitted by the parties in this case—relating primarily to the presence or absence of effective competitive alternatives for the challenged rates—was filed under seal and is competitively sensitive. Pursuant to our protective order, this information has been shared only with outside counsel and experts; the marketing employees of neither DuPont nor NS have been allowed to access this information for any purpose. In light of the prevalence of competitively sensitive information in this case, our analysis of the record in the highly confidential market dominance appendix was provided only to the parties' outside counsel. Given the importance of guiding party conduct in future cases and educating the public, however, we are releasing a public version of the market dominance appendix that incorporates the redactions of confidential and highly confidential information contained therein that have been agreed to by the parties.

Based upon the approach described above, this decision concludes that NS lacks market dominance over the following four rates: Chicago-Edgemoor (petroleum coke, NS cars); East St. Louis-Edgemoor (petroleum coke, NS cars); East St. Louis-Edgemoor (petroleum coke, private cars); and Louisville-Lafayette (muriatic acid).<sup>40</sup> These rates all have limit price R/VC ratios that fall below NS's RSAM figure, and there are no intangible features that might otherwise suggest market dominance. In contrast, this decision concludes that NS has market dominance over the remaining rates, many of which have limit price R/VC ratios above NS's RSAM figure, and for which no other factors demonstrate that the alternatives, even if feasible, are placing competitive pressure on NS adequate to constrain rates effectively.

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( . . . continued)

Reybold-Fort Mill (sulfuric acid). The following six rates govern both contested and uncontested movements: Belle-Chicago (DME), Belle-Chicago (DMS), Belle-East St. Louis (DMF), Charlotte-Fort Mill (sulfuric acid), Edgemoor-Chicago (titanium dioxide), and New Orleans-Greenville (polyethylene).

<sup>39</sup> See NS Reply II-B-8 to II-B-9; DuPont Rebuttal II-B-3 to II-B-6.

<sup>40</sup> NS also lacks market dominance over the Charlotte-Fort Mill (sulfuric acid) rate because the R/VC ratios associated with that rate fall below the jurisdictional threshold. See supra n.5.

## RATE REASONABLENESS STANDARDS

### A. Constrained Market Pricing

The Board's general standards for judging the reasonableness of rail freight rates are set forth in Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d 520 (1985), aff'd sub nom. Consol. Rail Corp. v. United States, 812 F.2d 1444 (3d Cir. 1987), as modified in Major Issues in Rail Rate Cases (Major Issues), EP 657 (Sub-No. 1) (STB served Oct. 30, 2006), aff'd sub nom. BNSF Ry. v. STB, 526 F.3d 770 (D.C. Cir. 2008), and Rate Regulation Reforms (Adopted Rate Regulation Reforms), EP 715 (STB served July 18, 2013), appeal docketed sub nom. CSX Transp., Inc. v. STB, No. 13-1230 (D.C. Cir. July 29, 2013). These guidelines adopt a set of pricing principles known as "constrained market pricing" (CMP). The objectives of CMP can be simply stated. A captive shipper should not be required to pay more than is necessary for the carrier involved to earn adequate revenues. Nor should it pay more than is necessary for efficient service. And a captive shipper should not bear the cost of any facilities or services from which it derives no benefit. Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 523.

CMP contains three main constraints on the extent to which a railroad may charge differentially higher rates on captive traffic. The revenue adequacy constraint ensures that a captive shipper will "not be required to continue to pay differentially higher rates than other shippers when some or all of that differential is no longer necessary to ensure a financially sound carrier capable of meeting its current and future service needs." Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 535-36. The management efficiency constraint protects captive shippers from paying for avoidable inefficiencies (whether short-run or long-run) that are shown to increase a railroad's revenue need to a point where the shipper's rate is affected. Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 537-42. The SAC constraint protects a captive shipper from bearing costs of inefficiencies or from cross-subsidizing other traffic by paying more than the revenue needed to replicate rail service to a select subset of the carrier's traffic base. Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 542-46. As stated, DuPont seeks relief under the SAC constraint.

### B. SAC Test

A SAC analysis seeks to determine whether a complainant is bearing the cost of any inefficiencies or the cost of any facilities or services from which it derives no benefit; it does this by simulating the competitive rate that would exist in a "contestable market," i.e., a market that is free from barriers to entry. The economic theory of contestable markets does not depend on a large number of competing firms in the marketplace to ensure a competitive outcome. Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 528. In a contestable market, even a monopolist must offer competitive rates or lose its customers to a new entrant. Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 528. In other words, contestable markets have competitive characteristics that preclude monopoly pricing.

To simulate the competitive price that would result if the market for rail service were contestable, the costs and other limitations associated with entry barriers must be omitted from the SAC analysis. Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 529. This removes any advantages the existing railroad would have over a new entrant that create the existing railroad's monopoly power. A SARR that could serve the traffic at issue if the rail industry were free of entry barriers is therefore hypothesized. Under the SAC constraint, the rate at issue cannot be higher than what the SARR would need to charge to serve the complaining shipper while fully covering all of its costs and earning a reasonable return on investment. This analysis produces a simulated competitive rate against which we judge the challenged rate. Coal Rate Guidelines, Nationwide, 1 I.C.C. 2d at 542.

To make a SAC presentation, a shipper designs a SARR specifically tailored to serve an identified traffic group. Using information on the types and amounts of traffic moving over the defendant's rail system, the complainant selects a subset of that traffic (including its own traffic to which the challenged rate applies) that the SARR would serve.

Based on the traffic group to be served, the level of services to be provided, and the terrain to be traversed, a detailed operating plan must be developed for the SARR. Once an operating plan is developed that would accommodate the traffic group selected by the complainant, the system-wide investment requirements and operating expense requirements (including such expenses as locomotive and car leasing, personnel, material and supplies, and administrative and overhead costs) must be estimated. The parties must provide appropriate documentation to support their estimates.

It is assumed that investments normally would be made prior to the start of service, that the SARR would continue to operate into the indefinite future, and that recovery of the investment costs would occur over the economic life of the assets. The Board's SAC analyses, however, are limited to a finite period of time and examine the revenue requirements for the SARR based on the operating expenses that would be incurred over that period and the portion of capital costs that would need to be recovered during that period. A computerized discounted cash flow (DCF) model simulates how the SARR would likely recover its capital investments, taking into account inflation, Federal and state tax liabilities, and a reasonable rate of return. The annual revenues required to recover the SARR's capital costs (and taxes) are combined with the annual operating costs to calculate the SARR's total annual revenue requirements.

The revenue requirements of the SARR are then compared to the revenues that the defendant railroad is expected to earn from the traffic group, presuming that the revenue contributions from non-issue traffic are based on the revenues produced by the current rates. Traffic and rate level trends for that traffic group are forecast into the future to determine the future revenue contributions from that traffic.

The Board then compares the revenue requirements of the SARR against the total revenues to be generated by the traffic group over the SAC analysis period. A present value analysis is used that takes into account the time value of money, netting annual over-recovery and under-recovery as of a common point in time. If the present value of the revenues that would be generated by the traffic group is less than the present value of the SARR's revenue requirements, then the complainant has failed to demonstrate that the challenged rate levels violate the SAC constraint. If the present value of the revenues from the traffic group exceeds the present value of the revenue requirements of the SARR, then the Board must decide what relief to provide to the complainant by allocating the revenue requirements of the SARR among the traffic group and over time.

### NS MOTION TO STRIKE

On July 18, 2013, DuPont submitted an errata to its rebuttal evidence.<sup>41</sup> On July 25, 2013, NS filed a motion to strike the errata as an unauthorized new evidentiary filing in violation of the Board's rules and procedures. DuPont replied to the motion to strike on August 1, 2013. The motion will be granted.

In its motion to strike, NS argues that the errata constitutes prejudicial new evidence that should not have been filed without prior Board authorization. NS notes that DuPont filed the errata more than three months after filing its rebuttal, and more than a month after DuPont filed its final brief.<sup>42</sup> DuPont responds that the errata simply fixes errors and identifies the downstream impact of those corrections on the SAC analysis. Thus, according to DuPont, the pleading is correctly classified as an errata, does not constitute impermissible new evidence, and is not prejudicial to NS.<sup>43</sup>

As an initial matter, the Board routinely allows the correction of minor technical errors in SAC rate cases.<sup>44</sup> Given the size and complexity of such cases—in which thousands of data points are submitted—a standard that allows parties to correct minor errors is both appropriate and necessary. However, the flexibility to correct minor errors does not mean that major changes to an operating plan post-rebuttal are proper. See Intermountain Power Agency v.

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<sup>41</sup> This filing was DuPont's second errata to its rebuttal evidence. DuPont previously filed an errata on June 10, 2013, which has been accepted into the record.

<sup>42</sup> NS Motion to Strike 2.

<sup>43</sup> DuPont Reply to Motion to Strike 1-2.

<sup>44</sup> See, e.g., AEP Tex. N. Co. v. BNSF Ry. (AEP), NOR 41191 (Sub-No. 1), slip op. at 76 n.88 (STB served Sept. 10, 2007) (noting Board acceptance of minor change in yard acreage submitted in errata filing), reconsideration denied (STB served May 15, 2009), vacated on other grounds and remanded sub nom. AEP Tex. N. Co. v. STB, 609 F.3d 432 (D.C. Cir. 2010).

Union Pac. R.R., NOR 42127, slip op. at 3 (STB served Apr. 4, 2012) (holding that “a technical error, brought on by the complainant’s own mistake, is [not] grounds for it to modify a core part of its evidence”).

Taken as a whole, DuPont’s errata falls into this latter category. Acceptance of the filing would result in major and significant changes to the evidence presented by DuPont both on opening and rebuttal. While DuPont characterizes the proposed changes to its operating plan as merely technical, it concedes that the proposed changes in the errata would reduce the estimated excess revenue of its model by \$447.8 million.<sup>45</sup> Given the cumulative significance of the changes proposed in the errata, to allow DuPont’s filing at this point would be improper.

The bulk of the changes proposed in the errata stem from DuPont’s miscalculation regarding car classification counts.<sup>46</sup> On opening, DuPont inexplicably omitted car classification services for overhead traffic and provided no hump yards.<sup>47</sup> On rebuttal, in response to NS’s reply pointing out this oversight, DuPont provided car classification counts and provided for certain facilities based on those numbers, none of which were hump yards. The errata acknowledges that DuPont miscalculated the car classification counts (by 77% for main yards and 54% for all yards), and essentially now asks for a third chance to include the proper facilities necessitated by its newly proposed car classification figures. In the errata, DuPont proposes for the first time to include hump yards in its operating plan, going from zero hump yards in its rebuttal evidence to seven hump yards in the errata.<sup>48</sup> DuPont argues that the addition of these seven hump yards is consistent with the reasoning set forth in its rebuttal that a hump yard would not be required until a threshold of 900 cars per day were crossed.<sup>49</sup> DuPont concedes that it incorrectly concluded on rebuttal, based on its erroneous car classification numbers, that no

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<sup>45</sup> DuPont Errata to Rebuttal Evidence 4.

<sup>46</sup> Car classification counts may be used to determine the necessary amount of facilities and car classification services (e.g., yard crews, departure tracks, and switch locomotives).

The changes to DuPont’s operating plan proposed in the errata that are necessitated by the new car classification counts include the addition of hump yards and classification tracks, as well as the modification of various cycle times, operating statistics, operating expenses, road property investment, DCF model results, and Maximum Markup Methodology (MMM) model results.

<sup>47</sup> Hump yards are major freight classification facilities on rail networks that have an important impact on how the network operates. At hump yards, rail carriers switch and block trains; that is, they pull cars out of arriving trains and then reorganize the cars into new departing trains to facilitate shipments reaching their final destination.

<sup>48</sup> DuPont Errata to Rebuttal Evidence 2.

<sup>49</sup> DuPont Reply to Motion to Strike 3.

hump yards would be needed. Based on the new car classification numbers set forth in the errata, DuPont now asserts that seven hump yards are required because the 900-cars-per-day threshold has been met at those locations.<sup>50</sup>

This new evidence, which would fundamentally change DuPont's basic case, comes too late to be considered, for its acceptance at this point would unduly prejudice NS. DuPont's claim that the changes proposed in the errata are not unduly prejudicial to NS presumes that in its final brief, NS could have identified DuPont's technical error on its own, modified the entire SAC analysis accordingly, and responded to the argument it theorized DuPont would have made based on the results of that analysis. This is an unrealistic burden to impose.

DuPont further argues that, as part of its authority to fix technical errors, the Board itself could have made the same changes to the SARR that the errata provides, and DuPont claims that its filing is simply assisting the Board in that endeavor in this complex SAC analysis. The Board's authority to make its own adjustments to parties' operating plans is well-established.<sup>51</sup> However, the magnitude and scope of the corrections proposed by the errata are, when taken together, far more significant and wide-reaching than those made by the Board in prior cases.<sup>52</sup>

For the reasons stated above, NS's motion to strike DuPont's errata filing will be granted.

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<sup>50</sup> DuPont Reply to Motion to Strike 3. It appears that DuPont did not apply this reasoning in its rebuttal. While the rebuttal does state that a hump yard would be required when the 900-cars-per-day threshold is surpassed, NS notes (and DuPont concedes) that there is one instance in the rebuttal where that threshold was met based on the car classification count numbers set forth therein, yet DuPont nonetheless elected not to include that hump yard. NS Motion to Strike 7; DuPont Reply to Motion to Strike 3.

<sup>51</sup> See BNSF Ry. v. STB (BNSF 2006), 453 F.3d 473, 485 (D.C. Cir. 2006) (affirming Board's decision to add certain capital improvements to shipper's operating plan); Balt. & Ohio R.R. v. United States, 386 U.S. 372, 430 (1967) (agency "is not the prisoner of the parties' submissions" and must "weigh alternatives and make its choice according to its judgment how best to achieve and advance the goals of the National Transportation Policy") (Brennan, J., concurring).

<sup>52</sup> As noted above, the bulk of the changes proposed in the errata stem directly from DuPont's miscalculation regarding car classification counts. DuPont also proposes certain changes that are unrelated to this miscalculation, including the addition of a small number of trains and the modification of certain maximum train speeds, cable lengths for lighting, loss and damage calculations, and yard acreage. While these may be the type of changes that the Board might accept in errata in appropriate circumstances, we need not reach this issue here given the cumulative significance of the other changes proposed in the errata (i.e., those directly related to DuPont's miscalculation regarding car classification counts).

## STAND-ALONE COST ANALYSIS

Set forth below is the Board's analysis of the SAC evidence presented in this case. The evidence demonstrates that the challenged rates do not exceed the level permitted by the SAC test. The more significant issues are discussed in this decision, with more technical issues described in the appendices.

### A. Operating Expenses

#### 1. Operating Plan

How a SARR would operate influences both its configuration and annual operating expenses. AEP, slip op. at 16. Although the operating plan must be able to meet the transportation needs of the traffic to be served, it need not match the existing practices of the defendant railroad, as the objective of the SAC test is to determine what it would cost to provide the service with optimal efficiency. The assumptions used in the SAC analysis, including the operating plan, nonetheless must be realistic, i.e., consistent with the underlying realities of real-world transportation. Ariz. Elec. Power Coop. v. BNSF Ry. (AEPCO), NOR 42113, slip op. at 16 (STB served Nov. 22, 2011), appeal docketed sub nom. Ariz. Elec. Power Coop. v. STB, No. 12-1246 (D.C. Cir. June 8, 2012).

In this case, DuPont and NS submitted competing operating plans that detail how the SARR would handle the traffic group. Both use the Rail Traffic Controller (RTC) model to determine the feasibility of the DRR's operating plan and develop key operating characteristics of the SARR.

The Board will adopt the NS operating plan because DuPont's operating plan is not workable. The primary deficiency in DuPont's operating plan is the absence of a significant number of trains needed to carry the selected traffic group—including a large percentage of DuPont's own issue traffic. While this fundamental shortcoming is sufficient to undermine the overall workability of the DuPont operating plan, it is not the only issue. DuPont's plan does not provide complete service for the trains that it does carry, including a lack of facilities for serving and interchanging local traffic, and for the blocking of trains to ensure that carload shipments are delivered to their final destination. These two problems, the missing trains and the service issues, are more significant than any of the other issues associated with either party's operating plan.<sup>53</sup> Due to these specific deficiencies in DuPont's evidence, we accept NS's operating plan.

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<sup>53</sup> The NS operating plan is not without its own flaws. For example, DuPont alleges that the NS plan involves certain instances of routing the DRR's traffic in a circuitous manner, and at (continued . . . )



Accordingly, we need not determine how the other shortcomings in DuPont's evidence would affect the Board's analysis of the DuPont operating plan.

**a. Missing Trains**

DuPont's operating plan is based on a train selection process that sought to identify trains in NS's train event file that traveled over the DRR during the Base Year.<sup>54</sup> According to NS, in conducting this process, DuPont failed to capture 35,699 Base Year trains that "both transported DuPont's selected traffic and moved between multiple points (or traveled entirely) on the DRR."<sup>55</sup> NS contends these trains are needed to provide uninterrupted on-SARR service for 725,661 carloads of the DRR's selected traffic, which includes 76% of DuPont's issue traffic.<sup>56</sup> On rebuttal, DuPont argues that its original operating plan did, in fact, account for all of the trains necessary to handle the DRR's traffic,<sup>57</sup> but DuPont nonetheless adds approximately 7,500 trains to the DRR's train list.<sup>58</sup> DuPont states that these new trains are added mainly as a result

( . . . continued)

least one instance of a reroute external to the SARR. The NS operating plan, however, does provide the facilities and trains necessary to serve the issue traffic.

Two additional issues discussed specifically in DuPont's Brief regard NS's use of an average week as opposed to a peak week in its RTC model, and an overstatement of foreign train crossings that is based on evidence purportedly not suitable for litigation. DuPont Brief 47-48. We note that the peak week issue is much less problematic here than in previous cases due to the number of commodities moved by the DRR. For instance, in cases involving a large percentage of coal in the traffic group, there are certain times of the year when coal demand is higher, and traffic levels correspondingly increase. The diversity of commodities here dampens the effect of seasonal volume changes in individual commodity groups. We also note that the use of an average week by NS, as opposed to a peak week, actually results in lower costs (associated with an average volume as opposed to a peak week volume), and therefore lower allowable revenues. We agree that there are problems with NS's foreign train crossing evidence, in that priority is given to foreign trains over all DRR traffic. That is, every time a foreign train and a DRR train cross routes, the DRR train must wait until the foreign train is through. As a result, NS's operating plan unnecessarily slows down operations on the DRR, thus increasing expenses. But the magnitude of this problem does not rise to the level of those discussed above with respect to DuPont's operating plan.

<sup>54</sup> NS Reply III-C-9 to III-C-12.

<sup>55</sup> NS Reply III-C-13 to III-C-14.

<sup>56</sup> NS Reply III-C-14, III-C-20.

<sup>57</sup> DuPont Rebuttal III-C-7 to III-C-22.

<sup>58</sup> DuPont Rebuttal III-C-25 to III-C-26.

of a coding error in its opening evidence, but several are local trains servicing issue traffic that NS identified on reply.<sup>59</sup> NS contends that, on rebuttal, DuPont made no effort to account for all of the missing trains that were identified in the workpapers NS provided to both DuPont and the Board.<sup>60</sup>

Neither party does a particularly good job explaining the process that it followed in compiling the DRR's train list. Despite DuPont's implicit concession on rebuttal that its train list should be revised, however, DuPont nonetheless failed to do so on a consistent basis, ultimately rendering its list unreliable. The trains DuPont added on rebuttal are limited to the three specific examples of missing trains that NS discussed in its reply narrative, but DuPont neither includes any trains from NS's workpapers beyond those cited examples nor explains why it does not need to do so. DuPont adopts the examples of the missing trains, implicitly acknowledging the error in its original methodology, but does not add the much larger subset of trains that those examples represent. And as NS points out, a list of those specific trains was provided in its reply evidence.<sup>61</sup> As a result, even accepting the trains added on rebuttal, DuPont's operating plan does not provide complete service for approximately 33% of the issue traffic, as well as a large portion of the remainder of the traffic group.

The trains that DuPont failed to add are largely local trains, which are important to an effective rail network. Local trains move shipments between yards and those shipments' origins, destinations, or both. Without local trains, a railroad could not pick up or deliver shippers' goods. DuPont failed to submit an operating plan for the DRR that would provide for full service from each specific origin, through the network, and to each specific destination for the selected traffic group. Due to the fact that even after the addition of an estimated 7,500 missing trains in DuPont's rebuttal, DuPont's operating plan still does not provide complete on-SARR service for approximately 33% of the issue traffic, as well as a large portion of the remainder of the traffic group, the evidence that follows from that plan is also defective. This includes the RTC analysis as well as the operating statistics that flow from that analysis.

DuPont argues that any shortcomings in its train counts are due to flaws and deficiencies in the traffic data supplied by NS in discovery.<sup>62</sup> NS disputes this claim, arguing that the flaws are attributable to errors in the methodology DuPont used to develop its train selection and car classification.<sup>63</sup> We believe that the primary cause of DuPont's deficient train counts is errors in

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<sup>59</sup> DuPont Rebuttal III-C-25 to III-C-26. DuPont's rebuttal indicates 699 trains were added to serve the issue traffic, while the workpapers show that only 622 were added.

<sup>60</sup> NS Brief 21 (citing NS Reply WP "DRR\_TRAIN\_ANALYSIS.xlsx").

<sup>61</sup> NS Brief 21 (citing NS Reply WP "DRR\_TRAIN\_ANALYSIS.xlsx").

<sup>62</sup> DuPont Rebuttal III-C-14 to III-C-16.

<sup>63</sup> NS Brief 34-36.

its selection methodology. Unlike prior SAC cases that have focused on unit-train coal service, the DRR has a high percentage of carload traffic. DuPont's plan does not account sufficiently for the fundamentals of carload transportation and the need to move individual shipments to their specific locations. While DuPont argues that it was following Board precedent by not straying too far from the incumbent's train operations,<sup>64</sup> NS has demonstrated that DuPont's methodology overlooks the inclusion of many vital local trains.

Furthermore, DuPont was aware of the alleged deficiencies in NS's production but never sought to obtain what it now claims was the proper data through a motion to compel.<sup>65</sup> Nor did DuPont confirm that the DRR was capable of delivering its own issue traffic from the stated origin to the stated destination—a threshold task of any SAC presentation. On rebuttal, DuPont implicitly acknowledges this shortcoming by adding some, but not all, of the missing trains necessary to serve the issue traffic.

**b. Service Issues**

DuPont's operating plan also contains many service issues. NS asserts that the operating plan presented by DuPont on opening did not fully account for the time and physical facilities necessary to provide local train service in connection with the DRR's merchandise traffic,<sup>66</sup> and contained no car classification or blocking plan for the DRR's three million carloads of freight traffic.<sup>67</sup> On rebuttal, DuPont has agreed to adopt NS's proposed additional lead tracks to service local traffic,<sup>68</sup> and acknowledges that it "did not provide fully for required yard switching activity" necessary to serve the DRR's carload traffic.<sup>69</sup> But even with these changes to address its understatement of classification tracks, yard crews, and yard locomotives, DuPont's plan is still deficient because it failed to conduct a proper car classification count.

In an effort to correct these admitted understatements, DuPont for the first time on rebuttal developed its own car classification counts from the car event data provided by NS in discovery.<sup>70</sup> NS argues that the rebuttal miscalculates these counts and therefore undersizes the

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<sup>64</sup> DuPont Rebuttal III-C-4.

<sup>65</sup> DuPont Rebuttal III-C-14.

<sup>66</sup> NS Reply III-C-65 to III-C-66.

<sup>67</sup> NS Brief 16.

<sup>68</sup> DuPont Rebuttal III-B-3; DuPont Rebuttal WPs "DUPONT RR Route Miles Rebuttal Grading.xlsx" & "DRR Rebuttal Sticks."

<sup>69</sup> DuPont Rebuttal III-C-121.

<sup>70</sup> DuPont Rebuttal III-C-126.

necessary facilities.<sup>71</sup> We have reviewed NS's critique of the DuPont rebuttal car classification counts and agree that DuPont's calculations are substantially understated. Furthermore, while DuPont has alleged that NS's own car classification counts are unsupported and unrealistic,<sup>72</sup> we have reviewed the NS calculations and conclude that its car counts are reasonable. One indicator of the reasonableness of NS's count is that both the total number of cars and the ratio of empty to loaded cars appear to be fairly close to the numbers found on the Average Total Cost (ATC) traffic files.

Moreover, NS has demonstrated that certain activities and facilities that are essential to the functioning of a railroad the size of the DRR providing carload service—eight hump yards, most notably—are not present in DuPont's operating plan. DuPont argues that it is adopting NS's historical blocking plan, but fails to provide the same facilities NS uses to block and interchange traffic. Moreover, the DRR, later in the analysis period, will carry much more traffic than the current day NS. DuPont's version of the DRR would eventually handle almost 50% more traffic volume than that of NS in 2010.<sup>73</sup> But DuPont has not adequately explained how it would effectively move this increased volume of traffic with fewer facilities than the current NS system serving a reduced level of traffic. And, although DuPont claims that it provides adequate dwell times for servicing local traffic,<sup>74</sup> our analysis of DuPont's RTC model does not show trains stopping at the necessary interchanges. DuPont's service plan on opening was insufficient, and though some changes were made on rebuttal—such as an effort to develop a new car classification count and the addition of some classification tracks, yard crews, and yard locations—DuPont's plan still fails to provide adequate service to DRR's customers.

### **c. MultiRail**

MultiRail computer software is a modeling tool that generates car classification and blocking service plans for a selected traffic group, based upon the characteristics of the traffic, the railroad's network configuration, and customer service requirements.<sup>75</sup> Operating experts are

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<sup>71</sup> NS Brief 24.

<sup>72</sup> DuPont Rebuttal III-C-122.

<sup>73</sup> NS Brief 3-4.

<sup>74</sup> DuPont Rebuttal III-C-11. Dwell times represent the amount of time a train must remain at any given location to perform whatever function is required of it at that location (e.g., dropping off or picking up individual cars).

<sup>75</sup> See NS Reply WP "MultiRail Freight Edition." On January 25, 2013, NS filed a petition asking the Board to clarify that NS was not obligated to bear the cost of providing DuPont with certain licenses or training for the MultiRail software that NS used in developing its reply evidence. NS stated that it used MultiRail to develop carload blocking and train service plans for the DRR. According to NS, it had arranged for DuPont to have cost-free access to a

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capable of developing the costs for such blocking train service plans without the assistance of software, but the use of software like MultiRail can be used to facilitate this process. MultiRail is used to help develop a comprehensive blocking and train service plan, which then establishes the requirements for the network of yards and other facilities necessary to serve the selected traffic. But it does not replace the Board's traditional RTC simulation that must still be run to confirm the feasibility of the operating plan developed, in part, using the MultiRail software. The Board has allowed the use of MultiRail to create blocking plans in other types of proceedings,<sup>76</sup> and we conclude that its use here is permissible.

Much of DuPont's complaint about NS's operating plan relates to NS's use of MultiRail. DuPont argues that the use of MultiRail is unsupported, infeasible, unrealistic, unnecessary, and violates fundamental SAC principles.<sup>77</sup> Furthermore, DuPont contends that it is inappropriate for NS to propose an entirely new operating plan on reply.<sup>78</sup> DuPont is correct that, in most circumstances, the Board would require the defendant in a SAC case to make any necessary corrections to the complainant's opening evidence rather than submitting something entirely new on reply, to avoid having operating plans so different as to impede comparison. See, e.g., Gen. Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases, 5 S.T.B. 441, 446 (2001) (explaining that "a railroad's SAC evidence should be limited to addressing deficiencies in the complaining shipper's evidence"). Here, however, DuPont's operating plan on opening included no blocking and classification at intermediate yards.<sup>79</sup> Thus, on this issue, there was nothing for NS to correct on reply. To provide this essential part of the operating plan for a predominantly carload system, NS needed to supply its own analysis.

DuPont also claims that MultiRail is disconnected from reality and violates SAC principles because it utilizes train consists that are different from those provided by NS in the

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( . . . continued)

read-only version of MultiRail, but NS was unwilling to underwrite the cost of a full read-write version of MultiRail for DuPont's use. The Board denied the petition as moot when DuPont no longer sought a license for the MultiRail program. E.I. DuPont de Nemours & Co. v. Norfolk S. Ry. (MultiRail Decision), NOR 42125 et al. (STB served Mar. 27, 2013), slip op. at 2 (noting that the Board need not reach the question of whether NS was "required to bear the cost of providing Complainants with licensing and training for a full read-write version of MultiRail").

<sup>76</sup> See NS Reply III-C-158 n.245.

<sup>77</sup> DuPont Brief 33-47.

<sup>78</sup> DuPont Rebuttal III-C-65.

<sup>79</sup> DuPont Rebuttal III-C-121; NS Brief 23.

real world.<sup>80</sup> However, the mix of traffic will not remain the same as in NS's real world consists because the diverse commodity groups carried by the SARR are projected to have different volume growth rates as the number of shipments increases throughout the analysis period. In prior cases involving predominantly trainload traffic and fewer commodity types, developing trains for higher traffic volumes was a far simpler task. Here, with a sizeable volume of carload service, trains must be built, conducted to interim locations (sometimes in multiple instances) to be broken apart and reconfigured, and individual cars must be picked up at their origins and delivered to their final destination. Compared with unit-train coal service and the prior use of merchandise traffic delivered on a through basis (which does not require as extensive car classification facilities and services), the DRR's intended service is much more involved. Thus, the complexity associated with the volume of carload traffic on the DRR suggests that use of a blocking and train services model such as MultiRail can be appropriate. This is not to suggest that a program such as MultiRail must be used to develop a SAC presentation involving carload traffic, only that it can be utilized in SAC proceedings such as the one at hand.

DuPont also argues that the evidence developed by MultiRail is unsupported and unverifiable because NS has not submitted the MultiRail software as part of its evidence.<sup>81</sup> However, as explained in MultiRail Decision, slip op. at 3:

[T]he Board relies on each party to make its own case and critique the other party's case. Should the Board decide to rely on a certain type of evidence . . . the fact that the Board does not have a particular software program does not mean we would be unable to evaluate that evidence.

While the Board does not have the MultiRail software, we are able to analyze its inputs and outputs just as we would if the blocking and train service plans were developed by operating experts without the use of software. As NS notes,<sup>82</sup> DuPont's rebuttal cites many instances where DuPont believes NS erred in utilizing MultiRail, undercutting the argument that the evidence cannot be analyzed. Furthermore, NS, like litigants in prior cases, must run its operating plan through the RTC software to develop its operating statistics. The output from MultiRail is used as the input for the RTC, a program that the Board can and does review.

DuPont further argues that NS itself no longer uses MultiRail to develop its real-world operating plan, having shifted to an internal, next-generation system.<sup>83</sup> But NS presented

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<sup>80</sup> DuPont Rebuttal III-C-67 to III-C-71. A train consist is the make-up and order of the engines and cars within the train.

<sup>81</sup> DuPont Brief 40-44.

<sup>82</sup> NS Brief 44.

<sup>83</sup> DuPont Rebuttal III-C-84 to III-C-85.

evidence showing that MultiRail is a tool commonly used by railroads to plan their day-to-day operations.<sup>84</sup> Thus, MultiRail is one acceptable system to use for car blocking and classification.

DuPont makes several further arguments as to why the Board should not accept the use of MultiRail. For example, it contends that there are problems with proper blocking of cars and movements of those blocks, efficiency concerns, distinction of car types, effects on the residual NS, and missing cars and trains.<sup>85</sup> NS responds to these arguments and addresses the concerns raised by DuPont.<sup>86</sup> For instance, while DuPont claims that 1.7% of the carloads MultiRail models do not reach their final destination, NS has illustrated that 90% of these carloads cited by DuPont actually reach their destination, albeit through alternative routes.<sup>87</sup>

While DuPont's complaints regarding the shortcomings of NS's use of the MultiRail system are not trivial, these asserted shortcomings are far less significant than the more fundamental problems with DuPont's operating plan. After reviewing NS's MultiRail evidence, and DuPont's critiques thereof, we conclude that NS's operating plan is acceptable.

## 2. Leapfrog Traffic

In recent SAC cases, complainants have relied extensively on the use of cross-over traffic to simplify their SAC presentations. Cross-over traffic refers to those movements included in the traffic group that would be routed over the SARR for only a portion of their trip from origin to destination. In such circumstances, the SARR would not replicate all of the defendant railroad's service, but would instead interchange the traffic with the residual portion of that railroad's system. This modeling device, which was first accepted by the agency in 1994 in Bituminous Coal—Hiawatha, Utah, to Moapa, Nevada, 10 I.C.C. 2d 259, 265-68 (1994), is now a well-established practice in SAC cases.<sup>88</sup> DuPont, in this case, utilizes cross-over traffic in a previously unused manner. DuPont's evidence posits that some of its cross-over traffic would

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<sup>84</sup> NS Brief 41-42.

<sup>85</sup> DuPont Rebuttal III-C-85 to III-C-108.

<sup>86</sup> NS Brief 44-48.

<sup>87</sup> NS Brief 46-47. Thus, while NS implicitly concedes that at least some number (less than 0.2%) of the carloads modeled by MultiRail in fact do not reach their final destination, we conclude that this number is de minimis. Standing alone, this fact does not justify a prohibition on the use of MultiRail in this case.

<sup>88</sup> See, e.g., Otter Tail Power Co. v. BNSF Ry., NOR 42071, slip op. at 11-13 (STB served Jan. 27, 2006), aff'd sub nom. Otter Tail Power Co. v. STB, 484 F.3d 959 (8th Cir. 2007); Duke Energy Corp. v. CSX Transp., Inc., 7 S.T.B. 402, 422-24 (2004); Tex. Mun. Power Agency v. Burlington N. & Santa Fe Ry. (TMPA), 6 S.T.B. 573, 605 (2003).

exit and reenter the DRR. DuPont occasionally refers to this type of traffic as internal cross-over traffic, but both parties refer to it as “leapfrog” traffic.

Leapfrog traffic would allow a SARR to create infrastructure gaps in its system. That is, cross-over traffic was originally designed to allow a SARR to expand the scope of its traffic group without having to extend its geographic scope.<sup>89</sup> Here, DuPont is using cross-over traffic in a novel way to connect points within its system without building facilities to connect those points directly. This concept is not a prima facie violation of the Board’s regulations. In fact, as DuPont points out, existing, real-life railroad operations contain leapfrog traffic configurations.<sup>90</sup> NS opposes the use of leapfrog traffic, arguing that it permits a SARR to capture large amounts of traffic/revenues without constructing the expensive portions of the network required to carry that traffic.<sup>91</sup> The Board need not decide whether leapfrog traffic as utilized by DuPont in this case is appropriate. As previously discussed, we find that the missing train and service issues associated with DuPont’s operating plan are so significant that we will accept NS’s operating plan.

With regard to a remaining procedural matter, we note that while NS states that it has removed leapfrog traffic from the SARR, both DuPont and NS acknowledge that NS did not conduct an entirely separate additional SAC analysis to exclude that traffic.<sup>92</sup> DuPont argues that NS’s failure to do so renders this argument moot, while NS requests that the Board allow the parties to resubmit analyses without the leapfrog traffic included.<sup>93</sup> We reject NS’s request for an additional round of evidentiary submissions, as it is a railroad’s duty to present evidence to support its criticisms, and to allow further evidentiary submissions would unnecessarily extend the procedural schedule. Any leapfrog traffic included in NS’s operating plan will remain in the final analysis, as it represents the best evidence of record.

### **3. NS Operating Plan Issues**

Again, although the Board accepts NS’s operating plan, it is not without its flaws. DuPont claims that NS’s DRR often moves traffic in a circuitous, inefficient manner,<sup>94</sup> and further notes that in at least one instance NS has created an external reroute, a practice the Board

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<sup>89</sup> The use of cross-over traffic is a simplifying device that is not designed to allow for the avoidance of otherwise legitimate costs.

<sup>90</sup> DuPont Brief 49.

<sup>91</sup> NS Brief 100.

<sup>92</sup> DuPont Brief 51; NS Brief 101.

<sup>93</sup> DuPont Brief 51; NS Reply III-A-55 n.50.

<sup>94</sup> DuPont Brief 48; DuPont Rebuttal III-C-44 to III-C-47.



has deemed inappropriate in the past.<sup>95</sup> DuPont argues that this issue is, in part, a result of NS rerouting to avoid DuPont's leapfrog configuration.<sup>96</sup> NS responds that DuPont's choices regarding which NS lines the DRR replicated resulted in new interchange points, thus necessitating departures from NS's actual routings.<sup>97</sup> DuPont has identified an issue that, in another context, could be determinative in our evaluation of which operating plan to accept. However, in this instance, these routing concerns are not nearly as significant an issue as the traffic missing from DuPont's plan. NS's operating plan is the best evidence of record.

DuPont characterizes the external rerouting issue as a systemic problem with NS's operating plan. However, DuPont points to only one specific example of such rerouting. DuPont has identified no additional examples in NS's plan, and has not identified information in its workpapers that would support a claim that external rerouting is indeed a systemic problem. With just one example provided, we cannot conclude that the external rerouting issue identified by DuPont is systemic. With regard to circuitous rerouting, DuPont has likewise failed to demonstrate that the issue is of sufficient magnitude to warrant rejection or modification of NS's operating plan. Just as with the issue of external rerouting, DuPont characterizes the circuitous rerouting issue as a systemic problem with NS's operating plan. Given that DuPont points to only a handful of examples in support of its argument, we cannot conclude that the circuitous rerouting issue is systemic.

Furthermore, even assuming *arguendo* that modification of NS's operating plan to address the rerouting concerns raised by DuPont is appropriate in this case,<sup>98</sup> we would be unable to do so given the evidence of record. DuPont provided no evidence on rebuttal that would enable us to identify each specific instance of a reroute and replace it with a specific leapfrog segment.

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<sup>95</sup> DuPont Rebuttal III-C-44 to III-C-47 (citing TMPA, 6 S.T.B. at 595, and Duke Energy Corp. v. Norfolk S. Ry., 7 S.T.B. 89, 115-16 (2003)).

<sup>96</sup> DuPont Rebuttal III-C-44 to III-C-47.

<sup>97</sup> NS Brief 46.

<sup>98</sup> Again, the Board's authority to make its own adjustments to parties' operating plans is well-established. See BNSF 2006, 453 F.3d at 485 (affirming Board's decision to add certain capital improvements to shipper's operating plan); Balt. & Ohio R.R., 386 U.S. at 430 (agency "is not the prisoner of the parties' submissions" and must "weigh alternatives and make its choice according to its judgment how best to achieve and advance the goals of the National Transportation Policy") (Brennan, J., concurring).

#### 4. Configuration

Having accepted NS's operating plan as better supported than DuPont's, we also accept NS's configuration as the best evidence of record because the system configuration forms the basis for an operating plan.

Tables 1 & 2 summarize our conclusions on the route miles and constructed track miles of the DRR.

TABLE 1

| DRR Route Miles       |          |          |          |
|-----------------------|----------|----------|----------|
|                       | DuPont   | NS       | STB      |
| Main Lines            |          |          |          |
| Partially Owned Lines | 0        | 49.77    | 49.77    |
| Chicago, IL Extension | 2.82     | 2.82     | 2.82     |
| Additional Lead Track | 14.02    | 14.02    | 14.02    |
| Other Main Lines      | 6,479.79 | 6,479.79 | 6,479.79 |
| Branch Lines          | 797.15   | 797.15   | 797.15   |
| Total Route Miles     | 7,293.78 | 7,343.55 | 7,343.55 |

TABLE 2

| DRR Constructed Track Miles           |           |          |          |
|---------------------------------------|-----------|----------|----------|
|                                       | DuPont    | NS       | STB      |
| Main Line Track                       |           |          |          |
| Single Main Line (incl. branch lines) | 7,293.78  | 7,343.55 | 7,343.55 |
| Other Main (incl. sidings)            | 3,448.19  | 3,379.04 | 3,379.04 |
| Other                                 |           |          |          |
| Helper Pocket and Setout Track        | 76.58     | 203.84   | 203.84   |
| Customer Access Sidings               | 0         | 191.21   | 191.21   |
| Yard and Interchange Track            | 1,197.01  | 1,787.28 | 1,787.28 |
| Total Track Miles (excl. Yards)       | 12,015.56 | 12,905   | 12,905   |

## 5. Operating Expenses

As discussed above, we use NS's operating plan as the best evidence of record. All other evidentiary disputes are discussed in Appendix A.

### B. Road Property Investment

In the Road Property Investment (RPI) section of the SAC analysis, the Board determines the investment that would be required to build the SARR's physical facilities. With the exception of the partially owned joint facilities issue discussed below, the numerous issues involved in determining what it would cost to build the DRR are addressed in Appendix B.

#### 1. Partially Owned Joint Facilities

On reply, NS states that DuPont proposes to "use trackage rights to operate over facilities partially-owned by [NS], without accounting for [NS's] ownership interest."<sup>99</sup> NS states that DuPont claims to operate over the following partially owned facilities:

1. Conrail Shared Asset Areas (SAA) – Norfolk Southern Corporation (NSC) holds a 58% ownership interest
2. Indiana Harbor Belt Railroad Company (IHB) – NSC holds a 29.58% ownership interest
3. Belt Railway of Chicago (BRC) – NS holds a 25% ownership interest
4. Terminal Railroad Association of St. Louis (TRRA) – NS holds a 14.29% ownership interest<sup>100</sup>

NS argues that DuPont is not stepping into its shoes because DuPont is not accounting for NS's ownership interests in these partially owned facilities.<sup>101</sup> Rather, NS asserts, DuPont is claiming far more favorable terms for the DRR than NS currently enjoys.<sup>102</sup> NS argues that the trackage rights payments proposed by DuPont for operating rights over these partially owned facilities do not cover the costs of NS's ownership.<sup>103</sup> NS asserts that DuPont must account for the replacement costs of these facilities proportional to NS's ownership interests.<sup>104</sup> To account

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<sup>99</sup> NS Reply III-F-298.

<sup>100</sup> NS Reply III-F-298.

<sup>101</sup> NS Reply III-F-299.

<sup>102</sup> NS Reply III-F-299.

<sup>103</sup> NS Reply III-F-299 to III-F-300.

<sup>104</sup> NS Reply III-F-300, III-F-315.

for these costs, NS states that it “calculated the full land acquisition and construction costs for the partially owned facilities used by the DRR and then assigned the DRR a portion of those costs equivalent to the NS ownership percentage for that line.”<sup>105</sup>

On rebuttal, DuPont argues that NS’s position is wrong because the partially owned facilities are third party entities and are not co-defendants.<sup>106</sup> Furthermore, DuPont asserts, in the cases of SAA and IHB, the ownership interest is held by a different third party, NSC, and not NS.<sup>107</sup> DuPont argues that NS’s Annual Report Form R-1 (R-1) data, a report given to the Board by the railroads annually, does not list SAA or IHB as lines owned by NS.<sup>108</sup> However, DuPont acknowledges that the same R-1 data does list BRC and TRRA as lines owned by NS.<sup>109</sup> DuPont states that even if the Board were to agree with NS’s argument, the correct method for determining the DRR’s ownership costs would not be replacement costs but rather acquisition costs.<sup>110</sup> Furthermore, DuPont states that it must be able to collect the revenue shares that NS earns from these partially owned facilities.<sup>111</sup>

DuPont did not account for the construction costs proportional to NS’s ownership interests in the BRC and the TRRA, even though these partially owned facilities are owned by the railroad. The DRR must replicate and account for those costs.<sup>112</sup> DuPont’s argument that the costs should be based on the cost of acquisition as opposed to replacement costs is inconsistent with Board SAC precedent. In SAC cases, RPI costs are developed by replacement costs, and not the cost the incumbent railroad paid for the line when it was acquired. Where appropriate, as discussed above, costs for these partially owned facilities have been incorporated into the various DRR construction segments.

At the same time, the Board will not require DuPont to account for the construction costs of the SAA and the IHB because these partially owned facilities are subsidiaries of NSC and not

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<sup>105</sup> NS Reply III-F-316.

<sup>106</sup> DuPont Rebuttal III-F-148 to III-F-149.

<sup>107</sup> DuPont Rebuttal III-F-148.

<sup>108</sup> DuPont Rebuttal III-F-150 to III-F-151.

<sup>109</sup> DuPont Rebuttal III-F-153.

<sup>110</sup> DuPont Rebuttal III-F-148.

<sup>111</sup> DuPont Rebuttal III-F-148.

<sup>112</sup> DuPont is also entitled to include offsetting revenues from those partially owned facilities the DRR is required to construct. Here, however, the evidence on record demonstrates that the BRC and the TRRA did not realize any revenue during the relevant reporting period and, therefore, no offsetting revenue has been included.

of NS. In this instance, the Board notes that NSC elected to set up its ownership interests in SAA and IHB as separate legal entities from its railroad subsidiary, and NS has failed to present a valid argument for ignoring this structure. Here, we are not dealing with discovery issues where access to data and documents may still be relevant, but rather whether the data used in the SAC analysis accurately reflects the underlying corporate structure. In this case, as DuPont notes, the SAA and IHB are not listed in NS's R-1 data. As a result, the Board will accept DuPont's use of trackage rights and associated payments to account for its use of these lines. The Board realizes that partially owned facilities are a common corporate entity structure that allows multiple railroads to own and operate joint facilities. However, the burden is on the railroad to demonstrate the relationship of the joint facility entity and the costs and revenue realized by the railroad as a result of that relationship. With respect to the SAA and IHB, NS failed to meet this burden.

### **C. Traffic Group and Revenues**

A complainant creates a traffic group by using information on the types and amounts of traffic moving over the defendant's rail system, and selecting a subset of that traffic (including its own traffic to which the challenged rate applies) that the SARR would serve. AEPCO, slip op. at 16. The selected traffic group is representative of that which would move on the SARR in the future. AEPCO, slip op. at 16. The composition of the traffic group, as with all assumptions used in the SAC analysis, must be realistic, i.e., consistent with the underlying realities of real-world railroading. AEPCO, slip op. at 16.

The parties generally agree on the DRR's traffic group for purposes of determining the SARR traffic volumes and revenues. However, the parties disagree on the appropriate ATC methodology to determine cross-over traffic revenues, use of certain forecasts or methodologies to determine tonnage volumes for DRR traffic, whether the Board should allow the concept of shifting tonnage from capped plants, the proper methodology to be used to calculate fuel surcharge revenues, and whether income from certain companies within NS's corporate family should be included in the DRR's forecasted revenues. We examine the appropriate ATC methodology and income from corporate subsidiaries below, and the remaining traffic and revenue disputes are discussed in Appendix C.

#### **1. Average Total Cost Methodology**

A recent issue in SAC cases has been how to allocate the total revenues the railroad earns from cross-over traffic between the facilities replicated by the SARR and the residual network of the railroad needed to serve that traffic. That is, what percentage of the revenues from the cross-over traffic can the SARR claim as its own.

In Major Issues, slip op. at 31, the Board adopted the ATC approach to allocate revenues from cross-over traffic between the facilities replicated by the SARR and those of the incumbent

carrier (Original ATC). Under Original ATC, parties would first use the variable and fixed costs for the carrier developed under the Uniform Railroad Costing System (URCS), and the density and miles of each segment, to calculate the railroad's average total cost for each segment of a move. The revenues from each portion of the movement would then be allocated in proportion to the average total cost of the movement on- and off-SARR. See Major Issues in Rail Rate Cases, EP 657 (Sub-No. 1), slip op. at 19 (STB served Feb. 27, 2006).

Since then, to deal with low-rated cross-over traffic, in a few cases the Board has applied what it has called "modified ATC." See W. Fuels Ass'n v. BNSF Ry., NOR 42088 (STB served Sept. 10, 2007), remanded sub nom. BNSF Ry. v. STB, 604 F.3d 602, 613 (D.C. Cir. 2010), on remand W. Fuels Ass'n v. BNSF Ry. (W. Fuels Remand), NOR 42088 (STB served June 15, 2012) (with Vice Chairman Begeman dissenting), remanded sub nom. BNSF Ry. v. STB, 741 F.3d 163 (D.C. Cir. 2014). More recently, after considering comments from interested parties in a rulemaking proceeding, the Board adopted what it called "Alternative ATC" to deal in a more targeted way with low-rated cross-over traffic. See Adopted Rate Regulation Reforms, slip op. at 30-34.

In this proceeding, DuPont argues that the Board should continue to utilize modified ATC, while NS argues that the Board should use Original ATC.<sup>113</sup> NS further states that, even if the Board does not agree that Original ATC is the proper methodology, Alternative ATC is far superior to modified ATC.<sup>114</sup> NS argues that Original ATC is more consistent with SAC principles and rules, is more fair and logical than modified ATC, and was adopted through a proper notice and comment rulemaking in which all interested parties had an opportunity to participate.<sup>115</sup> NS states that, as a legal matter, because modified ATC sought to amend, in an individual adjudication, a legislative rule adopted in a notice and comment rulemaking, this amended rule violates the Administrative Procedure Act and is invalid and unenforceable.<sup>116</sup> DuPont argues that it would be arbitrary and capricious for the Board to apply the discredited Original ATC methodology, that modified ATC is superior to Original and Alternative ATC, and that both Original and Alternative ATC have flaws.

We will use Alternative ATC, which was developed through notice and comment rulemaking, because we believe it to be a superior methodology to both Original ATC and modified ATC. Furthermore, the arguments both parties make here about the superiority of their chosen method—Original ATC for NS and modified ATC for DuPont—were addressed by the

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<sup>113</sup> DuPont Brief 52-54; NS Brief 81-84.

<sup>114</sup> NS Brief 83-84 n.137.

<sup>115</sup> NS Brief 81-84.

<sup>116</sup> NS Brief 81-84.

Board in Adopted Rate Regulation Reforms and Western Fuels Remand, and we incorporate by reference our discussion of those arguments here.

Although Alternative ATC had not been adopted prior to the start of this case, the parties were on notice fairly early on that the Board's ATC methodology was potentially subject to modification. DuPont filed its opening evidence in April 2012, Western Fuels Remand was served in June 2012, and the Board proposed Alternative ATC in July 2012 in Rate Regulation Reforms, EP 715 (STB served July 25, 2012). While NS sought to hold this case in abeyance while the Board considered changes to its revenue allocation methodology, DuPont argued that the case should continue to move forward. The Board denied the motion for abeyance. E.I. DuPont de Nemours & Co. v. Norfolk S. Ry., NOR 42125 et al. (STB served Nov. 29, 2012) (with Vice Chairman Begeman dissenting).

## **2. Triple Crown Services/Thoroughbred Direct Intermodal Services**

The parties dispute how to account for revenues the DRR receives from Triple Crown Services (TCS) and Thoroughbred Direct Intermodal Services (TDIS) movements.<sup>117</sup> According to NS, because TCS and TDIS are essentially subsidiaries of NS, they function as customers of NS that purchase rail transportation services.<sup>118</sup> Thus, NS asserts that the revenue the DRR would obtain by "stepping into NS's shoes" would be the rail line haul revenue NS collects for the rail segment of those intermodal movements.<sup>119</sup> NS, however, argues that rather than treating TCS and TDIS as customers of NS, and accepting the revenues that TCS and TDIS pay to NS, DuPont has replaced the revenue NS collects from these customers with the total revenue collected by TCS and TDIS for the various services they provide to third parties (i.e., trucking services from origin to the intermodal facility; revenues for rail line haul services provided by NS, as well as that from other carriers; intermodal lifts; and trucking services from intermodal facilities to the final destination).<sup>120</sup> With the exception of drayage costs,<sup>121</sup> NS states that DuPont's SAC evidence has not taken into account the costs of facilities, equipment, personnel, materials, or other expenses necessary to provide the services required to earn the revenues accrued by TCS and TDIS.<sup>122</sup> Further, NS states that DuPont has failed to include large operating costs that TCS and TDIS incur each year to provide non-rail line haul services and

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<sup>117</sup> TCS and TDIS are providers of intermodal and logistics services.

<sup>118</sup> NS Reply III-A-61.

<sup>119</sup> NS Reply III-A-61.

<sup>120</sup> NS Reply III-A-61 to III-A-62.

<sup>121</sup> Drayage costs account for local movements of freight as part of the larger overall movement.

<sup>122</sup> NS Reply III-A-61 to III-A-62.

capital investment costs paid by TCS to allow it to conduct its business and support its operations.<sup>123</sup> According to NS, ignoring these costs, while incorporating TCS's and TDIS's total revenues, violates fundamental SAC principles, Board precedent, and basic economic principles.<sup>124</sup> Thus, NS states that DuPont's failure to account for costs associated with TCS and TDIS services compels the exclusion of revenues for those services.<sup>125</sup> Moreover, NS asserts that, because over-the-road truck hauling, rail movements on systems other than the DRR, and other non-rail services provided by TCS and TDIS use facilities that are not shared by the issue traffic here, attributing revenues from those services to the DRR would constitute an impermissible cross-subsidy of the issue traffic.<sup>126</sup> Citing PPL Montana, LLC v. Burlington Northern & Santa Fe Railway (PPL Montana), 6 S.T.B. 286, 293-95 (2002), NS asserts that, just as issue traffic may not be forced to cross-subsidize non-issue traffic by paying for facilities that it does not use, it is also impermissible for non-issue traffic to cross-subsidize issue traffic by paying for facilities that non-issue traffic does not use.<sup>127</sup>

On rebuttal, DuPont argues that the NS revenue waybill data did not include all rail-related revenues associated with the movement of intermodal traffic for TCS and TDIS subsidiaries.<sup>128</sup> Thus, DuPont asserts that it was left to develop accurate movement revenues for these shipments from other materials and data provided by NS in response to DuPont's discovery requests.<sup>129</sup> According to DuPont, based upon the information provided by NS during discovery, it calculated what it reasonably assumed to be net rail revenue for TCS and TDIS shipments, excluding revenue associated with activities it reasonably assumed were trucking services from origin to intermodal facilities, lifts, and trucking services from intermodal facilities to final destination.<sup>130</sup> DuPont states that it then replaced, rather than supplemented, the partial rail-related revenues included in the NS waybill data records with the restated rail revenues NS actually earned on its TCS and TDIS traffic.<sup>131</sup> According to DuPont, NS on reply rejects DuPont's revenue adjustment for TCS and TDIS movements and includes only the line haul and train starts revenue TCS and TDIS transfer directly to NS to cover the NS operating costs

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<sup>123</sup> NS Reply III-A-62.

<sup>124</sup> NS Reply III-A-63.

<sup>125</sup> NS Reply III-A-63.

<sup>126</sup> NS Reply III-A-64.

<sup>127</sup> NS Reply III-A-64 to III-A-65.

<sup>128</sup> DuPont Rebuttal III-A-56.

<sup>129</sup> DuPont Rebuttal III-A-56.

<sup>130</sup> DuPont Rebuttal III-A-56.

<sup>131</sup> DuPont Rebuttal III-A-56.



associated with moving the individual shipments.<sup>132</sup> DuPont asserts that this methodology completely disregards the lion's share of the TCS- and TDIS-generated revenues that NS reports in its records each year.<sup>133</sup> Further, DuPont argues that it did not simply replace the NS line haul revenues collected on movements with the total revenue collected by TCS and TDIS for the various services they provide to third parties.<sup>134</sup> Instead, DuPont states that it clearly explained the procedures it used to reduce the TCS and TDIS total revenues to net out all costs associated with 10 separately identified drayage activities indicated in NS's workpapers.<sup>135</sup>

DuPont therefore states that it reduced TCS/TDIS revenues by 29% before applying them to the NS movements. Further, DuPont argues that it did not simply replace the revenue NS collected from these customers with the total revenue collected by TCS and TDIS, but removed categories of revenue to account for the activities that NS claimed should be excluded.<sup>136</sup> DuPont argues that, given the lack of clarity from NS on what activities were included in the drayage activities, its revenue adjustment is appropriate.<sup>137</sup>

DuPont also asserts that NS is critical of DuPont's intermodal revenue adjustment, which is based on the intermodal revenues included in NS's quarterly reports. According to DuPont, NS specifically claims that, in developing its revenue forecast, DuPont relied on "a different and incorrect data source for 2010 NS rail revenues . . . gross intermodal revenue data reported in a NS Quarterly Financial Review which was prepared for different purposes and reports different data."<sup>138</sup> According to DuPont, NS apparently contends that DuPont should only be allowed access to revenue reported in the line haul revenue field of its traffic database, and not to the entire revenue stream associated with the traffic.<sup>139</sup> DuPont argues that NS is attempting to use an accounting device to restrict DuPont's access to NS revenues. According to DuPont, NS's financial reports to the SEC, the STB, and to NS shareholders clearly include revenues identified as NS Railway Operating Revenues, which are generated by its TCS and TDIS subsidiaries.<sup>140</sup> DuPont, however, states that when it is time for the DRR to "step into the shoes" of NS, for purposes of developing SAC evidence, NS argues that the DRR should not be allowed access to

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<sup>132</sup> DuPont Rebuttal III-A-56.

<sup>133</sup> DuPont Rebuttal III-A-56.

<sup>134</sup> DuPont Rebuttal III-A-57.

<sup>135</sup> DuPont Rebuttal III-A-57.

<sup>136</sup> DuPont Rebuttal III-A-57 to III-A-58.

<sup>137</sup> DuPont Rebuttal III-A-57 to III-A-58.

<sup>138</sup> DuPont Rebuttal III-A-57 to III-A-58 (citing NS Reply III-A-67 to III-A-68).

<sup>139</sup> DuPont Rebuttal III-A-58.

<sup>140</sup> DuPont Rebuttal III-A-59.

the same TCS/TDIS revenues.<sup>141</sup> Nonetheless, DuPont asserts that, in light of the additional information provided by NS on reply, DuPont has adjusted its TCS and TDIS net revenues. Specifically, DuPont states that, in addition to the \$107.9 million in drayage costs DuPont initially netted out of the TCS/TDIS total revenues in its opening, it further adjusts the TCS/TDIS revenues down by another \$83.6 million to account for other cost items identified by NS.<sup>142</sup> Thus, DuPont states that its opening evidence inadvertently overstated TCS/TDIS intermodal revenues by 20% due to NS's failure to provide adequate support for its data.<sup>143</sup> By contrast, DuPont states that NS's reply evidence intentionally understated TCS/TDIS intermodal revenue by 134% as a way to limit the DRR's access to the revenues identified as "NS Intermodal Railway Operating Revenues," and reported in certain NS accounting documents.<sup>144</sup>

We accept NS's argument that the SARR should only be allowed to claim rail line haul revenues, and therefore adopt its evidence. TCS and TDIS, while subsidiaries of NS, participate in non-rail activities, such as trucking. Revenues generated by non-rail activity cannot be included in a SARR's traffic revenue base. Further, as NS asserts, DuPont overstated SARR revenues in its opening by including revenues earned by TCS/TDIS without providing adequate evidence that the necessary infrastructure, operations, or corresponding expenses have been accounted for to provide such services. On rebuttal, DuPont still fails to include the necessary facilities, operations, capital investments, and expenses necessary to generate the TCS/TDIS revenue it seeks to include, and merely subtracts some TCS/TDIS operations costs from the intermodal revenues. DuPont has failed to show that the DRR is entitled to more than the rail line haul revenues. Therefore, we will accept NS's evidence on the rail line haul revenues from TCS and TDIS, as those are the only revenues to which the DRR is entitled.

#### **D. DCF Analysis**

A DCF analysis is used to distribute the total capital costs (in current year dollars) of the DRR over the SAC analysis period (10 years). Operating expenses are calculated for a base year and forecasted into other years by indexing for inflation and forecasted changes in tonnage. The DRR's total revenue requirements (capital and operating expenses) are then compared against the stream of revenues NS is expected to earn from the revised traffic group, discounted to the starting year (2008). Operating expenses are discussed in Appendix A.

To adjust the base-year operating expenses for inflation over the analysis period, the parties use projections of the Rail Cost Adjustment Factor (RCAF), which is an index of railroad

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<sup>141</sup> DuPont Rebuttal III-A-59 to III-A-60.

<sup>142</sup> DuPont Rebuttal III-A-60 to III-A-61.

<sup>143</sup> DuPont Rebuttal III-A-61.

<sup>144</sup> DuPont Rebuttal III-A-61.

costs that we publish quarterly. There are two versions of the RCAF that are relevant to SAC proceedings: one that does not take into account changes in the rail industry's productivity (the unadjusted RCAF, or RCAF-U) and a second that does (the adjusted RCAF, or RCAF-A). See 49 U.S.C. § 10708 (requiring publication by the Board of both versions). In Major Issues, slip op. at 42-44, the Board decided to phase in the productivity gains projected in RCAF-A incrementally over the analysis period. That approach is applied here.

The parties dispute aspects of the DCF analysis. Our resolution of these disputes are set forth in detail in Appendix D, which will demonstrate that DuPont has not shown the challenged rates to be unreasonable.

This decision will not significantly affect the quality of the human environment or the conservation of energy resources.

It is ordered:

1. NS's October 24, 2013 motion to dismiss the proceeding is denied as moot.
2. NS's July 19, 2013 motion to strike is granted.
3. The rates NS charges for the issue traffic have not been shown to be unreasonable.
4. Petitions for reconsideration of this decision must be filed by October 23, 2014.
5. This decision is effective on the date of service.

By the Board, Chairman Elliott and Vice Chairman Begeman. Chairman Elliott concurred with a separate expression and Vice Chairman Begeman concurred with a separate expression.

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**CHAIRMAN ELLIOTT, concurring:**

I write separately to address two issues. First, in today's decision, the Board applies the Alternative ATC methodology developed in a recent rulemaking proceeding. See Adopted Rate Regulation Reforms, slip op. at 30-34. This conclusion takes into account the arguments presented by the parties in this case, consistent with the Board's decision that revenue allocation methodologies would be litigated in the pending individual dockets, regardless of the outcome in Adopted Rate Regulation Reforms. See E.I. DuPont de Nemours & Co. v. Norfolk S. Ry., NOR 42125 et al., slip op. at 5 (STB served Nov. 29, 2012) (denying NS's motion for abeyance). However, to the extent that DuPont wishes to argue that it would have changed its SAC case had it known that Alternative ATC would be adopted, I believe it can do so in a motion to reconsider or reopen.

Second, I will address the issue of market dominance, to express, in more detail, my view as to why the limit price approach offers a sufficiently reliable indicator of whether a particular feasible alternative presents competition adequate to constrain the carrier's rates effectively.

Let me note at the outset that limit price, which is not binding on the agency even though we have applied it in certain cases in the absence of a better approach, gives the Board some objective guidance to gauge, in a flexible way, whether or not a particular feasible alternative effectively constrains the carrier's pricing. For example, if a feasible alternative prevents the railroad from charging rates above 190% of variable costs, it would appear that the marketplace is capable of disciplining the carrier's behavior. In contrast, if that same alternative serves only to prevent the railroad from charging rates above, for example, 500% of variable costs, then it may well be that the marketplace is not placing sufficient discipline on the carrier's behavior and that Congress would have intended for the Board to investigate the reasonableness of those rates. I believe that employing an objective methodology based on a measure such as RSAM ensures that our market dominance analysis balances the revenue needs of the carrier with the need to protect captive shippers from the abuse of market power. While prior decisions addressing the issue of market dominance have considered whether feasible alternatives were effectively constraining carrier pricing, see, e.g., McCarty Farms v. Burlington Northern, Inc. (McCarty Farms 1987), 3 I.C.C. 2d 822, 827-32 (1987), I believe that a more objective methodology such as limit price can help to better guide our inquiries in this respect.

"At the core of the 'effective competition' standard is the idea that there are competitive, market pressures on the railroads deterring them from charging monopoly prices for transporting goods." APS 1984, 742 F.2d at 650-51. The limit price approach can help to resolve the central market dominance inquiry—i.e., whether a feasible alternative is providing "effective competition" to the transportation at issue. After applying the limit price approach here, I

believe that this decision properly concludes that NS possesses market dominance over 70 of the 75 rates for which NS contests market dominance.<sup>1</sup>

I believe that the overall approach to evaluating potential transportation alternatives in this case—i.e., a threshold feasibility analysis, a comparison of the limit price to the defendant's variable costs of providing the service at issue, and a consideration of intangible features—encompasses the same factors described by the market dominance guidelines set forth in Market Dominance II, 365 I.C.C. at 132-33, and cited by the parties.<sup>2</sup> Again, while prior decisions addressing the issue of market dominance have considered whether feasible alternatives effectively constrained carrier pricing, see, e.g., McCarty Farms 1987, 3 I.C.C. 2d at 827-32, development of a more objective methodology can better guide our inquiries in this respect.<sup>3</sup>

Moreover, I believe this comparative approach offers a sufficiently reliable indicator of whether effective competition exists for several reasons. First, a carrier's RSAM figure is a measure of the average markup that the carrier would need to collect from all of its potentially captive traffic (i.e., all traffic priced at or above the 180% R/VC level) in order to earn adequate revenues as measured by the Board under 49 U.S.C. § 10704(a)(2) (i.e., earn a return on investment equal to the cost of capital). 2010 Tax Info. for Use in the Revenue Shortfall Allocation Method, EP 682 (Sub-No. 2), slip op. at 1 (STB served July 8, 2011). It “takes into account the key economic and equity principles embodied in the Interstate Commerce Act[, and] provides for differential pricing and a railroad's need to earn adequate revenues by directly linking its ‘revenue need shortfall’ to a benchmark markup for captive traffic.” Rate Guidelines—Non-Coal Proceedings, EP 347 (Sub-No. 2), slip op. at 4 (ICC served Nov. 16, 1992) (footnote omitted).

While the RSAM number standing alone simply represents the system-wide average markup required to achieve revenue adequacy, the Board has explained that “[h]ow a particular

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<sup>1</sup> NS does not contest market dominance for 25 of the challenged rates. See NS Reply Exhibit II-B-1. NS lacks market dominance over one of the challenged rates because the R/VC ratios associated with that rate fall below the jurisdictional threshold. See supra Majority Decision n.5.

<sup>2</sup> See DuPont Opening I-7; NS Reply II-B-11.

<sup>3</sup> DuPont argues that the rate increases it has experienced, without NS losing DuPont's traffic, conclusively demonstrate NS's market dominance. See, e.g., DuPont Opening I-22 to I-29. NS notes that the rate increases experienced by DuPont are unsurprising given that they followed the expiration of a long-term contract with a below-market escalator. NS Reply II-B-92 to II-B-94. In my view, it is difficult to treat contract rates and tariff rates as apples-to-apples comparisons because contract rates are often lower for a variety of reasons, including volume commitments.

carrier's revenue requirements can and should be allocated within its traffic base—i.e., the proper markup to be applied to individual traffic components—is affected by such factors as the mix of competitive and captive traffic handled by that carrier[ and] the degree of competition that it faces on its competitive traffic.” Rate Guidelines—Non-Coal Proceedings, 1 S.T.B. 1004, 1033-34 (1996). “[B]ecause the average derived by the RSAM is the average for captive shippers only[,], the ratios for some captive shippers must be above and some below that figure.” BNSF 2006, 453 F.3d at 481. Applying the carrier's RSAM to the limit price R/VC ratio generated by the rate charged by the “competing” carrier does not have to be a perfect measure of real competition. But as a carrier's RSAM number represents the average level at which the carrier would achieve system-wide revenue adequacy, the fact that a rate involving certain potentially captive traffic produces an R/VC ratio that falls below the carrier's RSAM number is sufficiently indicative that competitive transportation alternatives likely exist and are exerting downward pressure on the rate governing that traffic.<sup>4</sup> Likewise, the fact that a rate involving other potentially captive traffic produces an R/VC ratio that falls above the carrier's RSAM number is a useful indicator that competitive transportation alternatives—whether intermodal or intramodal—are less likely to exist and effectively constrain the rate charged by the carrier for that traffic.

Thus, comparing the limit price R/VC ratio for a given movement to the carrier's RSAM number can be an indication of either the presence or absence of effective competition for that movement. The limit price R/VC ratio expresses the limit price figure as a percentage of the movement's variable costs.<sup>5</sup> And because no party has presented a better way of measuring competitiveness, in my view a finding that effective competition likely exists if the highest price the carrier theoretically could charge to move that potentially captive traffic falls below the average point at which the carrier could achieve revenue adequacy—but that effective competition is unlikely where the highest price the carrier theoretically could charge to move the potentially captive traffic falls above the average point at which the carrier could achieve revenue adequacy—is reasonable. See Simplified Standards 2007, slip op. at 81.

I believe use of this metric to gauge the effectiveness of potential competitive alternatives is appropriate given that the “rates that would be charged by a competing mode [of transportation] are relevant to an evaluation of whether that mode provides effective intermodal competition” to the movement at issue. Ariz. Pub. Serv. Co. v. Atchison, Topeka & Santa Fe

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<sup>4</sup> See Simplified Standards 2007, slip op. at 81 (suggesting that a rate which falls below RSAM is “being constrained by . . . market forces”).

<sup>5</sup> In other words, the limit price R/VC ratio differs from the typical R/VC ratio in that the former utilizes the postulated limit price in the numerator while the latter utilizes the actual revenue generated by a particular tariff rate in the numerator.

Ry. (APS 1997), 2 S.T.B. 367, 375 n.15 (1997).<sup>6</sup> Furthermore, while the Board's qualitative market dominance guidelines "contemplate the use of" considerations such as the capacity, reliability, speed, and safety of potential transportation alternatives, "they do not exclude the application of quantitative analysis as well." CF Indus., Inc. v. STB, 255 F.3d 816, 822 (D.C. Cir. 2001) (citing Mkt. Dominance II, 365 I.C.C. at 119 n.5).

In its filings, NS argues that we cannot and should not use the limit price approach for purposes of evaluating qualitative market dominance in this case.<sup>7</sup> DuPont, on the other hand, argues that the approach is defensible but should be modified in certain respects.<sup>8</sup> I disagree with these criticisms.

**1. 49 U.S.C. § 10707**

NS first argues that 49 U.S.C. § 10707(d)(2) expressly bars us from utilizing the limit price approach when considering qualitative market dominance.<sup>9</sup> But that provision only precludes the Board from establishing market dominance and rate reasonableness presumptions based on the fact that the R/VC ratio "for the transportation to which the rate applies" is equal to or greater than 180%.<sup>10</sup> The limit price approach establishes no such presumption, but rather reflects a set order of considerations relevant to the issue of qualitative market dominance that are to be examined in turn—1) a threshold practical feasibility analysis; 2) calculation of the limit price ratio and its comparison to the defendant railroad's RSAM figure; and 3) a consideration of intangible features.

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<sup>6</sup> See also Salt River Project Agric. Improvement & Power Dist. v. United States, 762 F.2d 1053, 1060 (D.C. Cir. 1985); APS 1984, 742 F.2d at 650 ("The [ICC's] guidelines state that evidence of effective competition may include 'the transportation costs of the rail and motor carrier alternatives.'" (quoting Mkt. Dominance II, 365 I.C.C. at 133)).

<sup>7</sup> NS Reply II-B-40 to II-B-57; NS Brief 13.

<sup>8</sup> DuPont Rebuttal I-71 to I-78 & II-B-206 to II-B-216; DuPont Brief 9-13. DuPont did not address the limit price approach on opening because it submitted its opening on April 30, 2012—five months before issuance of the decision in M&G, which first introduced the limit price approach.

<sup>9</sup> NS Reply II-B-43 to II-B-45.

<sup>10</sup> Section 10707(d)(2) states that "[a] finding by the Board that a rate charged by a rail carrier results in a revenue-variable cost percentage for the transportation to which the rate applies that is equal to or greater than 180 percent does not establish a presumption that—(A) such rail carrier has or does not have market dominance over such transportation; or (B) the proposed rate exceeds or does not exceed a reasonable maximum."

Moreover, even if the limit price approach did utilize some form of presumption (which it does not), the plain language of the statute only prevents the Board from creating a presumption of market dominance based on the fact that the challenged rate produces a markup at or above 180% of variable cost. The statute is silent as to whether a presumption could be drawn from a higher markup above variable costs (e.g., 500% or 1000%) or based on a markup above RSAM. While NS seems to contend that § 10707(d)(2) prevents our use of R/VC ratios for any qualitative market dominance purpose, a permissible and more reasonable interpretation is that the plain language of the statute only prohibits us from establishing 180% as a presumption demarcation point.<sup>11</sup> Had Congress wished to prevent the establishment of all potential R/VC-based presumptions—as opposed to the very specific 180% figure—it could have done so. But it did not.<sup>12</sup>

Most importantly, the limit price approach does not utilize the rail rate generated by the challenged movement in its calculation of the limit price R/VC ratio. Section 10707(d)(2) is very specific, referring only to a 180% R/VC ratio presumption with respect to the “rate charged by a rail carrier.” The limit price R/VC ratio, in contrast, is based on the price of a proffered alternative to that particular rail movement, and reflects not the rate at issue but rather the highest price the rail carrier theoretically could charge the shipper without causing a significant amount of the issue traffic to be diverted to the proffered alternative. Therefore, assuming *arguendo* that the limit price approach includes some form of a presumption and that the statute prevents any presumptions based on the R/VC ratio of the challenged rate (no matter how high), limit price still would not run afoul of § 10707(d)(2) because it does not utilize the challenged rail rate in its calculation of the limit price R/VC ratio. NS contends that there is no practical distinction between a limit price R/VC ratio and the R/VC ratio associated with the challenged rail rate, due to the fact that the transportation alternatives on lanes contested by NS have rates that are “reasonably comparable” to the challenged NS rates.<sup>13</sup> But the price of the challenged rail movement and the price of the alternative—charged by an unaffiliated entity—undeniably are two separate figures and do not necessarily have a direct causal relationship with one another. Simply because the statute speaks to Board use of a 180% R/VC ratio presumption associated

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<sup>11</sup> Cf. *Mr. Sprout, Inc. v. United States*, 8 F.3d 118, 124 (2d Cir. 1993) (recognizing that the ICC, federal courts, and Congress have all employed actual R/VC ratios “as a valid and reliable measure of market power in the rail industry” and concluding that the ICC’s use of such ratios in its “threshold inquiry” on the issue of market power was not an abuse of discretion).

<sup>12</sup> Thus, NS’s reliance on “[t]he legislative context in which § 10707(d)(2) was enacted” in an effort to demonstrate “Congress’s unmistakable opposition to the use of R/VC presumptions in the market dominance analysis,” NS Reply II-B-44 to II-B-45, is misplaced. Neither the statute nor the legislative history cited by NS, NS Reply II-B-45 nn.61 & 62, suggests that Congress intended to bar the use of all potential R/VC-based presumptions.

<sup>13</sup> NS Reply II-B-44.



with the challenged rail rate does not mean that it similarly does so with respect to the alternative transportation rate. In sum, I find none of NS's statutory arguments persuasive and would not read further restrictions into the statute beyond those specifically set forth by Congress.

## 2. Administrative Procedure Act

NS next argues that use of the limit price approach requires its adoption via notice-and-comment rulemaking, due to the fact that the prevailing market dominance guidelines set forth in Market Dominance II were adopted in this manner.<sup>14</sup> Such a proposition would be true only if (1) the current market dominance rules were binding legislative rules rather than flexible evidentiary guidelines, and (2) the limit price approach represented a departure from those rules. The guidelines described in Market Dominance II, however, do not constitute a legislative rule, but rather represent an interpretive statement of agency policy regarding the procedures to be followed in connection with the submission of market dominance evidence and the types of evidence that the agency will consider in that inquiry.<sup>15</sup> Despite NS's contrary assertion, the limit price approach is not a legislative rule because the approach neither has binding effect nor limits our discretion. See, e.g., McLouth Steel Prods. v. Thomas, 838 F.2d 1317, 1320 (D.C. Cir. 1988); Am. Hosp. Ass'n v. Bowen, 834 F.2d 1037, 1045-48 (D.C. Cir. 1987). As the Board explained in TPI I, slip op. at 26, parties in future cases remain free to "advocate alternative benchmarks or methods for determining whether a particular feasible transportation alternative provides effective competition."

Even if the guidelines set forth in Market Dominance II were deemed to be legislative in nature, the limit price approach would not constitute a departure from those rules. The overall framework for evaluating potential transportation alternatives reflected in the limit price approach—including consideration of issues related to practical feasibility, economic feasibility, and the existence of any intangible features related either to the proffered alternative or the

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<sup>14</sup> NS Reply II-B-46 to II-B-49.

<sup>15</sup> See, e.g., Notice of Proposed Policy, 35 Fed. Reg. 83342, 83345 (Dec. 18, 1980) (Clapp, Comm'r, concurring) (stating in connection with the 1981 market dominance proceeding that "[o]ne must also question whether it is wise to propose issuance of a mere policy statement, which theoretically is subject to change without notice, when adoption of specific rules would avoid this uncertainty"); Mkt. Dominance II, 365 I.C.C. at 118 (explaining that the decision was "removing the existing market dominance rules" and "replac[ing] them with evidentiary guidelines"); W. Coal Traffic League v. United States, 719 F.2d 772, 780 (5th Cir. 1983) (en banc) (affirming Mkt. Dominance II, noting that the ICC's guidelines were not intended "to establish hard and fast rules for every situation," and asserting that courts "must remain cognizant of the Supreme Court's direction that the formulation of procedures is basically to be left within the discretion of the agencies to which Congress has confided the responsibility of substantive judgments" (internal quotation and alteration marks omitted)); TPI II, slip op. at 7.

challenged rail transportation—encompasses the same factors described by the prevailing guidelines. As a result, the limit price approach excludes no factor the Board has previously stated it will consider in its qualitative market dominance analysis.

Moreover, even if the refined approach incorporates additional elements to consider within the Board’s qualitative market dominance analysis, the Market Dominance II decision set forth “flexible guidelines” for the submission of qualitative market dominance evidence—specifically stating that: (1) such evidence “may include price-cost ratios;”<sup>16</sup> (2) the evidence is to focus on the central question of whether “[e]ffective competition” exists; and (3) “types of evidence [regarding] the feasibility or nonfeasibility of” proposed alternatives other than those specifically enumerated would be considered. 365 I.C.C. at 119, 122, 133. NS attempts to sidestep this conclusion by arguing that the limit price approach conflicts with Market Dominance II because that decision eliminated use of various presumptions, including one (the “cost test” presumption) that utilized R/VC ratios associated with the actual movement.<sup>17</sup> But unlike the “cost test” presumption eliminated in Market Dominance II, the limit price approach establishes a multi-factor framework for evaluating potential transportation alternatives while using neither presumptions nor the actual R/VC ratios of the issue movements. Moreover, while the Market Dominance II decision eliminated several other presumptions in addition to the “cost test” presumption, the decision does not state that the agency would never again use any rebuttable presumption in the market dominance analysis. Thus, even assuming *arguendo* that the limit price approach does involve the use of some form of presumption (which, again, it does not), the approach would not run afoul of the Market Dominance II decision because that decision did not prohibit the agency from subsequently adopting new and different market dominance presumptions.

### 3. Economic Foundation

Finally, NS argues that the limit price approach is an arbitrary and economically meaningless method for assessing the effectiveness of competition in a particular market.<sup>18</sup> NS

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<sup>16</sup> This statement makes it clear that rather than constituting a flat prohibition on the use of R/VC ratios in the qualitative market dominance context, the Market Dominance II decision specifically contemplated such use.

<sup>17</sup> Under the “cost test” presumption, a rebuttable presumption of market dominance arose when the rate at issue exceeded the variable cost of providing the service at issue by 60% or more (i.e., when the challenged movement generated an R/VC ratio greater than or equal to 160%). NS seems to suggest that the “cost test” presumption is similar to the limit price approach and thus, in using it, the agency reverted to an already-discarded market dominance methodology.

<sup>18</sup> NS Reply II-B-49 to II-B-57.

offers a broad array of related arguments that: (1) the limit price approach ignores relevant market information such as the relationship between the rail rate and the price of the alternative;<sup>19</sup> (2) RSAM is a flawed benchmark for measuring the effectiveness of competition in a particular market; (3) high R/VC ratios are a weak indicator of market power abuse; and (4) the limit price approach is inadequately justified and does nothing to simplify market dominance determinations. I disagree.

First, while NS correctly points out that the limit price approach does not involve a comparison of the price of the alternative to that of the challenged rail rate, I consider this a useful feature rather than a critical shortcoming. Again, the mere fact that a rail carrier has priced its services right at the threshold where, if slightly higher, it might begin to lose traffic to an alternative does not indicate that the alternative is constraining the rate effectively. TPI I, slip op. at 17. In other words, equivalence in price between the challenged rail transportation and a given alternative does not conclusively demonstrate that the latter is effectively constraining the former.

Second, contrary to NS's position, use of RSAM as a component of the limit price approach is appropriate. Each rail carrier's RSAM is pegged to its revenue needs, and employing an objective methodology relying in part on RSAM indicates whether a carrier is pricing below the level necessary to achieve revenue adequacy; if so, that indicates the presence of effective competition. TPI I, slip op. at 5, 25-27. Comparing a market-specific figure (the limit price R/VC ratio) to a carrier-specific figure (RSAM) provides an estimate of whether the alternative is low enough to generate competitive pressure,<sup>20</sup> as there is no reason to believe that a carrier with market power would charge its potentially captive traffic a rate below that needed to earn adequate revenues as measured under 49 U.S.C. § 10704(a)(2). Moreover, because RSAM is not a constant value, but one that will both vary from carrier to carrier and change over time to reflect gradual changes in the degree of differential pricing a particular carrier needs,<sup>21</sup> I

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<sup>19</sup> Among the "relevant market information" that NS asserts the limit price approach "fails to consider" is "the impact of product and geographic competition." NS Reply II-B-43. However, the Board has not considered product or geographic competition in the market dominance inquiry in quite some time. See Mkt. Dominance III; PPL Montana, 6 S.T.B. at 289 n.4.

<sup>20</sup> The Board has previously indicated that an R/VC ratio that falls below the carrier's RSAM number indicates that the rate at issue is "being constrained by . . . market forces." Simplified Standards 2007, slip op. at 81.

<sup>21</sup> NS also takes issue with the system-average nature of the RSAM benchmark. This characteristic of RSAM exists (at least in part) because of the underlying system-average nature of URCS (the Board's general purpose costing system), rendering system averages an inescapable part of the Board's market dominance inquiry regardless of whether or not the RSAM benchmark is used.

believe it provides a reasonable measure of effective competition specific to the case at hand.<sup>22</sup> And while I recognize that no benchmark can be a perfect indicator of market power, I believe that RSAM is sufficiently accurate for our purposes here. See BNSF 2006, 453 F.3d at 482; Pennsylvania v. ICC, 535 F.2d 91, 96 (D.C. Cir. 1976). While it criticizes the RSAM benchmark, NS has presented no workable alternative solution to the underlying problem we have identified—the compelling need to develop a more objective approach for resolving the issue of effective competition, given the rapidly escalating complexity of the market dominance inquiry in a number of our rate cases. Again, “the mere existence of some alternative does not in itself constrain the railroads from charging rates far in excess of the just and reasonable rates that Congress thought the existence of competitive pressures would ensure.” APS 1984, 742 F.2d at 651. At the core of the limit price analysis is an effort to determine whether there are any transportation alternatives sufficient to deter the railroad from charging monopoly prices for the transportation of goods.

Regarding NS’s third point, as the Board has explained in prior cases, high R/VC ratio levels can be used to support ultimate conclusions regarding the competitive effectiveness of transportation alternatives when such conclusions are supported by other evidence.<sup>23</sup> Calculation of the limit price R/VC ratio is but a single component of the refined approach, which is specifically structured to consider a variety of other factors relevant to the qualitative market dominance inquiry separate and apart from the limit price R/VC ratio. Furthermore, even if by statute market dominance could not be found based solely on R/VC ratios above 180%, in the limit price context that does not matter given that the limit price R/VC ratio is based on a

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<sup>22</sup> As the agency explained in TPI I, slip op. at 26, parties in future cases may advocate alternative ways for determining whether a particular feasible transportation alternative provides effective competition. In this case, NS did not do so.

<sup>23</sup> See 2008 DuPont I, slip op. at 8; McCarty Farms 1987, 3 I.C.C. 2d at 832. But cf. Potomac Elec. Power Co. v. CSX Transp., Inc., 2 S.T.B. 290, 294 (1997) (“Apart from the 180% jurisdictional threshold, which has been set by law, we do not use rate-cost relationships as a basis for qualitative market dominance determinations.”); Mkt. Dominance II, 365 I.C.C. at 122 (questioning whether actual R/VC ratios “reliably indicate the presence or absence of market dominance” because there “are any number of reasons why a high price/cost ratio may not be indicative of true market power on the part of the railroad”); Laurits R. Christensen Associates, Inc., A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals That Might Enhance Competition—Revised Final Report (Christensen Study) at ES-12 to ES-20 (Nov. 2009) (noting relative weakness of R/VC ratio as indicator of market power abuse in Board-commissioned independent study), available at <http://www.stb.dot.gov/stb/elibrary/CompetitionStudy.html>. Because conclusions regarding qualitative market dominance under the refined approach are premised on more than simple reliance on high ratios, our approach does not implicate the Board’s previously expressed concerns on this score.

different number than the actual R/VC ratio generated by the rail rate, i.e., the price of a proffered alternative. TPI I, slip op. at 24.<sup>24</sup>

NS also argues that our justification for using the limit price approach is misguided. But market dominance is a particularly complicated issue in cases like this one because, while the movement origins and/or destinations can be served via rail (for the most part) only by the defendant carrier, the products at issue (for the most part) can be transported via either rail or truck. But again, the fact that some competition exists, or that the price of the alternative happens to be similar to the challenged rate, does not in itself demonstrate that such competition is effectively constraining a carrier's pricing—i.e., that the competitive alternative is sufficient to deter the carrier from charging monopoly prices for the transportation at issue.<sup>25</sup> The limit price approach represents an objective method for drawing a line between those feasible transportation alternatives that effectively constrain carrier pricing and those that do not. TPI I, slip op. at 27. By providing a set order of considerations that enables prospective complainants to better assess the merits of their position before deciding to file a case, and that will facilitate the submission of

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<sup>24</sup> Citing the Christensen Study, NS argues that this distinction is immaterial for purposes of its criticism because the basic problem with using R/VC ratios as an indicator of market dominance is the inability of the URCS-based variable cost measure in the denominator to accurately measure shipment-level variable costs. Again, however, I believe that the prevailing market dominance guidelines specifically contemplate consideration of the costs associated with the challenged rail movement. See Mkt. Dominance II, 365 I.C.C. at 122, 133; APS 1997, 2 S.T.B. at 375 n.15 (asserting that the “rates that would be charged by a competing mode [of transportation] are relevant to an evaluation of whether that mode provides effective intermodal competition” to the movement at issue); Salt River Project, 762 F.2d at 1060 (identifying the ICC’s consideration of cost evidence in the course of its market dominance inquiry); APS 1984, 742 F.2d at 650 (explaining that the prevailing “guidelines state that evidence of effective competition may include ‘the transportation costs of the rail and motor carrier alternatives’”). Thus, even though the Christensen Study expressed skepticism about using R/VC ratios as an accurate measure of market power abuse, the costs of providing the transportation at issue are undeniably relevant to the qualitative market dominance inquiry in accordance with the prevailing guidelines. Furthermore, because URCS is the Board’s general purpose costing system adopted for all regulatory costing purposes (including those used in market dominance determinations), URCS-based variable costs are always part of the Board’s market dominance inquiry.

<sup>25</sup> TPI I, slip op. at 17; see also APS 1984, 742 F.2d at 651 (conjuring images of competition by horse and buggy or people carrying buckets, and explaining that “the mere existence of some alternative does not in itself constrain the railroads from charging rates far in excess of the just and reasonable rates that Congress thought the existence of competitive pressures would ensure”).

evidence from both parties in the event a case is filed, the limit price approach brings greater structure to the qualitative market dominance inquiry.

#### 4. Revisions Proposed by DuPont

DuPont agrees that use of limit price is within the Board's statutory authority and reasonable discretion, but asserts that the approach should be modified in two ways: (1) it should only be used to demonstrate the absence—but not the existence—of effective competition, and (2) the RSAM benchmark should be replaced by the revenue-to-variable cost greater than 180 ( $R/VC_{>180}$ ) ratio—the measure of the average markup over variable cost earned by a railroad on its potentially captive traffic, Simplified Standards 2013, slip op. at 1.<sup>26</sup> I do not agree.

As an initial matter, I do not believe there is any reason why the limit price approach should be used only for a limited purpose—i.e., to demonstrate the absence of competition—but not where the limit price falls below RSAM. Such an approach would offer only a partial solution to the underlying problem the Board has identified—the compelling need to develop a more objective approach for resolving the issue of effective competition, given the rapidly escalating complexity of the market dominance inquiry in a number of our rate cases—and as such would not represent a better general approach to the central issues in this case.<sup>27</sup>

Furthermore, I do not believe the  $R/VC_{>180}$  ratio represents an improvement over RSAM. As the Board has stated previously, in rate cases we look to see if there are any alternatives sufficiently competitive (whether singly or in combination) to bring market discipline to the carrier's pricing—i.e., whether there is effective competition adequate to constrain rates at or below a maximum reasonable level. McCarty Farms 1987, 3 I.C.C.2d at 825, 831. RSAM provides a better benchmark to help judge whether a particular alternative is effectively constraining rates within a reasonable range because it takes into account the revenue need of the defendant railroad, a central inquiry in the reasonableness of rail rates. In contrast,  $R/VC_{>180}$  merely shows the average markup the defendant railroad is charging potentially captive traffic. If the defendant railroad were grossly revenue adequate (or vice versa), the fact that a feasible competitive alternative was constraining the defendant railroad from charging more than the  $R/VC_{>180}$  figure would not provide much help in deciding whether that particular competitive

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<sup>26</sup> DuPont Rebuttal I-71 to I-78 & II-B-206 to II-B-216; DuPont Brief 9-13.

<sup>27</sup> Given that the limit price  $R/VC$  ratio—and its subsequent comparison to the RSAM figure—is based on the price of the lowest-cost alternative rather than the challenged rail rate, DuPont's argument that it would be unlawful to use the limit price approach to find the existence of competition based on a limit price  $R/VC$  ratio below RSAM because it “effectively would replace the quantitative market dominance jurisdictional threshold of 180%  $R/VC$  with the RSAM ratio,” DuPont Rebuttal II-B-214, is incorrect.

alternative was adequate to constrain the defendant railroad's rates at or below a reasonable level.

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VICE CHAIRMAN BEGEMAN, concurring:

This rate case was first brought to the Board in 2010, well before I arrived here. Considerable time, effort, and resources have been expended on it by the shipper, the carrier, and this agency. By statute, the Board is directed to complete cases like this within 9 months after the close of the administrative record. That directive is a firm and important requirement, giving the outer time limit for the Board to decide a case, while ideally the Board would act sooner, given the considerable time and expense of such cases.

The time has come for the Board to provide a resolution. For that reason, I am concurring with this decision, despite my reservations about the Board's approach to resolving the question of market dominance, which I have voiced repeatedly in a prior case. I am concurring here because the alternative would result in an unacceptable outcome for this member: the Board would be at an impasse, the case would be unresolved, and the significant time (years) and expense (millions) dedicated to this proceeding would be wasted.

As I explained in my dissents on the market dominance portion of the TPI rate proceeding, which is currently pending in the D.C. Circuit, I have serious questions about the Board's limit price approach first proposed in M&G. Importantly, there the Board also provided an opportunity for public comment on the methodology. With my support, the Board requested that "[i]f there is a better general approach to this issue, if there is a superior benchmark that can be used to guide this inquiry, or if the application of the refined approach to the facts of this case is somehow flawed, parties are strongly encouraged to use this comment period to bring such concerns to our attention." The comments received were overwhelmingly critical from shippers, carriers, and economists. M&G settled the case before the Board issued a final decision on the matter.

A then-majority of the Board applied the limit price approach in the next case, TPI, over my objections, without making adjustments to rectify any of the methodology's shortcomings identified by the comments filed in both M&G and TPI. I believe that was a mistake on the Board's part. It is now in the court's hands to determine whether the limit price, as established, will stand. It is my hope that the court will provide needed finality to the question soon.

Today's decision explains why the market dominance determination in cases like this is very difficult to resolve due to the large number of origins and destinations and different commodities. I believe the Board should initiate a formal rulemaking and invite public comment in order to develop—and then consistently apply—the most economically sound and objective approach to resolve the question of market dominance in a rate proceeding.

In the meantime, no other approach is currently available to me to resolve the question of market dominance in this case. I would not be fulfilling my responsibilities as a Board Member if I allowed my strong opinion about a particular Board methodology, and the manner in which the Board established it, to result in Board inaction and a case going unresolved given the time and resources the parties have expended.

While today's decision finds that much of the traffic at issue is market dominant, the Board cannot find that the contested rates are unreasonable because the complainant did not prove its case. The decision details at length the problems with the evidence, including not only missing trains and essential facilities, but incomplete service for over one-third of the shipments. While a stand-alone railroad (SARR) is by definition hypothetical, the complainant's SARR was unprecedented in "creative" design, which may have contributed ultimately to the unworkable operating plan.

Finally, the extent to which "leapfrog" traffic is presented in this case also raises concerns, and I would have preferred for the Board to rule more firmly on this issue. There is a line at which such traffic becomes implausible in a SARR. A presentation of leapfrog traffic in future cases would need to be considered very carefully by the Board to ensure its use does not render the SAC process meaningless.



### APPENDIX A—OPERATING EXPENSES

This appendix addresses the annual operating expenses that would be incurred by the DRR, the SARR in this proceeding. The manner in which a railroad operates and the amount of traffic it handles are major determinants of the expenses a railroad incurs in its day-to-day operations. As discussed earlier, we use the defendant's proposed operating plan for the DRR. NS utilized MultiRail to produce its train information that was then input into the RTC model. Both MultiRail and the RTC provide service units and outputs for calculating operating expenses and Road Property Investments. Because we have adopted NS's operating plan, the outputs developed by those two models are used to determine the level of resources the DRR would need for a given level of traffic except as specifically discussed and indicated below. Furthermore, items affecting operating expenses that are not an output from either of these two programs, such as unit costs for resources and staffing requirements, are also discussed below.

TABLE A-1

| DRR 2009 Operating Costs*    |           |           |           |
|------------------------------|-----------|-----------|-----------|
| (\$ millions)                |           |           |           |
|                              | DuPont    | NS        | STB       |
| Train & Engine Personnel     | \$338.8   | \$586.0   | \$544.1   |
| Locomotive Requirements      | 80.6      | 145.3     | 119.4     |
| Locomotive Maintenance       | 156.4     | 151.1     | 151.1     |
| Locomotive Operations        | 435.8     | 458.2     | 422.5     |
| Railcar Lease & Maintenance  | 356.2     | 420.1     | 416.8     |
| Materials & Supply—Operating | 4.5       | 11.1      | 11.0      |
| Ad Valorem Tax               | 56.9      | 84.2      | 84.2      |
| Operating Managers           | 63.6      | 128.5     | 128.5     |
| General & Administrative     | 77.4      | 172.1     | 171.6     |
| Loss & Damage                | 12.8      | 12.8      | 12.8      |
| Maintenance-Of-Way           | 156.9     | 377.1     | 350.1     |
| Trackage Rights              | 58.9      | 74.0      | 74.0      |
| Intermodal Lift and Ramp     | 108.0     | 110.4     | 110.4     |
| Insurance                    | 39.9      | 69.6      | 66.4      |
| Startup and Training         | 121.6     | 207.9     | 207.6     |
| Motor Vehicles               | 6.9       | 6.9       | 6.9       |
| TOTAL                        | \$2,075.1 | \$3,015.6 | \$2,877.6 |

\* Columns do not add up due to rounding.

## **A. Locomotives**

### **1. Locomotive Requirements**

With respect to the types of locomotives used by the DRR, which the parties have agreed to lease, the parties agree on the use of ES44-AC locomotives for road<sup>1</sup> and helper service,<sup>2</sup> and GP38 locomotives for local train service.<sup>3</sup> However, the parties disagree on the use of SW1500 locomotives for switching service.<sup>4</sup> NS proposes that the DRR instead use SD40-2 locomotives for yard power needs, arguing the functionality and availability of the SW1500 are limited.<sup>5</sup> DuPont does not oppose the use of SD40-2 locomotives if NS's proposed lease rates are modified to DuPont's proposed rate.<sup>6</sup> Under the Board-accepted NS operating plan with its increased trailing weights, the DRR would often need more tractive effort than a single SW1500 could provide. Because DuPont does not oppose the use of SD40-2 locomotives and because we have accepted NS's operating plan, yard quantity, and yard configurations, we will accept NS's proposed use of the SD40-2 locomotives for switching purposes.

#### **a. Peaking Factor and Spare Margin**

Locomotive requirements are calculated based on the estimated number of annual train starts. The DRR would need enough locomotives to handle the volume variations within its traffic group. The need for a "peaking factor," to assure that a SARR would have sufficient locomotives to handle its peak year's peak demands was established in Texas Municipal Power Agency v. Burlington Northern & Santa Fe Railway, 6 S.T.B. 573, 660-661 (2003), and clarified in Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern & Santa Fe Railway (Xcel 2005), NOR 42057, slip op. at 13 (STB served Jan. 19, 2005). In recent SAC cases, the peaking factor was calculated by forecasting the average number of train starts during the peak week of the peak year for traffic volume. This number is divided by the average number of weekly train starts during the forecasted peak year to yield the peaking factor. See Ariz. Elec. Power Coop. v. BNSF Ry. (AEPCO), NOR 42113, slip op. at 32 (STB served Nov. 22, 2011), appeal docketed sub nom. Ariz. Elec. Power Coop. v. STB, No. 12-1246 (D.C. Cir. June 8, 2012).

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<sup>1</sup> NS Reply III-C-209.

<sup>2</sup> NS Reply III-C-214.

<sup>3</sup> DuPont Rebuttal III-D-3.

<sup>4</sup> NS Reply III-C-218; DuPont Rebuttal III-D-3.

<sup>5</sup> NS Reply III-D-23.

<sup>6</sup> DuPont Rebuttal III-D-5. The Board adopts DuPont's lease rates in the Locomotive Lease Costs section of this appendix, removing the basis for DuPont's objection to the use of SD40-2 locomotives.

DuPont followed this precedent by dividing the average number of train starts in the peak week of the peak traffic year by the average number of train starts in the peak traffic year, calculating a peaking factor of 5.4%.<sup>7</sup> In its reply, NS argues that DuPont's peaking factor fails to reflect the increased locomotive requirement during the peak week of the base year.<sup>8</sup>

In its opening, DuPont follows the method the Board approved in previous cases. See Xcel 2005, slip op. at 13; AEPCO, slip op. at 32. However, DuPont's calculations are based on its Operating Plan and RTC model whereas the Board accepted NS's Operating Plan and RTC model. NS argues that DuPont's peaking factor is flawed because it fails to account for the peaks that exist in the base year.<sup>9</sup> However, NS does not adequately show that satisfying peak year demands, the process the Board has consistently called for in recent cases,<sup>10</sup> will not also satisfy base year demands. Because DuPont followed Board precedent, and NS did not provide adequate explanation for the Board to accept new procedures for this calculation, we will accept DuPont's peaking factor of 5.4% as the best evidence of record.

A spare margin is also necessary for locomotives because each individual locomotive is not available 100% of the time; for example, when a locomotive is out of service for maintenance, spare locomotives are needed. We apply the parties' agreed-upon spare margin for ES44 and GP38 locomotives.<sup>11</sup> We accept NS's SD40-2 locomotive spare margin because DuPont did not provide evidence for this locomotive.

**b. Number of Locomotives**

Due primarily to disagreements over the operating plan, the parties disagree on the required number of locomotives. Because DuPont's operating plan and RTC model failed to account for all car movements for all trains, and failed to build all the necessary yards, terminals, and intermodal facilities, DuPont's locomotives are understated by a significant degree. The Board will accept NS's number of locomotives; however, we have adjusted the total number based on our acceptance of DuPont's peaking factor, as discussed above.

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<sup>7</sup> DuPont Opening III-C-11 to III-C-12.

<sup>8</sup> NS Reply III-C-213 to III-C-214.

<sup>9</sup> NS Reply III-D-14 to III-D-16.

<sup>10</sup> Xcel 2005, slip op. at 13; AEPCO, slip op. at 32.

<sup>11</sup> DuPont Rebuttal III-C-138.

TABLE A-2

| Total DRR Locomotive Requirements <sup>12</sup> |                |          |                 |                   |
|-------------------------------------------------|----------------|----------|-----------------|-------------------|
| Locomotive Type                                 | DuPont Opening | NS Reply | DuPont Rebuttal | STB               |
| Road/Helper Service–ES44-AC                     | 481            | 977      | 639             | 921 <sup>13</sup> |
| Local Service–GP38                              | 101            | 291      | 180             | 283               |
| Switch Service–SW1500                           | 80             | –        | 94              | –                 |
| Switch Service–SD40-2                           | –              | 173      | –               | 173               |
| TOTAL                                           | 662            | 1,441    | 913             | 1,377             |

**c. Locomotive Lease Costs**

On opening, DuPont bases lease rates for the ES44-AC locomotives on publicly available information because NS did not provide current capital leases in discovery.<sup>14</sup> DuPont bases lease rates for the GP38 on publicly available information because NS provided leases in discovery that predated the start-up of the DRR.<sup>15</sup> DuPont objects to NS's GP38 lease rate calculation because NS indexes the lease rate of a fixed rate lease.<sup>16</sup> In its reply, NS objects to DuPont's use of SW1500 locomotives and does not provide evidence to counter DuPont's proposed SW1500 lease rate.

DuPont develops its ES44-AC lease rates from information contained in the Board's AEPCO decision.<sup>17</sup> NS argues that although it did not provide leases for the ES44-AC in discovery, its experience is applicable and the Board should adjust DuPont's lease costs to reflect the costs that NS actually paid.<sup>18</sup> NS's argument that the DRR must pay more than was required in AEPCO because NS itself pays more is not persuasive. NS had the opportunity to provide

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<sup>12</sup> The number of locomotives in this table has been reduced to reflect DuPont's peaking factor of 5.4%.

<sup>13</sup> In its brief, NS acknowledges that it had not properly reflected its warm-up, cool-down period for locomotives. To correct for this error, it reduced the number of ES44 locomotives it proposed for the DRR by 4%. NS Brief at 57-58. The Board accepts this correction from 977 to 938 ES44-AC locomotives and incorporates it into the DRR's Locomotive Requirements.

<sup>14</sup> DuPont Opening III-D-3; NS Reply III-D-21.

<sup>15</sup> DuPont Rebuttal III-D-7.

<sup>16</sup> DuPont Rebuttal III-D-8.

<sup>17</sup> DuPont Opening III-D-3 to III-D-4.

<sup>18</sup> NS Reply III-D-21.

evidence of accurate lease rates during discovery and did not do so. We accept DuPont's lease rates for the ES44-AC locomotives.

DuPont develops its GP38 lease rates on an annual lease rate published in a trade publication.<sup>19</sup> Because NS provided evidence that predates the 2009 start-up of the DRR and attempted to index the rates of a fixed cost lease, the Board rejects NS's evidence on GP38 lease rates. Further, without NS's upward adjustment, the proffered NS rates are virtually identical to DuPont's proposed rates. We accept DuPont's lease rates for the GP38 locomotives.

DuPont develops its SW1500 rates from a trade publication.<sup>20</sup> NS provides lease rates for SD40-2 locomotives, but not for SW1500 locomotives. Its proposed lease rate is based on 10 leases effective in years before and after the DRR would begin operations.<sup>21</sup> In its rebuttal, DuPont argues that the 2009 market, the year in which the DRR would begin operations, suggests a lower annual lease rate than NS proposes for the SD40-2, on par with DuPont's estimate for the SW1500 locomotives.<sup>22</sup> As noted above, although the Board accepts NS's evidence on the switching locomotive type (SD40-2)<sup>23</sup>, we will not accept NS's corresponding annual lease rates because they do not reflect the 2009 market. The Board has adjusted this cost item to reflect NS's number of locomotives and DuPont's SD40-2 annual lease rates.

## **2. Locomotive Maintenance**

NS generally accepts DuPont's approach to estimating the DRR's locomotive maintenance costs using an average maintenance expense per locomotive mile.<sup>24</sup> In its reply, NS argues that DuPont included only the cost per locomotive unit derived from NS's R-1 and failed to include fringe benefits to calculate the total locomotive maintenance personnel expense.<sup>25</sup> In its rebuttal, DuPont accepts the defendant's inclusion of fringe benefits in locomotive maintenance cost, but calculates a different total expense due to differences in the total distance locomotives travel, or locomotive unit miles, and other operating plan characteristics.<sup>26</sup> Because the Board has accepted NS's operating plan, the Board necessarily has accepted NS's proposed

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<sup>19</sup> DuPont Opening III-D-3 to III-D-4; DuPont Rebuttal III-D-9.

<sup>20</sup> DuPont Opening III-D-4.

<sup>21</sup> NS Reply III-D-22 to III-D-23; DuPont Rebuttal III-D-8.

<sup>22</sup> DuPont Rebuttal III-D-9.

<sup>23</sup> NS Reply III-D-18.

<sup>24</sup> NS Reply III-D-23 to III-D-24.

<sup>25</sup> NS Reply III-D-24.

<sup>26</sup> DuPont Rebuttal III-D-10 to III-D-11.

locomotive unit miles, and therefore will accept NS's Locomotive Maintenance Cost estimate of \$151.1 million.

### **3. Locomotive Servicing**

#### **a. Fuel Consumption**

The parties agree on fuel consumption rates for GP38 locomotives based on the NS historical average rate.<sup>27</sup> They disagree on fuel consumption rates for the ES44 locomotives and switch locomotives. NS argues that DuPont's proposed average fuel consumption, which is developed from NS's 2009 R-1 Annual Report, considerably understates the total amount of fuel that road and switch locomotives operating on the DRR would consume.<sup>28</sup> NS offers an alternative approach to calculating the average fuel per mile for ES44 locomotives based on the fact that they have higher than average horsepower, which they argue would lead to greater fuel consumption. In its rebuttal, DuPont argues that NS's adjustment is arbitrary and unsupported.<sup>29</sup> The Board finds that NS's ES44 fuel consumption estimates are based upon mathematical calculations that NS has not shown to be based on real-world evidence of fuel consumption. The Board accepts DuPont's use of NS's 2009 R-1 Annual Report fuel consumption rates of 2.28 and 2.67 gallons per locomotive unit miles, for road (ES44-AC) and switch (SD40-2) locomotives respectively as the best evidence of real-world fuel consumption rates.<sup>30</sup> In its reply, NS does not contest DuPont's proposed fuel consumption rates for GP38 locomotives; the Board accepts DuPont's proposed fuel consumption rates for the GP38 locomotives.

#### **b. Other Locomotive Servicing (Primarily Sand and Lubrication)**

DuPont bases its other locomotive servicing costs (primarily sand and lubrication) on NS's 2009 R-1 cost of \$0.2198 per locomotive unit mile for road locomotives and \$0.0602 for switch locomotives.<sup>31</sup> NS accepts DuPont's unit cost as a reasonable proxy for the operating expenses that the DRR would incur. The remaining difference between the parties' locomotive servicing expenses results primarily from the difference in the number of locomotive unit miles. Because the Board has accepted NS's operating plan, and RTC model, the Board will accept NS's locomotive servicing costs.

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<sup>27</sup> NS Reply III-D-27.

<sup>28</sup> NS Reply III-D-25.

<sup>29</sup> DuPont Rebuttal III-D-12 to III-D-13.

<sup>30</sup> DuPont Rebuttal III-D-12.

<sup>31</sup> DuPont Opening III-D-6; DuPont Rebuttal III-D-13 to III-D-14.

## **B. Railcars**

Although the parties generally agree on the methodological approach to estimating car costs, there is a substantial difference in the parties' estimates of the number of railcars the DRR would need and the costs of acquiring those cars. The parties agree on a 4.5% spare margin for railcars.<sup>32</sup>

### **1. Railcar Lease & Acquisition**

The DRR uses a mixture of railroad-provided cars and private cars. DuPont calculates car costs based on a combination of data derived from NS's 2009 R-1 and publicly available lease cost information.<sup>33</sup> NS generally accepts DuPont's methodological approach,<sup>34</sup> but objects to three aspects of DuPont's calculations: 1) NS does not accept DuPont's RTC transit times; 2) NS argues that DuPont failed to include dwell times; and 3) NS disagrees with DuPont's intermodal flat car and trailer/container costs.<sup>35</sup> In its rebuttal, DuPont maintains its reliance on its RTC model, but agrees that dwell times are required. DuPont argues that NS overstates dwell times, but fails to provide an adequate alternative to NS's evidence. The dwell times that DuPont added in rebuttal were based on expert judgment unsupported by any other evidence. NS's dwell times were benchmarked against yard dwell times regularly published by the AAR and those at 14 individual NS terminals. NS then conservatively reduced the published dwell times to reflect the DRR's operational efficiencies.<sup>36</sup> Because the Board has accepted NS's Operating Plan and RTC run, the Board also accepts NS's RTC transit times. Similarly, because the Board has accepted NS's Operating Plan, RTC run, and RTC transit times, and DuPont provides no viable alternative, we accept NS's estimates of dwell time as the best evidence of record.

Regarding the intermodal flat car and trailer/container costs, NS argues that DuPont proposes intermodal flat car costs considerably below what the DRR would require.<sup>37</sup> It explains that based on the DuPont proposal, the DRR would replicate 79% of the real-world NS intermodal unit miles and incur intermodal equipment costs of roughly 20% of the real-world NS.<sup>38</sup> To correct for this understatement and other errors, NS applies a private car charge, uses

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<sup>32</sup> NS Reply WP "DRR Car Costs\_Reply.xlsx."

<sup>33</sup> DuPont Opening III-D-7 to III-D- 8.

<sup>34</sup> DuPont Rebuttal III-D-14.

<sup>35</sup> NS Reply III-D-28.

<sup>36</sup> DuPont Rebuttal III-D-15 to III-D-16; NS Reply III-D-29 to III-D-30.

<sup>37</sup> NS Reply III-D-30.

<sup>38</sup> NS Reply III-D-30.

NS's RTC model to determine the mileage and, therefore, the mileage-related car ownership costs for which the DRR would be responsible, and increases the costs for the railroad-provided flat cars to account for the extraordinarily high usage on the DRR.<sup>39</sup> In its rebuttal, DuPont accepts NS's increased use of private intermodal flat cars, but argues, for the first time, that Triple Crown shipments should be treated separately from intermodal traffic because all Triple Crown shipments move in railroad-provided equipment.<sup>40</sup> DuPont improperly introduces this new argument on rebuttal.<sup>41</sup> The Board has already accepted NS's Operating Plan, in part because DuPont's transit times are understated. The Board also finds that DuPont understates dwell times and the cost of intermodal equipment. For the above reasons, the Board accepts NS's intermodal flat car and trailer/container costs as the best evidence of record. We also accept NS's railcar lease and acquisition costs.

## **2. Railcar Acquisition & Maintenance**

The parties disagree on the cost of railcar maintenance. In its opening, DuPont argues that the DRR would use full service car leases, which include maintenance costs, for the railcars it provides.<sup>42</sup> In its reply, NS claims that DuPont failed to account for any maintenance functions or provide facilities for car repair activities.<sup>43</sup> NS provides for the facilities and equipment it considers necessary to handle the DRR's inspection and repair activities.<sup>44</sup> There are issues with each party's evidence. DuPont's evidence is understated, in part, due to its decision not to include costs for running repairs to foreign and private cars, which it claims are more than offset by the revenues received for those cars.<sup>45</sup> NS's evidence is flawed due to its failure to include the revenue the DRR would receive for running repairs to the shipments of foreign and private equipment owned by other railroads and customers. As DuPont argues in its rebuttal, NS included the costs (and investments) but not the revenues the DRR would receive.<sup>46</sup>

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<sup>39</sup> NS Reply III-D-33.

<sup>40</sup> DuPont Rebuttal III-D-17.

<sup>41</sup> "Rebuttal may not be used as an opportunity to introduce new evidence that could and should have been submitted on opening to support the opening submissions." Gen. Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases, 5 S.T.B. 441, 446 (2001).

<sup>42</sup> DuPont Opening III-D-8.

<sup>43</sup> NS Reply III-D-33 to III-D-34.

<sup>44</sup> NS Reply III-D-33 to III-D-34.

<sup>45</sup> DuPont Rebuttal III-D-18.

<sup>46</sup> DuPont Rebuttal III-D-18.



The Board would have preferred to include the costs of running repairs to foreign and private cars and the corresponding revenue. However, neither party has provided workpapers adequate to permit the Board to make the necessary adjustments. Because NS has promoted a plan for foreign car maintenance that ignores the associated revenues collected from the foreign carrier, the Board will accept DuPont's Railcar Maintenance costs.

### **3. Private Car Allowances**

Private car allowances occur when a shipper or private car owner provides a railcar to the railroad. The railroad may either pay the shipper by mile, by day, or by some combination thereof or it may adjust freight rates to reflect the fact that the railroad is not incurring car costs. NS generally accepts DuPont's approach to private car allowances for all car types except intermodal cars.<sup>47</sup> NS claims, however, that DuPont improperly substituted a lease rate for intermodal flat cars that did not account for the extraordinarily high number of miles that DuPont assumed the DRR's cars would incur.<sup>48</sup> We agree. As discussed above, the Board accepts NS's intermodal flat car rates as the best evidence of record. Likewise, the Board accepts NS's private car allowances including its adjustment to DuPont's evidence to reflect the higher rate for intermodal cars.

## **C. Operating Personnel**

### **1. Train and Engine (T&E) Personnel**

There is a substantial difference in the parties' estimates of the number of T&E personnel that the DRR would require based largely on the different operating plans.

As discussed in the body of this decision, the Board uses NS's proposed operating plan for the DRR as well as NS's RTC model and the resulting evidence. Consequently, we accept NS's evidence on the number of trains necessary to handle the DRR traffic group. Likewise, the Board adopts NS's re-crew evidence, helper service estimates, and yard crew requirements, all of which are tied to the Operating Plan, and RTC model.

Regarding directional imbalances, in its reply NS argues that DuPont failed to consider the imbalances in road crews created by train flows in different directions between points on the DRR.<sup>49</sup> In its rebuttal, DuPont claims that NS's argument is flawed because of its reliance on MultiRail for the train information and its failure to consider location and broader crew

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<sup>47</sup> NS Reply III-D-34.

<sup>48</sup> NS Reply III-D-34.

<sup>49</sup> NS Reply III-D-35.

assignments when evaluating imbalances. The Board has already accepted NS's use of MultiRail in this case, and thus NS's reliance on MultiRail does not invalidate its imbalance arguments. In its re-crew rebuttal arguments, DuPont failed to address the difference in timing of train movements or account for the taxi cost of moving crews between points. More importantly, DuPont's analysis relied on an inaccurate number of trains, train speeds, services, and dwell times. As discussed in the body of this decision, DuPont's Operating Plan and RTC Model result in improper train flows so it would be in error to rely on those train flows when determining directional imbalances. Because of the reasons discussed above, the Board will accept NS's evidence on directional imbalances. The Board will accept NS's T&E personnel estimates in their entirety.

## **2. T&E Personnel Compensation**

### **a. Wages**

The parties disagree on the average compensation for T&E personnel. DuPont bases its estimate on NS's 2009 Wage Forms A and B.<sup>50</sup> NS accepts the use of DuPont's average historical compensation for non-train operating personnel, but rejects the use of the average for DRR crews because they are not comparable to NS's<sup>51</sup> primarily due to the difference between the number of shifts worked by NS crews and DRR crews.<sup>52</sup> DuPont assumes that all DRR crews would work 270 days per year, whereas NS's analysis shows that only 0.1% of NS crewpersons achieved 270 shifts in 2009.<sup>53</sup> DuPont argues that tenure, not the number of shifts worked, is the primary factor driving the average wage of T&E personnel.<sup>54</sup>

We find unconvincing DuPont's argument that tenure, not number of shifts worked, drives the average wage and would result in appreciably lower wages for DRR T&E personnel. The Board has recognized that crew members working more hours would command more compensation. See e.g., W. Fuels Ass'n v. BNSF Ry. (WFA/Basin), NOR 42088, slip op. at 47 (STB served Sept. 10, 2007), remanded sub nom. BNSF Ry. v. STB, 604 F.3d 602, 613 (D.C. Cir. 2010), on remand W. Fuels Ass'n v. BNSF Ry., NOR 42088 (STB served June 15, 2012) (with Vice Chairman Begeman dissenting), remanded sub nom. BNSF Ry. v. STB, 741 F.3d 163 (D.C. Cir. 2014). While tenure also has an effect on wages, the DRR would hire its employees from the available pool of candidates in the area who would likely command comparable wages

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<sup>50</sup> DuPont Rebuttal III-D-26.

<sup>51</sup> NS Reply III-D-41.

<sup>52</sup> NS Reply III-D-41.

<sup>53</sup> NS Reply III-D-41.

<sup>54</sup> DuPont Rebuttal III-D-26.

to NS's employees, which reflect a mix of tenures. We find that the driving factor behind T&E personnel wages in this case is the number of annual shifts DRR employees work. The Board adopts NS's average wage rates for T&E personnel.

**b. Fringe Benefits**

The parties disagree on both the data source and method of calculation for the fringe benefit ratio. DuPont uses a fringe benefit ratio of 37.5%, based on 2009 data published by the AAR for all Class I railroads in 2009.<sup>55</sup> NS uses a fringe benefit ratio of 49.2% based on a three year average of fringe benefits ratios for NS and CSXT.<sup>56</sup> NS argues that the 37.5% fringe benefit ratio is immediately suspect because it is significantly lower than reported fringe benefits for most Class I railroads.<sup>57</sup> NS also argues that the number upon which DuPont relies is a nationwide average, as opposed to a geography-specific fringe benefit ratio which would be consistent with Board precedent.<sup>58</sup> DuPont rejects NS's fringe benefits data for two primary reasons. First, it objects to the use of a multiple year average based on operating expense data, particularly because the NS's average includes years subsequent to the starting date of the DRR which DuPont argues leads to double counting of expenses.<sup>59</sup> DuPont explains that this is because the DRR's 2009 operating expenses are indexed to subsequent years based on a hybrid of indexes derived from AAR expense data. Second, DuPont objects to the inclusion of CSXT's fringe benefit ratio as an attempt to drive up the DRR's ratio.<sup>60</sup>

The Board will accept NS's fringe benefit ratio for the following reasons. First, NS averages three years of data, then applies an index to that average to recuperate the effects of inflation, but each component of the average is a ratio and not an absolute number. The use of a real-world three year average to calculate the starting year fringe benefits and the subsequent indexing of that average to account for inflation does not lead to the double counting of expenses. The Board favors use of evidence with a longer rather than a shorter period of historic data and believes that method results in better evidence here. See AEPCO, slip op. at 139. Second, the likely pool of employees from which the DRR would hire would be from railroads in the area, including particularly those employees from NS and CSXT. Thus, it is logical to assume that the DRR's fringe benefits ratio would correspond to the average of those two railroads.

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<sup>55</sup> DuPont Rebuttal III-D-27.

<sup>56</sup> NS Reply III-D-42 to III-D-43.

<sup>57</sup> NS Reply III-D-42.

<sup>58</sup> NS Reply III-D-44.

<sup>59</sup> DuPont Rebuttal III-D-28.

<sup>60</sup> DuPont Rebuttal III-D-28.

To calculate fringe benefit costs, the Board will apply that ratio to the average wage calculated by DuPont, not the wages earned by the high utilization crews calculated by NS. NS has provided no evidence why, and we see no reason why, fringe benefits would be based on the above average compensation rate for the employees that work a high number of shifts it proposes, as fringe benefits for those employees would not be higher than for the average employee. Consequently, we will apply NS's 49.2% fringe benefit ratio to DuPont's proposed average wage to calculate the total cost of fringe benefits for DRR T&E personnel.

**c. Hotel & Taxi Expense**

The Board will accept DuPont's estimate of hotel and taxi expense. Although NS accepted DuPont's methodology for hotel and taxi expenses, NS's total hotel and taxi expense is greater than the total expense for the entirety of the real-world NS in 2009, making it unreasonably high.<sup>61</sup> However, NS does include a meals additive, a standard expense that DuPont omitted in its opening and rebuttal, on top of its hotel and taxi expense.<sup>62</sup> The Board finds that this meals additive is reasonable and will apply it to the hotel portion of DuPont's proposed hotel & taxi expense.

**3. Non-Train Operating Personnel**

The parties' disagreement on the non-train operating personnel mirrors the dispute about the operating needs of the DRR generally. At the core of the disagreement is whether the DRR has a traffic group that moves primarily in trainload quantities or whether it is primarily a carload railroad. As discussed in the body of this decision, a railroad such as the DRR, which has a significant percentage of carload traffic, must have operating expenses that account for the movement of its carloads from origin to destination.

The DRR would handle millions of carloads of general freight traffic, millions of containers and trailers of intermodal traffic, multilevel traffic, as well as unit trains of coal, grain, and other bulk commodities in any given year.<sup>63</sup> More than two-thirds of the DRR's general freight, intermodal, and multilevel trains would both originate and terminate at yards and terminals local to the DRR. The nature and geographic scope of the DRR's operations requires the DRR to maintain a field operations team to support its train service plan.

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<sup>61</sup> DuPont Rebuttal III-D-29.

<sup>62</sup> NS Reply III-D-46 to III-D-47.

<sup>63</sup> NS Reply III-C-2.

DuPont argues in many operating expense areas that the DRR is similar to the C&NW and has staffing levels comparable to that railroad in 1994.<sup>64</sup> We do not accept that general assertion given that the DRR's carload volumes and revenues are much greater than those handled by C&NW, the traffic mix is substantially different, and the DRR would operate in the more challenging terrain of the eastern United States.

Further, DuPont's operating plan and RTC model, which the Board has rejected, resulted in Non-Train Operating Personnel requirements that are inconsistent with the realities of a railroad the size and complexity of the DRR. Likewise, DuPont has failed to show that NS's calculation of Non-Train Operating Personnel on reply was unsupported, infeasible, or unrealistic. Accordingly, NS's evidence on Non-Train Operating Personnel will be accepted as the best evidence of record.

TABLE A-3

| DRR Non-Train Operating Personnel |        |       |       |
|-----------------------------------|--------|-------|-------|
| Department                        | DuPont | NS    | STB   |
| Operations Management & Support   | 29     | 155   | 155   |
| Transportation                    | 281    | 590   | 590   |
| Mechanical                        | 277    | 549   | 549   |
| Engineering                       | 4      | 2     | 2     |
| TOTAL                             | 591    | 1,296 | 1,296 |

#### 4. Non-Train Operating Personnel Compensation

##### a. Executive Compensation

The most significant difference between DuPont and NS's compensation levels for non-train operating personnel comes from the difference in the number of employees proposed by the parties for various classes of personnel, which we resolved in the prior section. We now turn to the single disputed executive compensation level.

While NS accepts DuPont's proposed compensation levels for most employee groups, NS rejects DuPont's compensation levels for Vice Presidents.<sup>65</sup> The significant difference between the parties' compensation levels for Vice Presidents is largely related to NS's inclusion and DuPont's exclusion of stock options, option awards, and other forms of long-term incentives. As

<sup>64</sup> DuPont Rebuttal III-D-30.

<sup>65</sup> DuPont Rebuttal III-D-44.

NS correctly states, in 2004 the Federal Accounting Standards Board (FASB) revised their financial accounting standards and required “entities to recognize the cost of employee services received in exchange for awards of equity instruments based on the grant-date fair value of those awards.”<sup>66</sup> Although in previous SAC cases this type of compensation was not typically included, following the changes in the FASB standards, stock options and other deferred compensation would be required to be expensed during the DRR’s operations.<sup>67</sup> Board precedent makes clear that compensation that is expensed by the railroad is properly included as a cost. AEPCO, slip op. at 53. Therefore, the DRR must include stock options and other expensed deferred compensation as part of the Vice Presidents’ compensation packages. Thus, the Board accepts NS’s compensation levels for Vice Presidents.

**b. Fringe Benefits**

Each party proposes the same fringe benefit ratio for non-train operating personnel as for other operating personnel, discussed above. For the reasons stated above, we will adopt NS’s 49.2% fringe benefit ratio.

**5. Materials, Supplies, and Equipment**

The parties agree on the unit costs for the various material, supplies, and equipment necessary for DRR Operating Personnel.<sup>68</sup> NS increases DuPont’s estimates for the quantities of materials, supplies, and equipment needed based on NS’s increased proposed staffing levels.<sup>69</sup> Because the Board adopted NS’s operating plan and RTC model, which reflect this increased number of Operating Personnel, we accept NS’s quantities to support the increased personnel.

**D. General & Administrative**

**1. Staffing Requirements**

The parties fundamentally differ on their G&A staffing requirements. This difference is largely attributed to DuPont’s assumption that the DRR is fundamentally a trainload traffic railroad and NS’s assumption that the DRR is primarily a carload traffic railroad. DuPont patterns its staffing requirements after the coal unit train SARRS in WFA/BASIN and AEP Texas North Co. v. BNSF Railway (AEP), NOR 41191 (Sub-No. 1) (STB served Sept. 10,

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<sup>66</sup> NS Reply III-D-165 to III-D-166 (citing NS Reply WP “Statement of Financial Accounting Standards No 123 revised 2004.pdf”).

<sup>67</sup> NS Reply III-D-165 to III-D-169.

<sup>68</sup> NS Reply III-D-172; DuPont Rebuttal III-D-46.

<sup>69</sup> NS Reply III-D-172.

2007),<sup>70</sup> and the 1994 C&NW railroad without demonstrating that any one of the three railroads was comparable to the DRR. Other than discussing route miles, DuPont fails to draw comparisons between its benchmark railroads and the DRR for any relevant transportation characteristic. NS argues, inter alia, that because of the differences in relevant transportation characteristics, that for these purposes the DuPont benchmark railroads are not comparable.<sup>71</sup> We agree. The DRR is an Eastern railroad traversing a challenging topography with shorter crew and maintenance districts and steeper grades and higher horsepower per trailing ton requirements. The other three are Western railroads travelling flatter, less densely populated portions of the country. The DRR's traffic mix is very similar to NS's, not to C&NW's or either the WFA/BASIN or AEP SARR. Carloads, tons, revenue, ton-miles, car-miles and most other transportation characteristics are far closer to those of NS. Generally, NS patterns the DRR's G&A personnel and expenses after the real-world NS's while making reasonable allowances for the differences between the DRR and NS. The major differences between the proposed G&A staffing requirements are addressed below.

**a. Executive Department**

The parties disagree on the executive department staffing levels required to adequately perform the functions of the DRR. DuPont proposes an executive department consisting of four people, while NS proposes 16 employees.<sup>72</sup> NS creates an executive department, benchmarked against other railroads and its own, real world executive department, but scaled down to what it considers the bare minimum required for a railroad the size of the DRR.<sup>73</sup> Fourteen of the proposed employees would staff the DRR's external relations functions, along with one president, and an executive assistant to complete the Executive Department.<sup>74</sup> NS describes the functions to be performed by each department, and rejects DuPont's unsubstantiated claim that the DRR requires minimal staffing because it does not have to compete for the business of other railroads or modes of transportation.<sup>75</sup> The Board has consistently required parties to document their personnel and expense estimates with comparisons to real-world railroading as well as provide a description of the functions to be performed and the number of employees to carry out those functions. Although DuPont protests the larger Executive Department proposed by NS, DuPont failed in its opening to provide adequate documentation of its proposed staffing levels

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<sup>70</sup> Reconsideration denied (STB served May 15, 2009), vacated on other grounds and remanded sub nom. AEP Tex. N. Co. v. STB, 609 F.3d 432 (D.C. Cir. 2010).

<sup>71</sup> NS Reply III-D-52 to III-D-55.

<sup>72</sup> NS Reply III-D-84; DuPont Rebuttal Exhibit III-D-1, at 17-18.

<sup>73</sup> NS Reply III-D-84 & III-D-170 to III-D-172.

<sup>74</sup> NS Reply III-D-78 to III-D-84.

<sup>75</sup> NS Reply III-D-80.

and in its rebuttal to show that the defendant's proposed staffing levels were unsupported, infeasible, or unrealistic. The Board will accept NS's Executive Department staffing levels.

**b. Board of Directors**

The parties agree on the size and structure of the DRR's Board of Directors, but disagree on compensation levels for Outside Directors.<sup>76</sup> In its opening, DuPont proposes an annual salary of \$40,000 for outside directors without providing an explanation for why that compensation level is adequate except for the general statement that "[t]he salaries and benefits for the DRR's G&A personnel . . . are based on comparable and competitive compensation packages presently available in the railroad industry (and in other service industries).<sup>77</sup> NS, on the other hand, benchmarks its estimated \$263,551 annual compensation per director on the average compensation of KCS' directors over the period of 2007-2011.<sup>78</sup> In its rebuttal, DuPont protests NS's proposed higher compensation, but fails to establish that the defendant's proposed compensation levels were unsupported, infeasible, or unrealistic. Although DuPont claims NS's proposal is unreasonable, DuPont's asserted lower levels are unsupported. The Board will accept NS's estimates of Board of Directors compensation levels because DuPont has not provided sufficient evidentiary support for its estimates and the Board finds that NS's estimate, which is benchmarked to KCS, is the best evidence of record.

**c. Marketing & Customer Service Department**

The parties disagree on the DRR's staffing needs for marketing and customer service. In its opening, DuPont describes its staffing needs by benchmarking to recent SARRs and the C&NW.<sup>79</sup> DuPont explains that the DRR's marketing needs are minimal because a great majority of its traffic originates with connecting carriers.<sup>80</sup> In its reply, NS argues that DuPont's proposed Marketing and Customer Service Department is significantly understaffed, partly due

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<sup>76</sup> In its rebuttal, DuPont modifies the structure the DRR's Board of Directors from five Inside and five Outside Directors to three Inside and seven Outside Directors. DuPont Rebuttal III-D-49. The complainant may not make changes on rebuttal when the defendant has accepted the opening submission and did not have an opportunity to reply to those changes. AEPCO, slip op. at 112-13.

<sup>77</sup> DuPont Opening Exhibit III-D-2, at p. 18.

<sup>78</sup> NS Reply III-D-170 to III-D-172.

<sup>79</sup> DuPont Opening Exhibit III-D-2, at p. 1-2. (DuPont Witness McDonald's experience includes senior management positions with the C&NW. See, e.g., DuPont Opening IV-45 to IV-47.)

<sup>80</sup> DuPont Opening Exhibit III-D-2, at p. 6.



to outsourcing to a marketing contractor.<sup>81</sup> NS notes that DuPont failed to account for expenses related to this outsourcing.<sup>82</sup> It also contests DuPont's claim that it can rely on the DRR's connecting carriers to provide marketing and customer service to the DRR's customers.<sup>83</sup> In its rebuttal, DuPont acknowledges that it failed to include outsourcing costs in its opening evidence and adds employees instead of outsourcing marketing-related functions.<sup>84</sup> However, DuPont maintains that NS's proposed staffing levels are unnecessary and do not model the operations for a least-cost, most-efficient railroad.<sup>85</sup>

In its rebuttal, DuPont addresses five overarching points regarding the differences between it and NS's proposals for the DRR's Marketing and Customer Service Department. First, as discussed above, it acknowledges that it will not outsource marketing related functions.<sup>86</sup> Second, it argues that the DRR and NS traffic profiles are dramatically different and thus using real-world NS data for benchmarking is unreasonable.<sup>87</sup> Third, it asserts that because today's Class I railroads have simplified the ratemaking process and a majority of the DRR's customers are large customers, the railroad would have fewer negotiations, customers, rates, and contracts.<sup>88</sup> It adds that NS overstates its Rule 11 ratemaking requirements.<sup>89</sup> Fourth, DuPont argues that a large percentage of the DRR's traffic is coal and intermodal, which will move in unit trains.<sup>90</sup> Finally, it claims that the proposed staffing levels are excessive for a new railroad organization.<sup>91</sup>

DuPont's argument that the DRR's marketing needs are minimal is unconvincing. While it may be true that much of the DRR's traffic originates with connecting carriers, interline rates must still be negotiated between or among railroads; the originating railroad does not unilaterally establish rates for the entire route of movement. DuPont's benchmarking to the C&NW and

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<sup>81</sup> NS Reply III-D-85.

<sup>82</sup> NS Reply III-D-85.

<sup>83</sup> NS Reply III-D-85.

<sup>84</sup> DuPont Rebuttal Exhibit III-D-1, at p. 20.

<sup>85</sup> DuPont Rebuttal Exhibit III-D-1, at p. 19-22.

<sup>86</sup> DuPont Rebuttal Exhibit III-D-1, at p. 20.

<sup>87</sup> DuPont Rebuttal Exhibit III-D-1, at p. 20.

<sup>88</sup> DuPont Rebuttal Exhibit III-D-1, at p. 21.

<sup>89</sup> DuPont Rebuttal Exhibit III-D-1, at p. 21.

<sup>90</sup> DuPont Rebuttal Exhibit III-D-1, at p. 22.

<sup>91</sup> DuPont Rebuttal Exhibit III-D-1, at p. 22.

SARRs that do not match the DRR's traffic mix, geographical scope, and other transportation characteristics is less reasonable than using data benchmarked to NS.

DuPont also fails to acknowledge that NS operates in today's railroad environment and, unlike the 1994 C&NW, benefits from the same simplified ratemaking process the DRR would use. Although a Rule 11 rate reduces the negotiations between railroads during the ratemaking process, it does not eliminate the need for each railroad to separately establish a rate. The DRR is responsible for managing the customer and rate making process essentially independent from other carriers.

While it is true that a large percentage of the DRR's traffic is coal and intermodal, the real-world NS also has a large percentage of coal and intermodal traffic. DuPont has not established this as a distinction between the DRR and the real-world NS that would justify such significantly lowered customer service and marketing personnel requirements. In general, DuPont relied heavily on its expert witnesses' assertions without providing underlying or supporting evidence, adequate benchmarking or functional descriptions, and related personnel requirements. DuPont did not adequately describe the work functions that could be eliminated to justify its proposed reduced staffing levels. In its rebuttal, DuPont failed to show that NS's staffing estimates were unsupported, infeasible, or unrealistic. It has not convincingly identified the functions that could be reduced or eliminated that would justify the proposed personnel reductions. Nor has DuPont shown that the real-world NS has redundant positions, waste, or low productivity. While there may be some reduced need for personnel, the need for Marketing and Customer Service personnel would still exist.

**d. Finance & Accounting Department**

The parties disagree on the staffing needs for the DRR's Finance and Accounting Department. In its opening and rebuttal, DuPont proposes a staff of 66 and 67 employees, respectively.<sup>92</sup> NS proposes a staff of 289 individuals.<sup>93</sup> As discussed above for general G&A staffing, DuPont proposes staffing plans that are similar to past SARRs (WFA/BASIN, AEP, and AEPCO) that were primarily coal unit train railroads and the 1994 C&NW, without demonstrating how any of the four railroads is comparable to the DRR outside general route miles. NS benchmarks its estimates against the real-world NS while making reasonable adjustments for the differences between the DRR and NS.

DuPont counters that real-world NS data is not relevant to the startup DRR, in part due to years of mergers and acquisitions creating unnecessary layers of personnel.<sup>94</sup> However,

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<sup>92</sup> DuPont Rebuttal Exhibit III-D-1, at p. 11.

<sup>93</sup> NS Reply III-D-106.

<sup>94</sup> DuPont Rebuttal Exhibit III-D-1, at p. 28.

DuPont's claims are not supported by evidence of redundant positions, waste, or low productivity. DuPont also failed to provide support for its claims that the DRR's investment and technology could reduce NS's staff considerably. DuPont also claims that NS is considerably less efficient than the DRR, but again fails to provide evidence comparing its proposed technology and advancements with the real-world NS. In rebuttal, DuPont failed to show that the defendant's reply evidence was unsupported, infeasible, or unrealistic.

Much of the difference between the parties' Finance and Accounting staffing estimates relates to the Controller function; DuPont proposes 38 employees and NS responded with 242.<sup>95</sup> Each party addresses five main areas of responsibility within the Controller function: Revenue Accounting, Disbursements, Tax Function, Financial Reporting, and Budgets and Purchasing.

Regarding Revenue Accounting, in its opening DuPont explains that the Assistant Controller—Revenue oversees all customers and interline freight billing and collection, and is also responsible for supervising billing for demurrage, storage, and easements and utility crossings, as well as inputting contract and tariff rate and payment terms into the DRR's billing system.<sup>96</sup> The Assistant Controller—Revenue oversees a staff of 21 employees.<sup>97</sup> In its reply, NS explains the breadth of the Revenue Accounting Group's responsibilities and the size of the workforce needed to accomplish those requirements.<sup>98</sup> NS benchmarks to the real-world NS, while making reasonable adjustments for the differences between the NS and the DRR, including taking into account the DRR's use of a current (RMI) software package.<sup>99</sup> NS proposes a Revenue Accounting staff of 194 employees. In its rebuttal, DuPont disagrees with NS's assessment of the DRR's Revenue Accounting personnel needs, but does not provide a justification for its small Revenue Accounting staff.<sup>100</sup> DuPont also argues that NS overstated its case by implying that RMI makes errors 10% of the time.<sup>101</sup> However, NS relies on the real-world NS experience for estimating the accuracy level of its automatic rating of waybills not the higher 10% error estimate.<sup>102</sup> The real-world NS RMI use is more accurate; the Board finds this

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<sup>95</sup> DuPont Rebuttal Exhibit III-D-1, at p. 29.

<sup>96</sup> DuPont Opening Exhibit III-D-2, at p. 10.

<sup>97</sup> DuPont Opening Exhibit III-D-2, at p. 10.

<sup>98</sup> NS Reply III-D-111 to III-D-114.

<sup>99</sup> NS Reply III-D-113.

<sup>100</sup> DuPont Rebuttal Exhibit III-D-1, at p. 29-30.

<sup>101</sup> DuPont Rebuttal Exhibit III-D-1, at p. 29.

<sup>102</sup> NS Reply III-D-113. A waybill is a document issued by a railroad giving details and instructions relating to the shipment of a consignment of goods. Typically it will show the names of the consignee and consignor and the origin and destination of the consignment.

experience, scaled for the DRR's workforce and number of carloads moved through the system is more reliable than the estimate from the RMI materials provided by DuPont. Because NS benchmarked its evidence, and reasonably adjusted its numbers to account for the differences between the real-world NS and the DRR, and because DuPont failed to show that the defendant's reply evidence was unsupported, infeasible, or unrealistic, the Board will accept NS's evidence on the Revenue Accounting staffing needs as the best evidence of record.

Regarding Disbursements, DuPont proposes a staff of seven employees while NS proposes a total of 20 employees.<sup>103</sup> DuPont bases its proposal of seven employees on its traffic group and on its use of "state-of-the art" technology. In its reply, NS specifically addresses the payroll and accounts payable staffs. For accounts payable staff, NS argues that the DuPont DRR would not be adequately staffed and benchmarks the DRR to real-world NS, scaling its estimates based on relative operating expense, which correlates with the relevant workload.<sup>104</sup> For payroll staff, NS accepts DuPont's use of Paychex, but outlines the remaining responsibilities the DRR would require and argues that DuPont failed to include these remaining responsibilities.<sup>105</sup> In its rebuttal, DuPont maintains that it needs only a small revenue accounting staff, but provides no further justification for its lower staff levels. It argues that NS's proposal is excessive given the DRR's traffic group and relatively small overall staffing needs.<sup>106</sup> As discussed above, the Board concludes that a railroad with the DRR's traffic group will need more employees than a railroad that carries primarily unit train movements. Benchmarking to the real-world NS is more appropriate in this case (when those numbers are reasonably scaled and adjusted) than the much smaller staffing levels proposed here by DuPont. The Board will accept NS's evidence on the Disbursements staffing requirements as the best evidence of record.

Regarding the Tax Function, DuPont lists the employees it proposes but does not provide support for its proposed staffing levels.<sup>107</sup> In its reply, NS describes the DRR's substantial Tax Function needs, which it argues cannot be satisfied by DuPont's minimal staff and underfunded outsourcing.<sup>108</sup> NS explains the DRR's needs for a larger Tax Group by outlining requirements at the federal, state, and local levels.<sup>109</sup> It also argues that DuPont's proposal to outsource certain

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<sup>103</sup> DuPont Rebuttal Exhibit III-D-1, at p. 30.

<sup>104</sup> NS Reply III-D-116.

<sup>105</sup> NS Reply III-D-116 to III-D-118.

<sup>106</sup> DuPont Rebuttal Exhibit III-D-1, at p. 30-31.

<sup>107</sup> DuPont Opening Exhibit III-D-2, at p. 10.

<sup>108</sup> NS Reply III-D-119 (NS also argues that because DuPont provided no support for its outsourcing funding on opening, it is foreclosed from doing so in its rebuttal. See NS Reply III-D-119 n.226, III-D-67 to III-D-69.).

<sup>109</sup> NS Reply III-D-119 to III-D-120.

tax issues is unworkable. DuPont claims (with no supporting documentation) that outsourcing would cost \$200,000 for federal, state, and local tax returns, and \$100,000 for property taxes. NS specifically describes the responsibilities of its proposed tax staff.<sup>110</sup> In its rebuttal, DuPont again relies on comparisons with the C&NW and outsourcing to argue that NS's assertions about the inadequacy of DuPont's own staffing estimates are unfounded.<sup>111</sup> However, DuPont fails to compare the Tax Function work that the C&NW required to the work that the DRR would require, and does not explain why the C&NW is a reasonable benchmark for the DRR.

For the reasons discussed earlier, we reject DuPont's assertion that the C&NW is a reasonable benchmark for the DRR. Because NS provided relevant benchmarking, supporting evidence, and descriptions and requirements of staff functions for its assertions of staff size, the Board will accept NS's evidence for the DRR's Tax Function staffing as the best evidence of record.

Regarding Financial Reporting, DuPont lists the employee staffing level it proposes and justifies its size by explaining that it is not a publicly held company and does not need SEC or equity-investment reports.<sup>112</sup> In its reply, NS outlines considerably wider responsibilities for the group.<sup>113</sup> Although NS benchmarks to the real-world NS, it excludes reporting not required by the DRR and those tasks NS deemed non-essential for the DRR, while scaling the remaining tasks based on either revenue or number of employees.<sup>114</sup> In its rebuttal, DuPont stands by its opening estimates, arguing for its small Financial Reporting Group by relying on its private status.<sup>115</sup> DuPont again fails to benchmark the DRR's personnel needs for these functions against any other real-world railroad and does not show why NS's proposed reductions to its own benchmarks are insufficient. In this case, NS's benchmarked evidence on the Financial Reporting staffing levels is the best evidence of record.

Regarding Budgets and Purchasing, DuPont proposes to staff the group, but fails to provide any justification for its proposed staffing levels on opening.<sup>116</sup> Without providing supporting evidence, DuPont asserts that its needs for equipment and track-material purchases should be limited during the first five years of its existence and that it would not have anything

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<sup>110</sup> NS Reply III-D-120 to III-D-121.

<sup>111</sup> DuPont Rebuttal Exhibit III-D-1, at p. 31-33.

<sup>112</sup> DuPont Opening Exhibit III-D-2, at p. 11.

<sup>113</sup> NS Reply III-D-124.

<sup>114</sup> NS Reply III-D-124.

<sup>115</sup> DuPont Rebuttal Exhibit III-D-1, at p. 34.

<sup>116</sup> DuPont Opening Exhibit III-D-2, at p. 11-12.

approaching the purchasing demand of a railroad like NS.<sup>117</sup> NS responds that DuPont grossly understates the number of employees that would be necessary.<sup>118</sup> NS argues convincingly that the DRR would have similar needs to the real-world NS and describes in detail requirements of the Budgets and Purchasing Group while benchmarking its estimates to the real-world NS.<sup>119</sup> In its rebuttal, DuPont reiterates its opening arguments, claiming that equipment and track material purchased by the DRR would be limited on a daily basis. Because NS benchmarks to the real-world NS while providing reasonable adjustments and provides convincing supporting evidence for its arguments, the Board will accept NS's evidence on Budgets and Purchasing staffing levels as the best evidence of record.<sup>120</sup>

Overall, DuPont did not provide specific evidence to support its assertions. As discussed above, DuPont makes claims regarding inefficiencies in the real-world NS, about the requirements of privately owned versus publicly owned railroads, and the number of required employees for various functions without providing supporting evidence for its claims, or benchmarking its estimates to real-world experience. On the other hand, NS provided evidence of the efficiencies of the real-world NS and benchmarked to its own Finance & Accounting Department G&A personnel and reasonably adjusted its estimates downward based on the operating characteristics of the DRR. The Board will accept NS's evidence for the Finance and Accounting Department staffing as the best evidence of record.

**e. Law & Administration Department**

The parties disagree on the staffing levels for the DRR's Law and Administration Department. In its opening, DuPont proposes a staff of 42 employees, which NS raises to 232 in its reply.<sup>121</sup> In its rebuttal, DuPont addresses seven principle areas of difference between the parties' estimates and increases its proposed Law and Administration Department to 45 employees.<sup>122</sup> DuPont explains that the primary differences between the two estimates are due to NS's addition of (1) three Assistant Vice Presidents who would report to the Vice President of the department; (2) three District Commanders supported by 114 Special Agents, and 11 communications staff; (3) 20 Claims Agents; (4) 25 Environmental Function staff; (5) 23 Human Resources Managers; and (6) nearly \$11 million in outside legal fees.<sup>123</sup>

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<sup>117</sup> DuPont Opening Exhibit III-D-2, at p. 12.

<sup>118</sup> NS Reply III-D-124.

<sup>119</sup> NS Reply III-D-124 to III-D-127.

<sup>120</sup> DuPont Rebuttal Exhibit III-D-1, at p. 34-35.

<sup>121</sup> DuPont Rebuttal Exhibit III-D-1, at p. 36.

<sup>122</sup> DuPont Rebuttal Exhibit III-D-1, at p. 11-12, 36.

<sup>123</sup> DuPont Rebuttal Exhibit III-D-1, at p. 36-37; NS Reply III-D-128.

In general, NS has shown DuPont's evidence to support its Law and Administrative Department staffing is insufficient. DuPont generally claims to have patterned its staffing requirements after those accepted in AEPCO, the 1994 C&NW, and other recent SARRs, but it does little to explain why any of those railroads would be an appropriate benchmark for the DRR other than comparing route miles. Other transportation characteristics such as carloads, tons, revenues, ton-miles, car-miles, and traffic mix would have a higher correlation with Law and Administrative Department staffing levels. In contrast to DuPont, NS benchmarks its DRR estimates to the real-world NS and other Class I railroads while making reasonable adjustments for the differences between the DRR and those railroads.

In its rebuttal, DuPont addresses the following six areas to explain the differences between the parties, and to protest NS's additions: legal (attorneys/paralegals and outside counsel), claims, real estate, police, environmental, and human resources.<sup>124</sup> For the legal function, DuPont proposed a Vice President, three General Solicitors, three General Attorneys, three Paralegals, and an Administrative Assistant for a total of 11 employees, and \$1,075,000 in costs for outside counsel.<sup>125</sup> In its reply, NS added an Assistant Vice President, an Administrative Assistant, and three additional lawyers, as well as increasing outside counsel spending to approximately \$12 million.<sup>126</sup> In its rebuttal, DuPont maintains the same level of staff, but increases its estimated outside counsel spending to just over \$8 million.<sup>127</sup> DuPont accepts the calculation based on a percent of revenue basis, as NS proposed, but utilizes different assumptions in certain aspects of the calculation.<sup>128</sup> For these purposes, DuPont uses a study by Altman Weil as the basis for its calculation for law department spending, and then it claims a "Roanoke discount" because it contends that internal and outside counsel for the DRR will likely reside in that Virginia city, where legal salaries are substantially lower than other markets.<sup>129</sup> The Altman Weil study is more recent than the study referenced by NS, but it covers law department expenses for corporations with revenues greater than \$5 billion, not just Class I railroads. The Board finds that a study focused on the rail industry, like the one supplied by NS, is more relevant than a much broader study because of the regulatory environment in which Class I railroads must operate. DuPont provides no evidence for why all of the DRR's counsel would reside in Roanoke. While internal counsel could be centralized, it is unreasonable to assume that the DRR's counsel could adequately provide representation in at least 20 states and

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<sup>124</sup> DuPont Rebuttal Exhibit III-D-1, at p. 37-49.

<sup>125</sup> DuPont Opening III-D-20.

<sup>126</sup> NS Reply WP "DRR Operating Expenses Reply.xlsx."

<sup>127</sup> DuPont Rebuttal Exhibit III-D-1, at p. 42.

<sup>128</sup> DuPont Rebuttal Exhibit III-D-1, at p. 39.

<sup>129</sup> DuPont Rebuttal Exhibit III-D-1, at p. 40.

Washington, DC without some full time presence there. For the reasons discussed above, the Board will accept NS's law function employee count.

In its opening, DuPont provides minimal support for its proposal to outsource the claims function staff of the Law and Administrative Department and maintain only two in-house employees overseeing the entire claims investigation function, failing to detail the type of work that needs to be performed.<sup>130</sup> In its reply, NS argues that DuPont's outsourcing and proposed staffing levels are not reasonable and are significantly understated for the DRR.<sup>131</sup> NS then explains its view of the type of work a claims department must complete and why it is unreasonable to outsource certain claims functions.<sup>132</sup> It then proposes a benchmark, based upon real-world NS's claims processing department, for the DRR claims function and calculates its own proposed staffing levels.<sup>133</sup> NS also argues that because DuPont failed to adequately support its evidence on opening, it is precluded from providing evidence on rebuttal.<sup>134</sup> Because DuPont did not sufficiently support its position, and NS adequately supported its evidence on reply, the Board will accept NS's claims function employee count as the best evidence of record.

In support of its staffing proposals on opening, DuPont provides little detail about responsibilities and duties of the real estate, human resources, and security functions of the Law and Administrative Department.<sup>135</sup> For the real estate function, in its reply, NS discusses the needs and responsibilities of this office, which includes sales, acquisitions, and easements of DRR real estate, and then benchmarks its estimates to the real-world NS while providing reasonable adjustments for the specific needs of the DRR.<sup>136</sup> For the human resources function, NS discusses the needs and responsibilities of the department, and provides a description of the staff's responsibilities and the requirements of the organization, and then benchmarks its proposed staffing levels against the real-world NS while making reductions for the differences between it and the DRR. NS also disagrees with DuPont's proposed attrition rate, the rate at which employees are expected to leave the company due to various causes within a specified time period, in this case one year, and submits evidence to support its own proposed attrition rate based on the actual, real-world NS attrition rate.<sup>137</sup> For the security function, NS disagrees with

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<sup>130</sup> DuPont Opening Exhibit III-D-2, at p. 13.

<sup>131</sup> NS Reply III-D-133.

<sup>132</sup> NS Reply III-D-134 to III-D-135.

<sup>133</sup> NS Reply III-D-134 to III-D-135.

<sup>134</sup> NS Reply III-D-133 n.246.

<sup>135</sup> DuPont Opening Exhibit III-D-2, at p. 13-14.

<sup>136</sup> NS Reply III-D-137.

<sup>137</sup> NS Reply III-D-153.



DuPont's estimate of a very small police force that DuPont claims "can also call on local public police forces, should additional assistance to handle a particular incident be required."<sup>138</sup> NS replies that the proposed staffing level is far too limited and fails to cover the minimum police duties required by standard railroad practice and government regulation.<sup>139</sup> NS explains a railroad's police force's duties and the industry practice of using, and compensating, local forces to augment their own forces in extraordinary circumstances.<sup>140</sup> NS then benchmarks the DRR's staffing requirement to the real-world NS and scales for the size and geography of the DRR.<sup>141</sup> For all three of these functions, DuPont provides very little support for its positions, and fails to show that NS's reply evidence is unsupported, infeasible, or unrealistic. Thus, we accept NS's proposals as the best evidence of record.

Finally, regarding the environmental section of the Law & Administration Department, DuPont proposes excluding the environmental section and, instead, putting environmental personnel within mechanical, engineering, and MOW Department. DuPont, however, provides little or no evidence to support its exclusion of this section. NS proposes a staff of 23 employees.<sup>142</sup> In its reply, NS describes the many functions of the environmental section and benchmarks its proposed staffing levels against the real-world NS and other Class I carriers, scaling back based on the DRR's relative size. Although the DRR would not necessarily have the same level of environmental staffing as the real-world NS, DuPont has not successfully shown that NS's reply evidence is unsupported, infeasible, or unrealistic. Because NS benchmarked its estimates to real-world experience and thoroughly explained the functions that must be performed by the DRR's environmental group, and DuPont provided little or no evidence to support its elimination of the section, the Board will accept NS's evidence on the environmental section staffing as the best evidence of record.

**f. Information Technology (IT) Department**

The parties disagree on the total number of IT employees required for the DRR. DuPont proposed outsourcing much of its IT services to a third-party (RMI), and to operate without a mainframe, instead operating on a server-based system.<sup>143</sup> NS accepts this proposed structure but scales up the number of employees based on its own overall employee estimates and its own

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<sup>138</sup> DuPont Opening Exhibit III-D-2, at p. 14.

<sup>139</sup> NS Reply III-D-137.

<sup>140</sup> NS Reply III-D-138.

<sup>141</sup> NS Reply III-D-141.

<sup>142</sup> NS Reply III-D-151; DuPont Rebuttal Exhibit III-D-1, at p. 47 (noting that it includes all environmental employees in the DRR's Mechanical Department).

<sup>143</sup> DuPont Rebuttal Exhibit III-D-1, at p. 51-52.

operating plan.<sup>144</sup> In its rebuttal, DuPont objects to this scaling up, describing why the additional employees are unnecessary.<sup>145</sup> NS's scaling approach appears to be reasonable because the number of IT employees required generally increases as the number of overall employees increases. Furthermore, NS's scaling approach is more conservative than its own alternative estimate for the number of IT employees based on the number of IT devices.<sup>146</sup> DuPont, on the other hand, based its IT Department staffing on a railroad primarily serving unit trains and trainload movements that is not representative of the DRR. Because of these foregoing reasons, and because the Board has accepted NS's Operating Plan and RTC model, we will accept NS's IT Department staffing requirements for the DRR.

## **2. Compensation for G&A Personnel**

Total compensation is defined as the compensation rate multiplied by the number of employees to be compensated. Above portions of the G&A discussion address the number of employees required for the DRR. This section addresses compensation rates for those employees.<sup>147</sup> DuPont proposes using data from NS's Wage Forms A and B, with the exception of the President and Vice Presidents, whose compensation is based on salaries paid to similar employees of KCS.<sup>148</sup> NS accepts DuPont's approach to calculating salaries, with the exception of the President, Vice President, and Marketing Managers. Regarding President and Vice Presidents, NS argues that DuPont failed to include stock-based compensation.<sup>149</sup> Regarding Marketing Managers, NS would reclassify them at a higher compensation rate appropriate for sales staff as opposed to professional staff.<sup>150</sup> NS also disagrees with DuPont's proposed compensation for Outside Directors, which it claims is unreasonably low in light of typical industry costs.<sup>151</sup> NS proposes using KCS Outside Director compensation rates as a proxy for the DRR.<sup>152</sup> In its rebuttal, DuPont does not address the change in Marketing Managers' salaries. It does not believe stock options should be included in executive compensation.<sup>153</sup>

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<sup>144</sup> NS Reply III-D-159 to III-D-160.

<sup>145</sup> DuPont Rebuttal Exhibit III-D-1, at p. 51-55.

<sup>146</sup> NS Reply III-D-160 to III-D-161.

<sup>147</sup> The earlier compensation discussion in this appendix covered discussions for Non-Train Operating Personnel.

<sup>148</sup> DuPont Opening Exhibit III-D-2, at p. 18.

<sup>149</sup> NS Reply III-D-164 to III-D-165.

<sup>150</sup> NS Reply III-D-164.

<sup>151</sup> NS Reply III-D-170 to III-D-171.

<sup>152</sup> NS Reply III-D-171.

<sup>153</sup> DuPont Rebuttal Exhibit III-D-1, at p. 56.

Finally, DuPont argues that the Outside Director salary of \$40,000 will suffice, especially in the job market today.<sup>154</sup>

The Board adopts the parties' approach to calculating compensation levels using NS's Wage Forms A and B,<sup>155</sup> with the exception of the President and Vice President. Because NS's proposal to reclassify Marketing Managers is reasonable and because DuPont does not contest that reclassification, the Board will adopt NS's proposal for Marketing Managers.<sup>156</sup> Regarding the inclusion of stock options in the President's and Vice Presidents' salaries, as discussed above, the Board adopts NS's calculation of their compensation levels including stock options. Finally, as discussed above, the Board accepts NS's estimate of Outside Director compensation because DuPont has not provided sufficient evidentiary support for its \$40,000 estimate and the Board finds that NS's estimate, which is benchmarked to KCS, is the best evidence of record.

### **3. G&A Materials, Supplies, and Equipment**

The parties agree on the unit costs for the various materials, supplies, and equipment necessary for DRR G&A employees.<sup>157</sup> However, the total costs are different because the number of employees proposed by the parties varies significantly. The total costs depend on the total number of employees, which is, in large part, driven by benchmarking, the operating plan, and RTC model. Because the Board has adopted NS's employee counts, operating plan, and RTC model, the Board also adopts NS's materials, supplies, and equipment estimates.

### **4. Other**

#### **a. IT Systems**

The parties disagree on several aspects of the DRR's IT Systems. The greatest difference between the parties is in RMI implementation costs for outsourcing. In its opening, DuPont fails to provide evidence to support its estimate of RMI implementation costs other than a workpaper that classifies its number as an "estimate."<sup>158</sup> In its reply, NS increases DuPont's estimated RMI implementation costs from \$750,000 to \$27,000,000, for which NS provided supporting evidence.<sup>159</sup> In its rebuttal, DuPont accepts some of NS's criticism and opposes other criticisms.

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<sup>154</sup> DuPont Rebuttal Exhibit III-D-1, at p. 56.

<sup>155</sup> NS Reply III-D-162.

<sup>156</sup> NS Reply III-D-162 to III-D-163.

<sup>157</sup> NS Reply III-D-172.

<sup>158</sup> DuPont Opening WP "Exhibit III-D-2 Information Technology.pdf."

<sup>159</sup> NS Reply III-D-173 to III-D-174.

DuPont increases its RMI implementation costs to \$4,500,000.<sup>160</sup> However, it maintains that NS's estimates are too high because of the carload scaling factor NS used in its benchmarking calculations. DuPont argues that reporting stations should have been used as a benchmarking factor instead.<sup>161</sup>

DuPont did not adequately support its evidence in its opening and failed to demonstrate in its rebuttal that NS's reply evidence is unsupported, infeasible, or unrealistic. Therefore, the Board accepts NS's evidence on RMI implementation costs as the best evidence of record.

The parties also disagree on Oracle implementation costs. Oracle is an object-relational database management system produced and managed by Oracle Corporation. DuPont fails on opening to provide supporting evidence for its implementation and/or training costs estimates. NS developed its own estimates based on published research and the experience of the real-world NS.<sup>162</sup> Because NS provided adequate supporting evidence for its Oracle implementation costs and DuPont did not, the Board adopts NS's Oracle implementation costs and licensing fees.

On rebuttal, DuPont accepts NS's addition of Mobile Crew Reporting (M-Crew) devices,<sup>163</sup> but recalculates these numbers to reflect DuPont's train crew employment estimates.<sup>164</sup> DuPont also accepts NS's addition of an Oracle Marketing and Sales module, but reduces NS's proposed costs based on DuPont's employee count.<sup>165</sup> NS accepts DuPont's Oracle Accounting and Human Resource software packages, but adjusts the costs to reflect additional users consistent with NS's employment estimates.<sup>166</sup> Similarly, NS accepts DuPont's miscellaneous IT proposals including PC configuration, printers, servers, telephone systems, and crew call and dispatch software, but scaled these IT elements up to account for NS's higher staffing estimates.<sup>167</sup> NS also accepts DuPont's estimate for AEI Scanners, software maintenance, Railinc services, and network security with minor adjustments reflected in NS's workpapers.<sup>168</sup> In its rebuttal, DuPont rejects NS's scaling of IT hardware and provides

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<sup>160</sup> DuPont Rebuttal Exhibit III-D-1, at p. 59.

<sup>161</sup> DuPont Rebuttal Exhibit III-D-1, at p. 58-59.

<sup>162</sup> NS Reply III-D-174 to III-D-175.

<sup>163</sup> DuPont Rebuttal Exhibit III-D-1, at p. 59. M-Crew devices aid in the efficient handling of DRR crews by employees in the yard offices.

<sup>164</sup> DuPont Rebuttal Exhibit III-D-1, at p. 59.

<sup>165</sup> DuPont Rebuttal Exhibit III-D-1, at p. 59-60.

<sup>166</sup> NS Reply III-D-177.

<sup>167</sup> NS Reply III-D-177 to III-D-178.

<sup>168</sup> NS Reply III-D-178.

examples of instances in which the scaling should actually be a step function and not a linear function, but DuPont's criticisms are not supported with the step function algorithm that DuPont recommends be applied to account for NS's higher employee count estimates.<sup>169</sup> The Board adopts NS's position on Miscellaneous IT expenses because it is the best evidence of record, scaled to NS's proposed employment levels which the Board accepted. Because the Board has adopted NS's employment estimates, the Board also accepts NS's M-Crew costs, Oracle Accounting and Human Resources costs, the Oracle Marketing and Sales module, and the DRR's Network Security System.

The parties largely agree on IT Hardware costs, but in its rebuttal DuPont objects to NS's recommendation to lease Telecom T1 lines for the eight (8) DRR hump yards.<sup>170</sup> Because the Board has adopted NS's position regarding hump yards, the Board also adopts NS's position regarding IT Hardware.

**b. Other Outsourced Functions**

The parties disagree on the assessment of other outsourced function costs. DuPont proposes outsourcing several additional functions: payroll processing, internal and external auditing, claims, tax preparation, and outside counsel.<sup>171</sup> DuPont provides no evidentiary support for the costs it proposes in either its opening or its rebuttal. As discussed above, DuPont states that outside counsel would cost \$1,075,000, but increases that estimate to \$8,070,732 in its rebuttal.<sup>172</sup> In its reply, NS provides an assessment of outside counsel costs based on a benchmark study.<sup>173</sup> Because DuPont failed to support its evidence in its opening, it is foreclosed from providing new evidence on rebuttal. Similarly, DuPont fails to support its position in its opening or rebuttal for its tax preparation cost estimates, audit and internal review, and claims handling. On the other hand, NS provides supporting evidence and benchmarking to the real-world NS for those areas. Because DuPont's supporting evidence is insufficient and DuPont failed to show that the defendant's reply evidence was unsupported, infeasible, or unrealistic, the Board will accept NS's evidence on outside counsel, tax preparation, audit and internal review, and claims handling outsourced functions as the best evidence of record.

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<sup>169</sup> DuPont Rebuttal Exhibit III-D-1, at p. 63.

<sup>170</sup> DuPont Rebuttal Exhibit III-D-1, at p. 62.

<sup>171</sup> DuPont Rebuttal Exhibit III-D-1, at p. 64-65. See also DuPont Opening Exhibit III-D-2, at p. 30-31; NS Reply III-D-178 to III-D-181.

<sup>172</sup> DuPont Opening WP "DRR GA Outsourcing.xls" (\$1,075,000) & DuPont Rebuttal Exhibit III-D-1 (\$8,070,732).

<sup>173</sup> NS Reply III-D-129 to III-D-133.

Regarding payroll processing costs, NS agrees with DuPont's proposal that the DRR will outsource payroll functions and accepts DuPont's proposal to use Paychex, but adjusts the cost estimates to reflect NS's proposed staffing levels.<sup>174</sup> NS also proposes to add an outsourced cost for an Employee Assistance Program (EAP).<sup>175</sup> DuPont opposes this addition and argues that EAPs are typically considered fringe benefits and any EAP costs will be included in that calculation.<sup>176</sup> Although DuPont did not include an EAP in its list of fringe benefits in its opening, the Board finds that neither party presented an exhaustive list of benefits included as fringe benefits. In the context of the Uniform Statement of Accounts, EAPs would be considered a fringe benefit, and the AAR, which provided the fringe benefit ratio, likely would have based its calculation on the Uniform Statement of Accounts. For these reasons, the Board adopts DuPont's treatment of EAPs. Because we previously accepted NS's employee counts, the Board also adopts NS's other payroll processing accounts, but adjusts that by adopting DuPont's EAP treatment.

**c. Start-Up & Training Costs**

The parties disagree on the estimates for start-up and training costs. NS accepts DuPont's calculations of the average cost to train individual employees, but adjusts the total numbers to reflect its employee estimates.<sup>177</sup> NS and DuPont disagree on the appropriate fringe benefit ratio, which applies to total start-up and training costs.<sup>178</sup> Because the Board has accepted NS's employee estimates and fringe benefit ratios above, the Board will also accept NS's total training costs and fringe benefit ratio estimates here.

The parties also disagree on the attrition rate, an important factor for calculating total training costs because as attrition rates increase, more employees must be hired and trained. In its opening, DuPont included an attrition rate of 1.8% based on expert testimony in an unrelated mediation proceeding about the estimate of "quit rates," or the rates at which employees leave their jobs, the Class I carrier union employees submitted in that proceeding.<sup>179</sup> DuPont fails to explain why this proposed quit rate is relevant to the DRR. In its reply, NS uses attrition rates based on real-world NS experience.<sup>180</sup> In its rebuttal, DuPont attempts to justify the use of its

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<sup>174</sup> NS Reply III-D-179.

<sup>175</sup> NS Reply III-D-179.

<sup>176</sup> DuPont Rebuttal Exhibit III-D-1, at p. 64.

<sup>177</sup> NS Reply III-D-181.

<sup>178</sup> DuPont Rebuttal Exhibit III-D-1, at p. 65-70.

<sup>179</sup> DuPont Opening Exhibit III-D-2, at p. 33.

<sup>180</sup> NS Reply III-D-153.

quit rate estimates by likening the DRR to a Class I union carrier because the DRR would have comparable salaries.<sup>181</sup> Aside from the fact that portions of the testimony cited by DuPont were submitted for the first time in its rebuttal, in other contexts DuPont spends considerable time in its testimony differentiating the DRR from union carriers, because DuPont claims that as a new company it will not have to use union employees.<sup>182</sup> The Board finds that DuPont's efforts to disassociate the DRR from union carriers calls into question DuPont's use of Class I carrier union quit rates as a basis for estimating the DRR's attrition rate. We also find DuPont's supporting arguments unconvincing; the DRR's workforce attrition rate is distinct from the quit rates for union employees cited by DuPont. The Board adopts NS's attrition rate.

The Board has adopted NS's start-up and training costs in its entirety.

**d. Travel Expense**

The parties disagree on the cost of travel expenses for DRR employees. In its opening, DuPont bases its estimate for certain senior and mid-level management personnel on the 2009 annual survey published by Runzheimer International, which estimates the annual cost of corporate business travel.<sup>183</sup> NS argues that the number of positions to which travel expenses are applied should include numerous additional employees, that DuPont understates annual costs by referencing only the broad 2009 corporate business travel survey, and that DuPont's evidence ignores entertainment expenses.<sup>184</sup> As NS notes,<sup>185</sup> DuPont's initial proposal is identical to the complainant's rejected proposal in AEPCO.<sup>186</sup> In its rebuttal, DuPont accepts some of the positions added by NS for travel expenses, but does not explain why some, but not all, of NS's additional employees should be included in the DRR's travel expense.<sup>187</sup> Because DuPont did not support the number of positions added and failed to show that the defendant's reply evidence was unsupported, infeasible, or unrealistic, the Board will accept NS's number of employees who would incur travel expenses.

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<sup>181</sup> DuPont Rebuttal Exhibit III-D-1, at p. 66-67.

<sup>182</sup> See e.g., DuPont Rebuttal III-D-19, III-D-35, III-D-39 to III-D-40; DuPont Opening Exhibit III-D-1, at p. 48-49.

<sup>183</sup> DuPont Opening III-D-23.

<sup>184</sup> NS Reply III-D-185 to III-D-189.

<sup>185</sup> NS Reply III-D-185 to III-D-186.

<sup>186</sup> AEPCO, AEPCO Opening III-D-57 (Jan. 25, 2010).

<sup>187</sup> DuPont Rebuttal Exhibit III, at p. 67-68.

Although both parties use Runzheimer International surveys to support their travel expense costs, the Board favors use of an average of multiple years over using data from a single year. This reduces the chance that an expense estimate will be based on an aberrational year. The Board adopts NS's calculation of travel expenses based on the average of the 2008-2010 Runzheimer International annual surveys.

Finally, the parties disagree on how entertainment expenses should be included with the travel expense. DuPont bases its proposed entertainment expense on the 2009 Runzheimer International report.<sup>188</sup> NS bases its costs on the real-world NS entertainment costs adjusted for size and other factors.<sup>189</sup> Because NS's costs were based on the real-world NS's experience, a railroad operating in the same geographical area as the DRR, the Board believes NS's information more likely predicts DRR's entertainment expenses than the Runzheimer International study based on the average of all Class I railroads. Entertainment expenses based on the same geographic area and cities are more likely to accurately represent those to be incurred by DRR than an average for the entire country. The Board adopts NS's treatment of entertainment expenses.

The Board adopts NS's Travel Expenses in its entirety.

**e. Bad Debt**

The parties disagree on the DRR's Bad Debt expenses. DuPont failed to provide any evidence of bad debt in its opening and, as NS notes, is consequently foreclosed from presenting new evidence in its rebuttal unless it shows that NS's evidence is unsupported, infeasible, or unrealistic.<sup>190</sup> DuPont failed to show that NS's evidence is unsupported, infeasible or unrealistic; it relied on the same source as NS, but used a different time frame. NS uses the average charge for Class I railroads' Doubtful Accounts from 2007 through 2011 and applied the resulting 0.05% to DRR's average revenues during the 2009 and 2010 period.<sup>191</sup> NS's procedure for calculating Bad Debt is reasonable, and will be accepted by the Board.

**E. Maintenance-Of-Way (MOW)**

A summary of the MOW costs used here is set forth below in Table A-4. Disputed components of these costs are then discussed.

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<sup>188</sup> DuPont Rebuttal Exhibit III-D-1, at p. 68.

<sup>189</sup> NS Reply III-D-188 to III-D-189.

<sup>190</sup> NS Reply III-D-190.

<sup>191</sup> NS Reply III-D-190; NS Reply WP "DRR Operating Expense Reply.xlsx."



TABLE A-4

| MOW Costs                          |               |               |               |
|------------------------------------|---------------|---------------|---------------|
|                                    | DuPont        | NS            | STB           |
| Staffing                           | \$108,831,351 | \$264,738,135 | \$252,228,398 |
| Equipment                          | \$21,592,073  | \$55,869,494  | \$38,702,372  |
| Contracted Maintenance Expense     |               |               |               |
| Geometry Testing                   | \$1,999,014   | \$5,080,447   | \$5,080,447   |
| Rail Flaw Detection Testing        | \$2,402,989   | \$2,402,989   | \$2,402,989   |
| Rail Grinding                      | \$0*          | \$7,993,078   | \$7,993,078   |
| Yard Cleaning                      | \$959,400     | \$1,893,091   | \$1,893,091   |
| Vegetation Control                 | \$4,288,448   | \$9,969,433   | \$9,969,433   |
| Major Bridge Inspection            | \$187,076     | \$935,379     | \$935,379     |
| Ballast Cleaning                   | \$0           | \$1,866,775   | \$1,866,775   |
| Re-Paving Crossings                | \$2,060,240   | \$2,060,240   | \$2,060,240   |
| Snow Removal                       | \$325,000     | \$750,000     | \$750,000     |
| Storm Debris Removal               | \$100,000     | \$250,000     | \$100,000     |
| Washouts                           | \$100,000     | \$500,000     | \$500,000     |
| Environmental Cleanup              | \$100,000     | \$100,000     | \$100,000     |
| Annual Average Clearing for Wrecks | \$3,316,806   | \$6,169,106   | \$6,169,106   |
| Annual Average Derailment          | \$3,331,295   | \$11,339,799  | \$11,339,799  |
| Annual Bridge Maintenance          | \$380,000     | \$380,000     | \$380,000     |
| Annual Building Maintenance        | \$2,010,849   | \$719,782     | \$2,720,541   |
| Communications System Maintenance  | \$4,874,524   | \$4,124,965   | \$4,874,524   |
| TOTAL                              | \$156,859,065 | \$377,142,713 | \$350,066,172 |

\* Capitalized by DuPont, \$5,568,260.

## 1. Operating Staff

NS accepts DuPont's approach for determining the salaries for the DRR's MOW personnel, and the parties base those salaries on the salaries paid by NS to MOW personnel as shown in NS's 2009 Wage Forms A and B.<sup>192</sup> The parties, however, do not agree on the number of employees or the equipment necessary for the MOW Operating Staff.

<sup>192</sup> NS Reply III-D-207.

**a. Track Department****i. Track Department General Office Staff**

The parties disagree on the DRR's need for the Track Department General Office Staff.<sup>193</sup> Neither party provides substantial narrative or evidence in support of their proposed General Office Staff. As a general rule, because NS's evidence fails to show that DuPont's relevant staff estimate is infeasible or incapable of handling the demands of the SARR, the Board will accept DuPont's estimate of General Office Staff for the DRR Track Department.<sup>194</sup>

**ii. Roadmasters and Assistant Roadmasters**

The parties disagree on the number of Roadmasters and Assistant Roadmasters required for the DRR, as well as the appropriate size for the DRR Roadmaster territories. In its opening, DuPont proposes 36 Roadmasters with territories that range from 159 to 285 main line track miles and average 202 route miles.<sup>195</sup> DuPont assigns each Roadmaster two (2) Assistant Roadmasters for a total of 72 Assistant Roadmasters, each with an average territory of approximately 100 route miles.<sup>196</sup> In its reply, NS proposes placing a Roadmaster at each of the eight (8) hump yards it proposes.<sup>197</sup> Each hump yard Roadmaster has two (2) Assistant Roadmasters.<sup>198</sup> NS also proposes to include 61 additional Roadmasters based on workload and train interference.<sup>199</sup> Each of these additional Roadmasters has one (1) Assistant Roadmaster.<sup>200</sup> In total, NS proposes 69 Roadmasters and 77 Assistant Roadmasters.

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<sup>193</sup> DuPont Opening Exhibit III-D, at p. 5-6; NS Reply III-D-209.

<sup>194</sup> DuPont's General Office Staff excludes the following positions created and not adequately justified by NS: AVP Maintenance of Way & Structures, Chief Engineer, Maintenance of Way & Structures, Director – Maintenance Services, Manager of Maintenance Equipment, Manager MOW Standards, Engineer Track & Materials, Engineer Materials Management (North & South), Engineer Rail & Geometry Tests, System Track Analyst, and Manager Programs and Contracts.

<sup>195</sup> DuPont Opening Exhibit III-D-3, at p. 6.

<sup>196</sup> DuPont Opening Exhibit III-D-3, at p. 6.

<sup>197</sup> NS Reply III-D-210.

<sup>198</sup> NS Reply III-D-210.

<sup>199</sup> NS Reply III-D-210; NS Reply WP "Line Segment Work Load Evaluation.xlsx."

<sup>200</sup> NS Reply III-D-210 to III-D-211 & n.414.

Neither party provides a substantial amount of evidence to support their assertions regarding the size of the territories or the number of Roadmasters and Assistant Roadmasters. In its reply, NS compares the DRR territory sizes to past SARRs and details many of the problems it perceives with DuPont's proposal.<sup>201</sup> For example, NS explains that DuPont failed to consider the varying terrain of the DRR, the number of trains, and the gross tonnages when establishing the size of the Roadmaster territories.<sup>202</sup> In its rebuttal, DuPont argues that NS's proposed Roadmaster territory is unsupported, unrealistic, and unreasonable, and DuPont makes no adjustments to its original proposals.<sup>203</sup> Both parties make unsupported assertions regarding the size of the Roadmaster territories; but NS's Roadmaster estimates are based on its Operating Plan, which includes hump yards that DuPont excludes, and the Board accepts. Work in the hump yards is significant, and NS's Roadmaster proposal accounts for this. Therefore, NS's evidence is the best evidence of record and we accept NS's size and resulting number of territories. Because the number of Roadmasters is based on the number of territories, we will also accept NS's Roadmaster and Assistant Roadmaster personnel quantities.

### **iii. Track Crews**

The parties disagree on the size of the Track Crews for the DRR. In its opening, DuPont proposes 90 Field Track Crews for the DRR.<sup>204</sup> Each Track Crew would include one (1) foreman and three (3) laborers for a total of 90 foremen and 270 laborers. Each Track Crew would be responsible for an average of 118 track miles. DuPont provided little supporting evidence about how they arrived at their total numbers of Track Field Crews and the average track miles each crew would cover.

In its reply, NS proposes 180 Field Track Crews for the DRR. Each Track Crew would include one (1) foreman and three (3) laborers for a total of 180 foremen and 540 laborers.<sup>205</sup> Each Track Crew would be responsible for an average of 59 miles. In its reply, NS describes the two-step process it used to calculate its Track Field Crews and the average track miles each crew would cover. NS defined the factors necessary to determine the amount of work a crew must perform to include traffic density per track in Million Gross Tons (MGT), the amount and severity of curvature, and the number of switches, crossings, and lubricators per mile that must be maintained. NS then grouped track maintenance crews together into Roadmaster territories.

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<sup>201</sup> NS Reply III-D-210; NS Reply WP "Spreadsheet Analysis of DuPont Track Workforce Plan.xls;" NS Reply WP "Text Analysis of DuPont Track Workforce Plan.doc."

<sup>202</sup> NS Reply III-D-197.

<sup>203</sup> DuPont Rebuttal Exhibit III-D-2, at p. 23.

<sup>204</sup> DuPont Opening Exhibit III-D-3, at p. 7.

<sup>205</sup> NS Reply III-D-212.

In its rebuttal, DuPont reaffirms its opening proposal and claims that NS's reply evidence is unrealistic and unsupported.<sup>206</sup>

The Board has recognized that the number of track foreman is dependent on many factors, the most important being the anticipated workload. AEPCO, slip op. at 68. Workload is determined by the territory's gross tonnage, amount of mainline track, curvature/gradient of the mainline, and number of switches along the route. NS's evidence more clearly addresses many of these factors and includes considerably more support for its experts' assertions than does DuPont's evidence.

The Board will accept NS's evidence about Track Crew size as the best evidence of record.

#### **iv. Roadway Machine Operators**

The parties disagree on the number of Roadway Machine Operators (which NS also refers to as Backhoe Operators). In its opening, DuPont provides for a total of 42 Roadway Machine Operators, one operator for each of its 36 backhoes (one per Roadmaster territory) plus an additional six (6) operators for each of the six (6) dozers.<sup>207</sup> NS argues that these resources are inadequate for a railroad the size of the DRR and proposes that the DRR have 69 Roadway Machine Operators, one for each of its 69 backhoes (one per Roadmaster territory).<sup>208</sup> Further, NS states that the DRR would require additional operators for other MOW machinery and vehicles, as addressed below. Because the Board has accepted NS's 69 Roadmaster territories, the Board will also accept NS's 69 Roadway Machine Operators, or one Roadway Machine Operator per Roadmaster territory.

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<sup>206</sup> DuPont Rebuttal III-D-2, at p. 23.

<sup>207</sup> DuPont Opening Exhibit III-D-3, at p. 8.

<sup>208</sup> NS Reply III-D-215; NS Reply WP "Exhibit III-D-3 NS DRR MOW.xlsx."

**v. Welder/Helper/Grinders**

The parties disagree on the number of Welder/Helper/Grinder crews the DRR would require. DuPont proposes 36 two-man crews for a total of 72 crew members.<sup>209</sup> Each crew would be responsible for an average of 291 track miles. NS proposes 69 two-man crews for a total of 138 crew members.<sup>210</sup> Each crew would be responsible for an average of 154 track miles. The parties agree that there should be two crew members for each Welder/Helper/Grinder crew and that there should be one Welder/Helper/Grinder crew for each Roadmaster district.

DuPont claims the DRR has very few turnouts compared to the real-world NS, and very few joints to maintain, so the DRR would not have much need for welding repair.<sup>211</sup> NS asserts that the crew staffing proposed by DuPont would not be sufficient to maintain a high-tonnage railroad because of the average number of welds required per day, daily mileage travelled, and train delays.<sup>212</sup> NS calculates that under DuPont's proposal, crews on the DRR would be required to perform 2.2 welds per crew per day while under its own proposal crews would be required perform 1.2 welds per crew per day. DuPont rejects NS's assertions as unsupported and arbitrary, but fails to provide evidence to support its rejection.<sup>213</sup> The number of field welds is typically driven by the number of turnouts although there are additional welding tasks also performed along the SARR that must be taken into account. The NS DRR includes significantly more turnouts than the DuPont DRR. As discussed in Appendix B on RPI, the Board accepted NS's turnout quantity. Because the parties based their Welder/Helper/Grinder crew counts on the number of territories and turnout quantities, the Board accepts NS's crew count based on our acceptance of NS's territory amounts and turnout counts.

**vi. Rail Lubrication Repairmen**

In its rebuttal, DuPont indicates that the parties agreed on the use of 38 Rail Lubricators Repairmen.<sup>214</sup>

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<sup>209</sup> DuPont Opening Exhibit III-D-3, at p. 8.

<sup>210</sup> NS Reply III-D-217.

<sup>211</sup> DuPont Opening Exhibit III-D-3, at p. 8-9.

<sup>212</sup> NS Reply III-D-217 to III-D-218.

<sup>213</sup> DuPont Rebuttal Exhibit III-D-2, at p. 24-25

<sup>214</sup> DuPont Rebuttal III-D-2, at p. 25.

**vii. Roadway Equipment Mechanics**

The parties agree that the DRR should have one Roadway Equipment Mechanic for every two Roadmaster Districts. DuPont would require 18 Roadway Equipment Mechanics for its proposed 36 Roadmaster Districts.<sup>215</sup> NS would require 35 Roadway Equipment Mechanics for its proposed 364 pieces of MOW equipment, resulting in each mechanic being responsible for about nine machines.<sup>216</sup> Because the Board accepted NS's Roadmaster Districts, we will also accept NS's proposed 35 Roadway Equipment Mechanics.

**viii. Ditching Crews**

The parties agree on the crew size and equipment per crew, but disagree on the number of Ditching Crews required, in part because they disagree on the DRR's need for ditching. DuPont proposes 16 two-person Ditching Crews, with four (4) crews assigned to each MOW division.<sup>217</sup> DuPont explains that the two-person crew would consist of a Foreman, who serves as a machine operator, and a Crew Member, who serves as the dump truck driver.<sup>218</sup> NS proposes 30 two-person Ditching Crews composed of one Foreman, who serves as a machine operator, and one Swivel Dump Truck Driver or Crew Member.<sup>219</sup>

Although neither party provides significant supporting evidence for their experts' opinions, NS does explain why the DRR would need ditching and the average territory size each Ditching Crew would be required to maintain.<sup>220</sup> DuPont claims that the need for ditching would be minimal because the DRR is newly constructed.<sup>221</sup> However, NS's argument, that the shrinking and swelling of clay in many of the ditches requires maintenance, is compelling, and we therefore accept NS's estimate for Ditching Crews as the best evidence of record. The Board also accepts the parties agreed upon Ditching Crews equipment requirements.<sup>222</sup>

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<sup>215</sup> DuPont Opening Exhibit III-D-3, at p. 9; DuPont Rebuttal WP "Rebuttal Exhibit III-D-2 MOW Errata.xls."

<sup>216</sup> NS Reply III-D-219 to III-D-220; NS WP "Exhibit III-D-3 NS DRR MOW.xlsx."

<sup>217</sup> DuPont Opening Exhibit III-D-3, at p. 4 & 10 (DuPont proposes that the DRR include four MOW divisions of approximately 1,800 route miles, two in the north region and two in the south region).

<sup>218</sup> DuPont Opening Exhibit III-D-3, at p. 10.

<sup>219</sup> NS Reply III-D-220 to III-D-222.

<sup>220</sup> NS Reply III-D-222.

<sup>221</sup> DuPont Rebuttal Exhibit III-D-2, at p. 26.

<sup>222</sup> NS Reply III-D-220 to III-D-223.

**ix. Smoothing Crews**

The parties agree on the equipment necessary for staffing each Smoothing Crew,<sup>223</sup> however, there is a discrepancy in the evidence on the former point as DuPont proposes three-person crews and NS proposes two-person crews. The parties also disagree on the number of crews the DRR would require. In its opening, DuPont argues that the DRR would need 18 three-person Smoothing Crews.<sup>224</sup> In its reply, NS argues that the DRR would need 34 two-person Smoothing Crews.<sup>225</sup>

Although neither party provides significant supporting evidence for their experts' opinions, the Board will accept NS's estimate for Smoothing Crews as the best evidence of record because it is more consistent with recent Board approved SARRs.<sup>226</sup> The Board also accepts the parties' agreed upon Smoothing Crew equipment.

**x. Speedswing Operators**

The parties disagree on whether to include a Speedswing at each hump yard. In its opening, DuPont did not provide Speedswing Operators at hump yards because it did not include any hump yards.<sup>227</sup> In its reply, NS includes a Speedswing Operator at each of the hump yards to perform tasks requiring nimble lifting.<sup>228</sup> In its rebuttal, DuPont argues that a Speedswing would not be required in hump yards because rail change-outs could be done with a MOW crew truck or local Roadmaster backhoe.<sup>229</sup> The Board has previously rejected using other equipment to perform similar tasks as the Speedswing because the overall design is different enough that it is inefficient to use another type of machine for that function. AEPCO, slip op. at 68-69. Because we accepted NS's hump yards and operating plan, and because DuPont has not provided sufficient explanation for why or how other equipment can be used in place of the Speedswing, we will accept NS's Speedswing Operator and Speedswing quantities.

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<sup>223</sup> Smoothing crews are also known as surfacing gangs. They adjust the track elevations to ensure that the grade is on a smooth, continuous alignment. These crews can smooth or surface over extended, contiguous length of track (miles) or over specific small areas (feet) along the track where the grade varies over short distances due to various causes.

<sup>224</sup> DuPont Opening Exhibit III-D-3, at p. 10.

<sup>225</sup> NS Reply III-D-223.

<sup>226</sup> See NS Brief at 70 n.107 (citing AEPCO at 70-71; WFA/BASIN at 59).

<sup>227</sup> DuPont Rebuttal Exhibit III-D-2, at p. 56.

<sup>228</sup> NS Reply III-D-216.

<sup>229</sup> DuPont Rebuttal Exhibit III-D-2, at p. 56-57.

### xi. Other Track Maintenance Employees

In its reply, NS argues that the DRR will require and should include several other Track Maintenance Employees not included by DuPont on opening: four (4) Semi-Tractor Drivers, 16 Material Truck Drivers, eight (8) Crawler Dozer Operators, and four (4) Crawler Trackhoe Operators. DuPont neither provided evidence opposing the addition of these positions nor indicated that it was maintaining its position on opening. DuPont's lack of argument is taken as acceptance of NS's position. The Board will accept NS's addition of these other Track Maintenance Employees.

TABLE A-5

| Track Maintenance Employees                                                 |        |    |     |
|-----------------------------------------------------------------------------|--------|----|-----|
| Position                                                                    | DuPont | NS | STB |
| General Office Staff                                                        |        |    |     |
| Track Engineer (Division Engineer)                                          | 4      | 4  | 4   |
| Manager of Welding & Grinding (Supervisor Welding & Grinding)               | 2      | 4  | 2   |
| Manager of Work Equipment (Division Supervisors Work Equipment Maintenance) | 2      | 4  | 2   |
| Administrative Assistant/Clerks                                             | 5      | 0  | 5   |
| AVP Maintenance of Way & Structures                                         | 0      | 1  | 0   |
| Chief Engineer—Maintenance of Way & Structures                              | 0      | 1  | 0   |
| Director—Maintenance Services                                               | 0      | 1  | 0   |
| Manager of Maintenance Equipment                                            | 0      | 1  | 0   |
| Manager MOW Standards                                                       | 0      | 1  | 0   |
| Engineer Track & Materials                                                  | 0      | 1  | 0   |
| Engineer Materials Management (North & South)                               | 0      | 2  | 0   |
| Engineer Rail & Geometry Tests                                              | 0      | 1  | 0   |
| System Track Analyst                                                        | 0      | 1  | 0   |
| Manager Programs and Contracts                                              | 0      | 1  | 0   |
| Subtotal                                                                    | 13     | 23 | 13  |



|                                                        |     |       |       |
|--------------------------------------------------------|-----|-------|-------|
| Field Staff                                            |     |       |       |
| Assistant Track Engineer (Assistant Division Engineer) | 8   | 8     | 8     |
| Roadmasters                                            | 36  | 69    | 69    |
| Assistant Roadmasters                                  | 72  | 77    | 77    |
| Ditching Crew Member                                   | 16  | 30    | 30    |
| Track Crew Foremen (Track Maintenance Foremen)         | 90  | 180   | 180   |
| Track Crew Members (Track Maintenance Workers)         | 270 | 540   | 540   |
| Smoothing Gang Foremen                                 | 18  | 34    | 34    |
| Smoothing Gang Machine Operator (Smoothing Gang RMOs)  | 36  | 68    | 68    |
| Speedswing Operator                                    | 0   | 8     | 8     |
| Welders & Helpers & Grinders                           | 72  | 138   | 138   |
| Ditching Forman/Gradall Operator                       | 16  | 30    | 30    |
| Semi-Tractor Driver                                    | 0   | 4     | 4     |
| Roadway Equipment Mechanic (Mechanic)                  | 18  | 35    | 35    |
| Roadway Machine Operator (Backhoe Operator)            | 42  | 69    | 69    |
| Rail Lubricator Repair Repairman                       | 38  | 38    | 38    |
| Material Truck Drivers                                 | 0   | 16    | 16    |
| Crawler Dozer Operators                                | 0   | 8     | 8     |
| Crawler Trackhoe Operators                             | 0   | 4     | 4     |
| Subtotal                                               | 732 | 1,356 | 1,356 |
| TOTAL                                                  | 745 | 1,379 | 1,369 |

**b. Signals & Communication Department**

**i. General Office Personnel**

The parties disagree on the number of General Office Personnel the DRR's Signals & Communication Department would reasonably require. In its opening, DuPont proposes a staff of five (5) employees, including one (1) Engineer, three (3) Assistant Engineers, and one (1)

Administrative Assistant.<sup>230</sup> In its reply, NS argues that this is a totally unrealistic number given the requirements for operating and maintaining the DRR's complex systems.<sup>231</sup> NS proposes and explains the duties of a staff of 24 Signals & Communications General Office Personnel. In its rebuttal, DuPont claims that the positions NS added are unnecessary, unsupported, and another example of NS adding unnecessary multiple levels of upper administration not needed for the DRR.<sup>232</sup> DuPont also maintains that NS creates new and unnecessary design and inspection positions.

The Board agrees that NS has included positions that appear unnecessary and are not adequately justified.<sup>233</sup> Several of its added positions have never appeared in the context of a maximum rate case before the Board. Although they may exist within the real-world NS, without further explanation for why they are relevant specifically to the DRR, the Board will not accept these unsupported positions. However, the Board does accept three positions for oversight of the Positive Train Control (PTC) system. These positions are One (1) Engineer Positive Train Control Communication System to provide oversight; and two (2) Engineer Positive Train Control to perform the day-to-day operations. Otherwise, the Board accepts DuPont's proposed Signals & Communications Department General Office Personnel staffing levels.

## **ii. Signals System Maintenance**

The parties disagree on the number of signal maintainers, inspectors, and technicians the DRR would reasonably require. In its opening, DuPont states that the DRR would require 180 signal maintainers, which is one (1) signal maintainer per 2,000 signal units.<sup>234</sup> In its reply, NS

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<sup>230</sup> DuPont Opening Exhibit III-D-3, at p. 12.

<sup>231</sup> NS Reply III-D-226.

<sup>232</sup> DuPont Rebuttal Exhibit III-D-2, at p. 27.

<sup>233</sup> Positions included in NS's General Office Staff of the Signal and Communications Department that the Board does not accept include: AVP Communications & Signals, Superintendents of Communications & Signals, Director Advanced Train Control, Engineer Train Control, Engineer Records & Compliance, Engineer Positive Train Control Communications Systems, Engineer Positive Train Control, Director Communications & Signals Engineering, Manager Microwave and Data Systems, Communication Engineer VHF Systems, Communication Engineer Communications Plans, Manager Electronic System, Electronic Engineer Automatic Train Control, Engineer Railway Electronic Systems, Manager Signals Design, Administrator Grade Crossing Program, Highway Crossing Engineer, System Engineer, and Process Control System Engineer.

<sup>234</sup> DuPont Opening Exhibit III-D-3, at p. 13.

claims that the DRR would require 380 signal maintainers, which is one (1) signal maintainer per 1,100 signal units.<sup>235</sup> In its rebuttal, DuPont argues that its ratio of one (1) signal maintainer per 2,000 signal units is appropriate, but revises its total number of signal maintainers to 203 based on its rebuttal track configuration.<sup>236</sup>

DuPont argues that the Board should accept its evidence because it is consistent with the type of evidence the Board has accepted in the past. NS notes the Board accepted American Railway Engineering and Maintenance-of-Way Association (AREMA) units per territory of 1,239 and 1,250 in WFA/BASIN and AEPCO. As noted above, NS's evidence would equal 1,100 AREMA units per territory and DuPont's evidence would equal 2,000 AREMA units per territory. As such, NS's evidence is actually more consistent with recent SARR decisions. More importantly, however, NS also performed an in-depth study at four locations to attempt to accurately represent the needs of the DRR signaling network incorporating productivity, territory length, and train frequency. The Board will accept NS's evidence on signal maintainers as the best evidence of record. The Board will also accept NS's estimates for the inspectors and technicians that would be needed to work with those signal maintainers.<sup>237</sup>

### **iii. Communications System Maintenance Technicians**

The parties disagree on the number of Communications System Maintenance Technicians. In its opening, DuPont proposes 18 Communications Technicians, one for each yard and two "roving" relief technicians.<sup>238</sup> In its reply, NS recommends that the DRR include 28 Communications Technicians based on workload and geographical coverage requirements for the DRR.<sup>239</sup>

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<sup>235</sup> NS Reply III-D-227.

<sup>236</sup> DuPont Rebuttal Exhibit III-D-2, at p. 28-29.

<sup>237</sup> The Board accepts NS's evidence on Communications & Signals Supervisor, Assistant Signal Superintendent, Signal Inspector, Terminal Supervisor Communications & Signals, Signal Technicians, and Relief Signal Maintainers because DuPont failed to provide adequate evidence on rebuttal. We accept NS's evidence on Signal Technicians – Hump Yard and Signaller – Hump Yard based on our acceptance of NS's evidence on and inclusion of hump yards. For both Signal Supervisors and MOW Control Center Supervisors, in its Rebuttal DuPont agrees with NS that the positions are necessary. DuPont Rebuttal Exhibit III-D-2, at p. 35. We accept NS's evidence on these two positions.

<sup>238</sup> DuPont Opening Exhibit III-D-3, at p. 13; DuPont Rebuttal Exhibit III-D-2, at p. 29.

<sup>239</sup> NS Reply III-D-232.

Neither party provides considerable supporting evidence for their experts' opinions on Communications System Maintenance Technicians. The number of required Communications Technicians is related to the DRR's signal count, which as discussed in Appendix B on RPI, the parties agree upon in this case. However, NS's experts consider the workload and geography of the DRR when providing their estimate for Communications System Maintenance Technicians,<sup>240</sup> and DuPont provides an unrealistically low number of roving crews to respond to failures outside yards.<sup>241</sup> Because of these factors, the Board will accept NS's evidence on Communications System Maintenance Technicians as the best evidence of record.

**iv. Dispatch Center**

NS accepts the Dispatch Center on-call IT specialist proposed by DuPont.<sup>242</sup> DuPont accepts NS's addition of five (5) CTC technicians.<sup>243</sup> However, the Board will exclude these CTC technicians from the final number as the Board adopts later DuPont's PTC plan in the RPI appendix, which includes PTC from the start, as opposed to a CTC with subsequent PTC overlay. The Board does accept PTC staff in the General Office Personnel section of this appendix.

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<sup>240</sup> NS Reply III-D-232.

<sup>241</sup> NS Reply III-D-232.

<sup>242</sup> NS Reply III-D-231.

<sup>243</sup> DuPont Rebuttal Appendix A "Rebuttal to NS Reply Comments," comment 32.

TABLE A-6

| Signal & Communication Employees                      |        |    |     |
|-------------------------------------------------------|--------|----|-----|
| Position                                              | DuPont | NS | STB |
| General Office Staff                                  |        |    |     |
| Communications & Signals Engineer                     | 1      | 0  | 1   |
| Assistant Engineer—Signals                            | 2      | 0  | 2   |
| Assistant Engineer—Communications                     | 1      | 0  | 1   |
| Administrative Assistant/Clerk                        | 1      | 0  | 1   |
| AVP Communications & Signals                          | 0      | 1  | 0   |
| Superintendents of Communications & Signals           | 0      | 1  | 0   |
| Director Advanced Train Control                       | 0      | 1  | 0   |
| Engineer Train Control                                | 0      | 1  | 0   |
| Engineer Records & Compliance                         | 0      | 1  | 0   |
| Engineer Positive Train Control Communication Systems | 0      | 1  | 1   |
| Engineer Positive Train Control                       | 0      | 2  | 2   |
| Director Communications & Signals Engineering         | 0      | 1  | 0   |
| Manager Microwave and Data Systems                    | 0      | 1  | 0   |
| Coordinator Communications Control Center             | 0      | 1  | 0   |
| Engineer AEI's and Failed Equipment Detectors         | 0      | 1  | 0   |
| Manager Communications Systems                        | 0      | 1  | 0   |
| Communication Engineer VHF Systems                    | 0      | 1  | 0   |
| Communications Engineer Communication Plant           | 0      | 1  | 0   |
| Manager Electronic System                             | 0      | 1  | 0   |

|                                                             |     |     |     |
|-------------------------------------------------------------|-----|-----|-----|
| Electronic Engineer Automatic Train Control                 | 0   | 1   | 0   |
| Engineer Railway Electronic Systems                         | 0   | 1   | 0   |
| Manager Signals Design                                      | 0   | 1   | 0   |
| Administrative Grade Crossing Program                       | 0   | 1   | 0   |
| Highway Crossing Engineer                                   | 0   | 1   | 0   |
| System Engineer                                             | 0   | 2   | 0   |
| Process Control System Engineer                             | 0   | 1   | 0   |
| Subtotal                                                    | 5   | 24  | 8   |
| Field Staff                                                 |     |     |     |
| Communications & Signals Supervisor                         | 16  | 0   | 0   |
| Signals Maintainers                                         | 203 | 380 | 380 |
| Communications Technicians (Communication Technician Radio) | 18  | 28  | 28  |
| Asst. Signal Superintendent                                 | 0   | 4   | 4   |
| Signal Inspector                                            | 0   | 38  | 38  |
| Signal Supervisor                                           | 0   | 38  | 38  |
| Terminal Supervisor Communications & Signals                | 0   | 8   | 8   |
| Signal Technician—Hump Yard                                 | 0   | 8   | 8   |
| Signalmen—Hump Yard                                         | 0   | 48  | 48  |
| Signal Technician                                           | 0   | 38  | 38  |
| Relief Signal Maintainers                                   | 0   | 19  | 19  |
| Microwave Control Center Technician (CTC Center Technician) | 5   | 5   | 0   |
| MOW Control Center Supervisor                               | 0   | 5   | 0   |
| Subtotal                                                    | 242 | 619 | 609 |
| TOTAL                                                       | 247 | 643 | 617 |

**c. Bridge & Building Department****i. General Office Staff**

The parties disagree on the size and structure of the Bridge & Building Department General Office Staff. In its opening, DuPont recommends that the DRR have a Bridge & Building General Office Staff of two (2) employees.<sup>244</sup> It provides no justification for this number, or how such a limited staff could support such an extensive network like the DRR. In its reply, NS proposes that the DRR would require a General Office Staff of six (6) employees.<sup>245</sup> Although NS provides minimal explanation for those staff members, which DuPont notes on rebuttal, NS does explain the roles of these staff members within the department.

The Board finds that DuPont's recommended Bridge & Building Staff of one (1) engineer is not feasible for effective oversight and responsibility for approximately 5,970 railroad bridges and 151 highway crossings. The Board will accept NS's Bridge & Building Department General Office Staff as the best evidence of record based on the infeasibility of DuPont's proposed staffing levels.

**ii. Supervisors**

The parties disagree on the number of Bridge & Building (B&B) Department Supervisors reasonably required to operate the DRR. In its opening, DuPont advocates for four (4) Supervisors who would each cover approximately 1,819 miles.<sup>246</sup> In its reply, NS argues the DRR should instead have eight (8) Supervisors who would each cover about 908 miles.<sup>247</sup> Neither party provides a substantial amount of supporting evidence for their experts' claims, nor does either provide argument regarding the inadequacy of the other party's estimates. The Board agrees with NS that it is impractical to reasonably expect only four (4) B&B Supervisors to cover a complex system such as the DRR that contains 5,970 railroad bridges and 151 highway crossings. In addition, as NS notes and the Board agrees, it is unreasonable to expect a single supervisor to cover 1,819 miles of track, while NS's coverage of 908 miles is more realistic.<sup>248</sup> The Board will accept NS's estimate of (8) B&B Supervisors as the best evidence of record.

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<sup>244</sup> DuPont Opening Exhibit III-D-3, at p. 14.

<sup>245</sup> NS Reply III-D-234 to III-D-235.

<sup>246</sup> DuPont Opening Exhibit III-D-3, at p. 15.

<sup>247</sup> NS Reply III-D-235.

<sup>248</sup> NS Reply III-D-235.

### iii. Bridge Inspectors & Other Field Staff

The parties disagree on the number of Bridge Inspectors and other Field Staff required by the DRR's B&B Department. DuPont claims the DRR should have a total of 40 additional B&B employees.<sup>249</sup> In its reply, NS advocates for 152 additional B&B employees.<sup>250</sup> Again, neither party provides a substantial amount of supporting evidence for their experts' claims. The Board, however, agrees with NS that it is impractical to reasonably expect 40 field personnel to cover a complex system such as the DRR that contains 5,970 railroad bridges and 151 highway crossings. The Board will accept NS's estimate of 152 additional B&B employees as the best evidence of record. As NS notes, and we agree, this number of additional employees would be better capable of providing effective oversight to the smaller assigned territories.

TABLE A-7

| Bridge & Building Employees                                    |        |    |     |
|----------------------------------------------------------------|--------|----|-----|
| Position                                                       | DuPont | NS | STB |
| General Office Staff                                           |        |    |     |
| Bridge Engineer                                                | 1      | 0  | 0   |
| Administrative Assistants/Clerk                                | 1      | 0  | 0   |
| Director of Bridge & Structures                                | 0      | 1  | 1   |
| Engineer Structures                                            | 0      | 1  | 1   |
| Assistant Engineer Structures                                  | 0      | 2  | 2   |
| Manager Engineering Services Bridges & Structures              | 0      | 1  | 1   |
| Clearance Engineer                                             | 0      | 1  | 1   |
| Subtotal                                                       | 2      | 6  | 6   |
| Field Staff                                                    |        |    |     |
| Bridge & Building Carpenters, Welders, Helpers & Water Service | 24     | 0  | 0   |

<sup>249</sup> DuPont Opening Exhibit III-D-3, at p. 15.

<sup>250</sup> NS Reply III-D-236 to III-D-237.



|                                          |    |     |     |
|------------------------------------------|----|-----|-----|
| Assistant Division Engineer—Bridges      | 0  | 4   | 4   |
| Bridge & Building Supervisor             | 4  | 8   | 8   |
| Bridge & Building Foremen                | 8  | 16  | 16  |
| Multi-skilled Bridge Maintenance Workers | 0  | 48  | 48  |
| Bridge & Building Machine Operator       | 0  | 16  | 16  |
| Bridge Inspectors                        | 4  | 12  | 12  |
| Bridge Tenders                           | 0  | 56  | 56  |
| Subtotal                                 | 40 | 160 | 160 |
| TOTAL                                    | 42 | 166 | 166 |

## 2. Miscellaneous Administrative/Support Personnel

### a. Engineer of Programs and Contracts

The parties agree on a single Engineer of Program and Contracts, but disagree on the role that individual should play. In its opening, DuPont proposes an Engineer of Programs and Contracts who is responsible for both implementation and monitoring of the DRR's contracts for program and other maintenance, as well as for preparing the Engineering Department's overall budget.<sup>251</sup> It places this position in the Administrative/Support Personnel Department.<sup>252</sup> In its reply, NS counters that the engineer should only be responsible for administering programs and contracts.<sup>253</sup> NS argues that the focused responsibility is necessary to adequately manage the program contracts accounting for a railroad the size of the DRR.<sup>254</sup> NS places this position in the Track Department.<sup>255</sup> In its rebuttal, DuPont argues that NS did not adequately justify the positions it added to support the Engineer of Programs and Contracts.<sup>256</sup>

<sup>251</sup> DuPont Opening Exhibit III-D-3, at p. 16.

<sup>252</sup> DuPont Opening Exhibit III-D-3, at p. 15-16.

<sup>253</sup> NS Reply III-D-240 to III-D-241.

<sup>254</sup> NS Reply III-D-240 to III-D-241.

<sup>255</sup> NS Reply III-D-240.

<sup>256</sup> DuPont Rebuttal Exhibit III-D-2, Appendix A, at p. 5 & 9 (e.g., Manager, Programs and Contracts and Cost Control Analysts).

Because NS has not shown that the proposed responsibilities for the Engineer of Programs and Contracts as set out by DuPont are unrealistic and NS has not adequately explained the responsibilities of the other supporting staff it proposes, the Board accepts DuPont's evidence on Engineer of Programs and Contracts as the best evidence of record.

**b. Public Project Engineers**

The parties do not agree on the number of Public Project Engineers required for the DRR. DuPont advocates for four (4) positions, each responsible for approximately 1,800 route miles.<sup>257</sup> NS provides for eight (8) positions, each responsible for approximately 900 route miles.<sup>258</sup> Neither party provides a substantial amount of supporting evidence for their experts' claims. However, NS explains that it considers the extent of the DRR system, the major metropolitan areas it traverses, and the type of field work they would be performing. The Board believes it is unreasonable to expect each Public Project Engineer to adequately cover 1,800 route miles. The Board will accept NS's estimate of eight (8) Public Project Engineers as the best evidence of record.

**c. Manager Administration & Budgets**

DuPont proposes that the Manager of Administration & Budgets interfaces with the HR Department, assists with the Engineer of Programs & Contracts in preparing the annual Engineering/MOW budget, and takes responsibility for payroll/monitoring of contractor invoices.<sup>259</sup> NS argues that the DRR should eliminate the Manager of Administration & Budgets position and transfer the duties to two Cost Control Analysts in the Technical Services Department.<sup>260</sup> One of the Cost Control Analysts would be responsible for Operating Expenses and the second would be responsible for Capital Expenses.<sup>261</sup> In its rebuttal, DuPont opposes the addition of the two Cost Control Analysts, but does not address the transfer of duties to the Technical Services Department.<sup>262</sup> NS has demonstrated that both positions are needed, and the Board will accept NS's Cost Control Analysts, transfer their duties to the DRR's Technical Services Department, and eliminate the Manager of Administration & Budgets position.

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<sup>257</sup> DuPont Opening Exhibit III-D-3, at p. 16-17.

<sup>258</sup> NS Reply III-D-241.

<sup>259</sup> DuPont Opening Exhibit III-D-3, at p. 17.

<sup>260</sup> NS Reply III-D-242.

<sup>261</sup> NS Reply III-D-240 & III-D-246.

<sup>262</sup> DuPont Rebuttal Exhibit III-D-II, Appendix A, at p. 9.

**d. Manager Mechanical Operations**

The parties both included this position, but under different names and in different departments. DuPont proposes a Manager of Mechanical Operations to work with the Director of Mechanical Services and coordinate the deployment, use, and maintenance of MOW equipment.<sup>263</sup> In its reply, NS includes a Manager of Maintenance Equipment and four division supervisors who would have the same responsibilities as the Manager of Mechanical Operations.<sup>264</sup> NS has failed to show that DuPont's staffing proposal is incapable of supporting the deployment, use, and maintenance of the MOW equipment. Therefore, the Board will accept DuPont's position on the Manager of Mechanical Operations.

**e. Water Plant and Fuel Technicians**

In its opening, DuPont proposes that the DRR staff should include six (6) Water Plant and Fuel Technicians to monitor, maintain, and repair the DRR's water and fuel equipment systems.<sup>265</sup> In its reply, NS argues that the DRR should provide for the operation and maintenance of water and fuel equipment systems in the Environmental Group rather than the MOW Department.<sup>266</sup> It argues that the water and fuel equipment systems have become more critical and highly regulated, the maintenance and operation of these facilities has typically been transferred to railroads' Environmental Group.<sup>267</sup> DuPont fails to provide a narrative supporting its proposal that the DRR should have six (6) Water Plant and Fuel Technicians and provides no evidence rebutting NS's proposal to move the function to the Environmental Group.<sup>268</sup> Because DuPont failed to provide supporting evidence and because the Board has accepted NS's Environmental Group, we will accept NS's position on the Water Plant and Fuel Technicians.

**f. Other Administrative/Support Personnel**

The parties disagree about the adequate number of other MOW administrative support staff necessary for the DRR's Miscellaneous Administrative/Support Personnel. DuPont provides for one (1) Administrative Assistant/Clerk while, in its reply, NS provides for four (4) Administrative Assistants and nine (9) General Clerks.<sup>269</sup> NS explains that it conservatively

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<sup>263</sup> DuPont Opening Exhibit III-D-3, at p. 17.

<sup>264</sup> NS Reply III-D-208 & III-D-243.

<sup>265</sup> DuPont Opening Exhibit III-D-3, at p. 18.

<sup>266</sup> NS Reply III-D-244.

<sup>267</sup> NS Reply III-D-244.

<sup>268</sup> DuPont Opening Exhibit III-D-3, at p. 18.

<sup>269</sup> DuPont Opening Exhibit III-D-3, at p. 16; NS Reply III-D-240.

estimated 13 Administrative Assistant/Clerks, which is one support staff for every 10 General Office professionals and technical employees and one Administrative Assistant for each of the four MOW Divisions.<sup>270</sup> DuPont also proposed, and the Board accepted, Administrative Assistant/Clerk positions in the Signal & Communication (1), Bridge & Building (1), and Track Maintenance (5) departments. Because we accepted DuPont's other Administrative Assistants and NS has not adequately explained why that structure is insufficient to handle the needs of the SARR or why DuPont's total of eight (8) administrative personnel are insufficient to meet the needs of the DRR's MOW personnel, the Board will accept DuPont's evidence for the number of and department structure for Administrative Assistants/Clerks.

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<sup>270</sup> NS Reply III-D-206, III-D-209, III-D-244.

TABLE A-8

| Miscellaneous Administrative/Support Personnel                                                              |        |    |     |
|-------------------------------------------------------------------------------------------------------------|--------|----|-----|
| Position                                                                                                    | DuPont | NS | STB |
| <b>Administrative Support and Compensation—DuPont Departments</b>                                           |        |    |     |
| Engineer of Programs and Contracts (Manager of Programs & Contracts in the General Office Track Department) | 1      | 0  | 1   |
| Public Project Engineer                                                                                     | 4      | 0  | 0   |
| Manager Administration & Budgets (Cost Control Analysts)                                                    | 1      | 0  | 0   |
| Manager Environmental/Safety/Training (Director MOW Safety & Training)                                      | 2      | 0  | 0   |
| Manager of Mechanical Operations (Manager of Maintenance Equipment)                                         | 1      | 0  | 1   |
| Administrative Assistants/Clerk                                                                             | 1      | 0  | 1   |
| Water Plant and Fueling Technician                                                                          | 6      | 0  | 6   |
| Subtotal                                                                                                    | 16     | 0  | 9   |
| <b>Technical Services—NS Departments</b>                                                                    |        |    |     |
| AVP Technician Services                                                                                     | 0      | 1  | 0   |
| Director of Engineering Costs and Business Systems                                                          | 0      | 1  | 0   |
| Manager—Engineering Costs                                                                                   | 0      | 1  | 0   |
| Cost Control Analyst (1 operating expense, 1 capital expense)                                               | 0      | 2  | 2   |
| Manager—Engineering Systems                                                                                 | 0      | 1  | 0   |
| Systems Analyst                                                                                             | 0      | 2  | 0   |
| Joint Accounts Engineer                                                                                     | 0      | 2  | 0   |
| Systems Engineer Mapping & Utilities                                                                        | 0      | 1  | 0   |
| System Track Analyst                                                                                        | 0      | 1  | 0   |
| Engineer—Planning                                                                                           | 0      | 1  | 0   |
| Asset Inventory Engineer                                                                                    | 0      | 1  | 0   |
| Supervisor Engineer Tax Reporting                                                                           | 0      | 1  | 0   |
| Map Engineer                                                                                                | 0      | 1  | 0   |
| Micrographic Technician                                                                                     | 0      | 1  | 0   |

|                                                 |           |           |           |
|-------------------------------------------------|-----------|-----------|-----------|
| Geographical Information Systems Manager        | 0         | 1         | 0         |
| Engineer Systems Design—GIS                     | 0         | 1         | 0         |
| Engineer GIS                                    | 0         | 2         | 0         |
| System Engineer—Real Estate                     | 0         | 1         | 0         |
| Subtotal                                        | 0         | 22        | 2         |
| <b>Administrative Support—Departments</b>       |           |           |           |
| Assistant Engineer Real Estate                  | 0         | 2         | 0         |
| Director MOW Safety & Training                  | 0         | 1         | 0         |
| Office Manager                                  | 0         | 1         | 0         |
| Management Trainees                             | 0         | 24        | 0         |
| Administrative Assistant/Clerk-GO               | 0         | 9         | 0         |
| Administrative Assistant—Division               | 0         | 4         | 0         |
| Subtotal                                        | 0         | 41        | 0         |
| <b>Design &amp; Construction—NS Departments</b> |           |           |           |
| AVP Engineering Design & Construction           | 0         | 1         | 0         |
| Systems Engineer Design                         | 0         | 1         | 0         |
| Design Engineer                                 | 0         | 4         | 0         |
| System Engineer Public Projects                 | 0         | 1         | 0         |
| Utility Construction Administrative Engineer    | 0         | 1         | 0         |
| Public Utility Engineer                         | 0         | 1         | 0         |
| Manager Construction                            | 0         | 1         | 0         |
| Manager Architectural Services                  | 0         | 1         | 0         |
| Public Project Engineer                         | 0         | 8         | 8         |
| Subtotal                                        | 0         | 19        | 8         |
| <b>TOTAL</b>                                    | <b>16</b> | <b>82</b> | <b>19</b> |

**g. Allocation of MOW Personnel to Operations and Maintenance Expense**

DuPont allots two-thirds of the salaries of the Assistant Vice President of Engineering and the general office staff to operating expense, with the remaining one-third to be capitalized. DuPont allots 100% of the salaries of the field staff to operating expense.<sup>271</sup> DuPont states that this allocation is appropriate because the general office staff will be required to plan, contract,

<sup>271</sup> DuPont Rebuttal Exhibit III-D-2, at p. 60-61.

and oversee contractors who are performing the programmed maintenance, a capital cost, which will consume one-third of the staff's time. On reply, NS argues that DuPont allocates unrealistic amounts of time to non-operating activities, and adjusts the allocation of MOW time between operating and non-operating activity.<sup>272</sup> DuPont presents a feasible allocation of MOW staff time between operating and non-operating activities, and NS has not sufficiently justified the rejection of DuPont's evidence, and as such we will apply DuPont's allocation to all MOW personnel.

### **3. Planned Contract Maintenance**

#### **a. Track Geometry Testing**

NS accepts DuPont's proposed testing frequency for lines with 5-30 MGT (annually), 30-40 MGT (every six months), and over 60 MGT (every four months).<sup>273</sup> The parties disagree over the cost per mile to perform this testing. DuPont uses an in-house cost per track mile.<sup>274</sup> NS uses a higher per track mile contractor cost. The parties argue about the relevance of the information provided by DuPont.<sup>275</sup> It is unclear exactly what information changed hands or what was requested in discovery, but it is clear that DuPont used track geometry testing costs provided by NS that represented out-of-pocket costs incurred by NS for the operation of NS-owned testing equipment in 2010. Because geometry track testing is considered a contracted maintenance item and DuPont provides no contractor rates, the Board will accept NS's contractor costs for track geometry testing as the best evidence of record.

#### **b. Ultrasonic Rail Testing**

In its rebuttal, DuPont accepts NS's annual ultrasonic rail testing cost of \$2,402,989.<sup>276</sup> The Board accepts the agreed upon annual ultrasonic rail testing cost.

#### **c. Rail Grinding**

In its reply, NS accepts DuPont's proposal in its opening to grind rail every 60 MGT for tangent track, with one pass for tangent rail and rail curves less than 3 degrees, and two passes

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<sup>272</sup> NS Reply III-D-244 to III-D-247.

<sup>273</sup> NS Reply III-D-248 to III-D-249.

<sup>274</sup> DuPont Opening Exhibit III-D-3, at p. 19-20.

<sup>275</sup> DuPont Rebuttal Exhibit III-D-2, at p. 37.

<sup>276</sup> DuPont Rebuttal Exhibit III-D-2, at p. 37.

for curves equal to or greater than 3 degrees.<sup>277</sup> NS also accepts DuPont's rail grinding unit cost per track mile. The Board will accept the parties agreed upon rail grinding policy and cost per track mile.

The parties disagree on whether premium rail in sharp curves should be ground before 100 MGT.<sup>278</sup> In its opening, DuPont proposes that the DRR rail grinds every 100 MGT in the curve areas with premium rail.<sup>279</sup> In its reply, NS states this is a violation of the Rail Grinding Best Practices of 2003 and proposes that the DRR grinds its premium rail every 20 MGT for curves 3 degrees or more, 30 MGT for all other curves, and 60 MGT for tangent track.<sup>280</sup> In its rebuttal, DuPont rejects NS's experts' assertions regarding premium rail grinding as unsupported.<sup>281</sup> A Review of the Rail Grinding Best Practices shows that NS's assertion that rail grinding must occur every 25 MGT for curves 3 degrees or more where annual gross tonnage is greater than 20 MGT is consistent with best practices. The Board will accept NS's premium rail grinding schedule, as it is more nearly consistent with the Rail Grinding Best Practices.

The parties also disagree on whether to capitalize rail grinding. Capitalizing contract maintenance, such as rail grinding, is a departure from Board precedent. As the Board explained in AEPCO, the Board will accept capitalized costs for contract maintenance only where the parties agree to such treatment. AEPCO, slip op. at 77. Treating rail grinding as a capital cost is unnecessarily complicated. The Board believes it is more sensible to calculate grinding as an annual expense, so that inflation is properly accounted for. Moreover, because the DRR would have to perform this maintenance task with regularity throughout the DCF period, it is more appropriate to consider it as an annual expense. The Board will not accept DuPont's proposal to capitalize rail grinding.

#### **d. Yard Cleaning**

The parties agree that for safety and health reasons, yard tracks must be cleaned at least annually to remove all foreign materials that fall from rail cars when cars are moved during handling operations. They also agree on a daily rate of approximately \$2,600 for Yard Cleaning. However, the parties develop the number of required cleaning days differently and thus disagree on the total annual cost of yard cleaning. DuPont bases its 369 day cleaning requirement on

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<sup>277</sup> NS Reply III-D-250 to III-D-251 & III-D-264.

<sup>278</sup> NS Reply III-D-250 to III-D-251.

<sup>279</sup> DuPont Opening Exhibit III-D-3, at p. 21-22.

<sup>280</sup> NS Reply WP "NS DRR MOW.xlsx."

<sup>281</sup> DuPont Rebuttal Exhibit III-D-2, at p. 61-62.



cleaning 123 yards three (3) times per year.<sup>282</sup> NS bases its 728 day cleaning requirement on the yard track mile quantity.<sup>283</sup> NS argues that DuPont allocated three days for each yard without consideration for the size of the yards or the level of train activity.<sup>284</sup> Based on NS's workpapers,<sup>285</sup> NS uses a more methodological approach to calculating Yard Cleaning that is not seen in DuPont's evidence. The Board agrees that NS's methodology of identifying the quantity of yard track miles is the correct and accurate way of predicting the time required to clean the yards. The Board will accept NS's total annual cost of Yard Cleaning for the DRR as the best evidence of record.

**e. Vegetation Control/Brush Cutting**

The parties agree on the general approach to determining Vegetation Control needs.<sup>286</sup> However, in its reply, NS argues that DuPont makes several errors in its opening evidence, for which NS offers corrections. NS argues that DuPont's calculation of average vegetation control costs using NS's total route miles is incorrect because there are thousands of route miles not maintained by NS.<sup>287</sup> NS also argues that DuPont omits critical categories of vegetation control such as the cost of spraying the ballast and toe path area,<sup>288</sup> and DuPont assumes too little or no brush cutting costs.<sup>289</sup> In its rebuttal, DuPont argues that NS's evidence is unsupported and overstated.<sup>290</sup> With regard to the total route miles and the spraying of the ballast and toe path area, NS has not provided evidence to support its assertions. However, NS's argument that DuPont's plan will not provide the necessary track and roadbed brush clearance required by MOW crews is compelling, and its proposal of 5% annual brush clearing is reasonable. Therefore, the Board will accept NS's brush cutting costs, but will otherwise accept DuPont's costs in this category.

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<sup>282</sup> DuPont WP "Rebuttal Exhibit III-D-2 MOW.xls."

<sup>283</sup> NS Reply WP "NS DRR MOW.xlsx."

<sup>284</sup> NS Reply III-D-251 to III-D-252.

<sup>285</sup> NS Reply WP "Exhibit III-D-E NS DRR MOW.xlsx."

<sup>286</sup> NS Reply III-D-252 to III-D-253.

<sup>287</sup> NS Reply III-D-252.

<sup>288</sup> NS Reply III-D-253.

<sup>289</sup> NS Reply III-D-253.

<sup>290</sup> DuPont Rebuttal Exhibit III-D-2, at p. 41.

**f. Crossing Repaving**

The parties agree on the \$2,060,240 estimated annual cost for Crossing Repaving.<sup>291</sup> However, the parties disagree on whether this cost should be a capital or an annual expense.<sup>292</sup> In its opening, DuPont argues it should be charged as a capital expense;<sup>293</sup> NS argues that since it is a routine maintenance function, it would not be properly charged to capital.<sup>294</sup> In its rebuttal, DuPont does not address whether crossing repaving should be considered a capital or annual expense. DuPont's lack of argument or evidence on rebuttal is taken as acceptance of NS's position. Furthermore, the Board has only accepted the classification of such costs as capital costs when both parties have agreed to classify them as such. AEPCO, slip op. at 77. Because the parties do not agree here to capitalize these costs, the Board will continue with its established precedent of classifying Crossing Repaving as an annual expense.

**g. Equipment & Maintenance**

The parties agree that the annual cost of equipment and maintenance for leased equipment, including hi-rail trucks, dozers, Gradalls, backhoes, ballast regulators, tampers, air compressors, and certain power hand tools, would be 5% of the purchase price of the equipment.<sup>295</sup> However, they disagree on the quantity of equipment that would be necessary for the DRR and consequently the total equipment and maintenance costs. Equipment counts are based on personnel counts, route miles, and number of divisions in the railroad. Because the Board has accepted NS's route miles and number of territories, the Board will also accept NS's Equipment and Maintenance costs.

**h. Communication System Inspection and Repair**

The parties agree that Communication System Inspection and Repair would cost 2% of the equipment's construction cost.<sup>296</sup> The construction cost is developed within Appendix B on RPI. The Board accepts a Communication System Inspection and Repair cost of 2% of the Communication Construction Cost determined in the RPI appendix.

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<sup>291</sup> NS Reply III-D-254.

<sup>292</sup> DuPont Rebuttal Exhibit III-D-2, at p. 42.

<sup>293</sup> DuPont Opening Exhibit III-D-3, at p. 24.

<sup>294</sup> NS Reply III-D-254.

<sup>295</sup> NS Reply III-D-257.

<sup>296</sup> DuPont Rebuttal Exhibit III-D-2, at p. 42.

**i. Bridge Inspections**

The parties disagree over the inspection schedule for special inspections of major bridges. In its opening, DuPont asserts they need only be inspected every five (5) years by an outside contractor using specialized equipment that will allow careful examination of the substructure and superstructure of each bridge. DuPont proposes that annual inspections will be done by internal staff.<sup>297</sup> In its reply, NS asserts that the type of careful examination proposed by DuPont every five (5) years is required annually.<sup>298</sup> In its rebuttal, DuPont asserts that its five year plan conforms to the Federal Railroad Administration's (FRA) guidelines as set out in the Code of Federal Regulations (CFR).<sup>299</sup> Because NS is adhering to the FRA bridge safety rules,<sup>300</sup> and DuPont's plan for annual inspections by internal staff does not clearly explain how the staff would complete annual inspections based on the FRA guidelines as set out in the CFR, the Board will accept NS's Bridge Inspection schedule.

**j. Building Maintenance**

The parties agree that Building Maintenance, which would include Building Repairs, would cost 2% of the building cost.<sup>301</sup> The building cost is developed within Appendix B on RPI. The Board accepts a Building Maintenance cost of 2% of the Building Construction Cost as determined in the RPI appendix.

**k. Shoulder Ballast Cleaning**

The parties disagree on whether Shoulder Ballast Cleaning would be necessary on the DRR. DuPont argues that it would not be necessary because it is a newly constructed line, free from blown in soils, and because it would have no fouling of ballast from roadbed pumping, and no previously fouled ballast with which to contend.<sup>302</sup> NS argues that it would not be necessary in the first three (3) years, but would be required every four- to 10- years thereafter, and proposes a total of 294 ballast cleaning days in the DRR's 10 years.<sup>303</sup> For example, NS points out that

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<sup>297</sup> DuPont Opening Exhibit III-D-3, at p. 25.

<sup>298</sup> NS Reply II-D-257.

<sup>299</sup> DuPont Rebuttal Exhibit III-D-2, at p. 43 (citing "CFR Part 214").

<sup>300</sup> Compare 49 C.F.R. § 237.101 (regulating the scheduling of bridge inspections) with 49 C.F.R. Part 214 (regulating workplace safety while working on bridges).

<sup>301</sup> DuPont Rebuttal Exhibit III-D-2, at p. 44.

<sup>302</sup> DuPont Rebuttal Exhibit III-D-2, at p. 45-47.

<sup>303</sup> NS Reply III-D-254.

coal dust is a genuine concern facing all railroads.<sup>304</sup> It raises concerns about train derailments, and potential environmental problems. NS suggests, and we agree, that even a new railroad would have to perform some type of coal dust mitigation over its first 10 years and to avoid the ill effects to the ballast and its substructure. Because NS provides a comprehensive approach to estimating the proper cost for ballast cleaning, and DuPont does not adequately justify its position that no Shoulder Ballast Cleaning would be necessary, the Board will accept NS's Shoulder Ballast Cleaning annualized cost as the best evidence of record.

#### **4. Unplanned Contract Maintenance**

##### **a. Snow Removal**

The parties disagree on annual snow removal costs. DuPont proposes an annual cost of \$325,000<sup>305</sup> while NS proposes an annual cost of \$750,000.<sup>306</sup> Neither party provides a substantial amount of evidence to support their assertions regarding annual snow removal costs. In its opening, DuPont claims that NS failed to respond to discovery requests for information on snow removal costs but we note that DuPont did not file a motion to compel this evidence.<sup>307</sup> DuPont did not provide support for its opinion that snow removal would cost \$325,000 annually. In its reply, NS asserts that DuPont's opening estimates were far too low and provided an estimate based on the weather conditions for the DRR's lines.<sup>308</sup> In its rebuttal, DuPont maintains its opening estimates and claims that NS's reply is unsupported.<sup>309</sup> Because DuPont did not support its opinion on opening, and because NS provides some empirical data to support the proposed snow removal needs for the DRR, the Board will accept NS's evidence on annual snow removal costs as the best evidence of record.

##### **b. Storm Debris Removal**

The parties disagree on annual storm debris removal costs. In its opening, DuPont claims that NS failed to respond to discovery requests for information on storm debris removal costs.<sup>310</sup> DuPont did not provide any support for its expert's opinion that storm debris removal would cost

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<sup>304</sup> NS Reply III-D-254 to III-D-255.

<sup>305</sup> DuPont Opening Exhibit III-D-3, at p. 26.

<sup>306</sup> NS Reply III-D-259 to III-D-260.

<sup>307</sup> DuPont Opening Exhibit III-D-3, at p. 27.

<sup>308</sup> NS Reply III-D-259.

<sup>309</sup> DuPont Rebuttal Exhibit III-D-2, at p. 47-48.

<sup>310</sup> DuPont Opening Exhibit III-D-3, at p. 27.

\$100,000 annually for contract storm debris removal.<sup>311</sup> In its reply, NS proposes an annual cost of \$250,000 for contract storm debris removal.<sup>312</sup> Neither party provides evidence to support their experts' assertions regarding annual storm debris removal costs. Because neither party provides supporting evidence and, in its reply, NS failed to show that DuPont's argument is not feasible, the Board will accept DuPont's evidence on storm debris removal as the best evidence of record.

## **5. Large Magnitude Maintenance**

### **a. Derailments**

The parties disagree on the total annual cost for derailments. In its opening, DuPont proposes a total annual cost of \$4.9 million. It argues that because the DRR is new and constructed to modern standards, it will be less likely to experience major derailments.<sup>313</sup> In its reply, NS argues that compared to a well-maintained older track, a new railroad would not be less susceptible to derailments.<sup>314</sup> NS argues this point by noting that derailments are not solely the result of track deficiencies, but include human error, equipment issues, and signal problems.<sup>315</sup> NS proposes a total annual cost of \$6.17 million for derailments.<sup>316</sup> In its rebuttal, DuPont denies that its estimate does not recognize that newly constructed railroads may experience derailments.<sup>317</sup> It argues that its calculation, based on state-by-state accident costs as reported to the FRA, is more accurate than NS's calculation.<sup>318</sup> DuPont's argument does not account for the differences between new and older rail lines that could, as NS argues, make the new lines more susceptible to derailments. A new railroad could potentially experience a derailment in its early years of operation because of imperfections in the rail's integrity or alignment, settling of the roadbed, operator error due to unfamiliarity with the territory, and/or improper or missing speed or curvature warnings. The Board will accept NS's evidence on annual cost for derailments as the best evidence of record.

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<sup>311</sup> DuPont Opening Exhibit III-D-3, at p. 27.

<sup>312</sup> NS Reply III-D-259 to III-D-260.

<sup>313</sup> DuPont Opening Exhibit III-D-3, at p. 28-29.

<sup>314</sup> NS Reply III-D-260.

<sup>315</sup> NS Reply III-D-260.

<sup>316</sup> NS Reply III-D-262.

<sup>317</sup> DuPont Rebuttal Exhibit III-D-2, at p. 49.

<sup>318</sup> DuPont Rebuttal Exhibit III-D-2, at p. 49-52.

**b. Washouts**

The parties disagree on annual washout removal costs. DuPont proposes an annual cost of \$100,000 while NS proposes an annual cost of \$500,000. Neither party provides a substantial amount of evidence to support their assertions regarding annual washout removal costs. In its opening, DuPont argues that new railroads would not be as prone to washouts as older, real-world railroad bed.<sup>319</sup> In its reply, NS asserts that NS's estimate is trivial because many of the DRR's lines would be in areas that experience significant annual flooding and provides an estimate based on the weather conditions of the DRR's lines.<sup>320</sup> In its rebuttal, DuPont maintains its opening position and notes that NS failed to provide documentation of annual costs related to washout damage.<sup>321</sup> DuPont did not seek a motion to compel the data related to washout damage. Because DuPont failed to support its opinion on opening, and because NS provides some empirical data to support its proposed annual costs related to washout damage, the Board will accept NS's evidence on washout removal as the best evidence of record.

**6. Equipment & Related Work****a. MOW Vehicles**

NS agrees to DuPont's types of proposed track maintenance equipment and highway vehicles with several additions.<sup>322</sup> In its rebuttal, DuPont accepts the addition of 18 trucks for Roadway Mechanics that it failed to include in its opening.<sup>323</sup> DuPont also increases the number of hi-rail trucks for lubricator repairmen from 18 to 38 trucks and decreases the number of trucks for bridge crews.<sup>324</sup> DuPont argues that it otherwise provided sufficient standard trucks and other vehicles for the DRR's MOW efforts. Because the Board accepted NS's MOW office and

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<sup>319</sup> DuPont Opening Exhibit III-D-3, at p. 29.

<sup>320</sup> NS Reply III-D-262 to III-D-263.

<sup>321</sup> DuPont Rebuttal Exhibit III-D-2, at p. 52-53.

<sup>322</sup> In its reply, NS adds the following vehicles: standard trucks equipped with a utility body for roadway equipment mechanics; flat-bed trucks outfitted with a fuel cell for smoothing gangs; standard maintenance truck for B&B maintenance gangs; standard track inspection vehicles for Assistant Roadmasters; standard trucks for inspectors, technicians, and signal maintainers; hi-rail equipped trucks for signal maintainers in main line territories; one hi-rail suburban for each division engineer; one speedswing for each hump yard; 53,200 GVW trucks for bridge maintenance crews; standard material handling trucks for general use; and one semi-tractor with trailer per division for general use. NS Reply III-D-265 to III-D-266.

<sup>323</sup> DuPont Rebuttal Exhibit III-D-2, at p. 54-55.

<sup>324</sup> DuPont Rebuttal Exhibit III-D-2, at p. 55-56.

field personnel positions and quantities, the Board will also accept NS's proposed additional vehicles as they are necessary to support NS's recommended personnel.

NS accepts DuPont's proposed monthly rental unit costs for equipment with several exceptions. NS rejects DuPont's use of a factor of 60 (12 months each year for 5 years) to convert purchase prices of all MOW vehicles and equipment to lease rates. NS proposes factors for converting purchase prices to lease rates based on the gross vehicle weight, which corresponds to the life of the vehicle. The Board accepts NS's use of lease rates derived from factors corresponding to vehicle life.

The parties agree on the use of a Plasser 09-16 DynaCat tamper for smoothing, but NS increases its cost from \$750,000 to \$2,000,000. NS furnished a copy of an email from the manufacturer confirming the price of the tamper.<sup>325</sup> Based on this evidence,<sup>326</sup> the Board will accept NS's estimate of \$2,000,000 as the best evidence of record.

**b. Rail Drills**

In its opening, DuPont proposes that each track crew should have one rail drill, and each Assistant Roadmaster should also have a hydraulic rail drill.<sup>327</sup> DuPont states the total cost of rail drills is included in the cost of the hydraulic tool package included with the lease of every hi-rail and every track crew vehicle.<sup>328</sup> In its reply, NS does not address rail drills. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on rail drills.<sup>329</sup>

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<sup>325</sup> NS Reply III-D-267 n.291.

<sup>326</sup> DuPont also claims it consulted with the manufacturer for an estimate of the cost to use a Plasser 09-16 DynaCat tamper for smoothing. However, DuPont does not provide support for that assertion or the estimate it received and thus we cannot verify the content of that exchange.

<sup>327</sup> DuPont Opening Exhibit III-D-3, at p. 34.

<sup>328</sup> DuPont Opening Exhibit III-D-3, at p. 34.

<sup>329</sup> While the Board accepts DuPont's argument in this section, and many other sections involving tools, the final quantity accepted differs from what DuPont had argued because the Board has accepted NS's quantities on the number of crews or districts. For example, in this section, the Board accepts DuPont's argument that each Assistant Roadmaster should have a hydraulic drill, and therefore the final number of hydraulic drills correlates to the Board's accepted number of Assistant Roadmasters.

**c. Impact Wrenches**

In its opening, DuPont proposes that each track crew and Assistant Roadmaster should have an impact wrench in the hydraulic tool set on its hi-rail vehicle.<sup>330</sup> DuPont states the total cost of impact wrenches is included in the cost of the hydraulic tool package included with lease of every hi-rail and every track crew vehicle.<sup>331</sup> In its reply, NS does not address impact wrenches. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on impact wrenches.

**d. Tamping Tools**

In its opening, DuPont proposes that each track crew should have a small, hand-held tamper.<sup>332</sup> DuPont also states that each track crew will be equipped with a set of tamping tools driven by the hi-rail vehicle's hydraulic system. DuPont states the total cost of tamping tools is included in the cost of the hydraulic tool package included with every lease of hi-rail and every track crew vehicle.<sup>333</sup> In its reply, NS does not address tamping tools. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on tamping tools.

**e. Tamping & Ballast Regulators**

In its opening, DuPont proposes that each smoothing crew should be equipped with a modern high-speed tamper and a ballast regulator.<sup>334</sup> DuPont states that the cost of its proposed 18 tampers is \$2.7 million and the cost of its 18 proposed ballast regulators is \$1.1 million per year.<sup>335</sup> In its reply, NS does not address Tamping & Ballast Regulators. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on tamping tools.

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<sup>330</sup> DuPont Opening Exhibit III-D-3, at p. 34.

<sup>331</sup> DuPont Opening Exhibit III-D-3, at p. 34-35.

<sup>332</sup> DuPont Opening Exhibit III-D-3, at p. 35.

<sup>333</sup> DuPont Opening Exhibit III-D-3, at p. 35.

<sup>334</sup> DuPont Opening Exhibit III-D-3, at p. 35.

<sup>335</sup> DuPont Opening Exhibit III-D-3, at p. 35.



**f. Grinders**

In its opening, DuPont proposes that each welding/grinding crew should be equipped with a complement of rail grinding equipment.<sup>336</sup> It also proposes that each of the track crews be equipped with a straight grinder in connection with their occasional repair work. DuPont states the total cost of the grinding equipment is included in the cost of the hydraulic tool sets.<sup>337</sup> In its reply, NS does not address Grinders. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on grinding equipment.

**g. 400-Amp Welders**

DuPont proposes that each welding/grinding crew should be equipped with a 400-amp welder. It states the total cost of the 400-amp welders is included in the lease cost of the welder trucks and the tool and material additive.<sup>338</sup> In its reply, NS does not address 400-amp welders. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on 400-amp welders.

**h. Oxy-Acetylene Welders**

In its opening, DuPont proposes that each welding/grinding crew should be equipped with an oxy-acetylene welder.<sup>339</sup> It states the total cost of the oxy-acetylene welder is included in the cost of the welder trucks and the tool and material additive.<sup>340</sup> In its reply, NS does not address oxy-acetylene welders. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on oxy-acetylene welders.

**i. Gradalls**

In its opening, DuPont proposes that the DRR be equipped with 12 hi-rail Gradall hydraulic excavators which are available to 12 of the 16 ditching crews.<sup>341</sup> It states the annual

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<sup>336</sup> DuPont Opening Exhibit III-D-3, at p. 35.

<sup>337</sup> DuPont Opening Exhibit III-D-3, at p. 36.

<sup>338</sup> DuPont Opening Exhibit III-D-3, at p. 36.

<sup>339</sup> DuPont Opening Exhibit III-D-3, at p. 36.

<sup>340</sup> DuPont Opening Exhibit III-D-3, at p. 36.

<sup>341</sup> DuPont Opening Exhibit III-D-3, at p. 36.

cost of the Gradalls is \$864,000.<sup>342</sup> In its reply, NS does not address Gradalls. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on Gradalls.

**j. Track Hoes**

In its opening, DuPont proposes that the DRR should have four (4) backhoe track excavators (or track hoes) that are available for use by the four (4) ditching crews without Gradalls.<sup>343</sup> It states the total cost for the track hoes is \$168,000.<sup>344</sup> In its reply, NS does not address track hoes. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on track hoes.

**k. Backhoe and Dump Trucks**

In its opening, DuPont proposes that each of the Roadmaster territories should be equipped with a small rubber-tied backhoe, dump truck, and trailer to transport the backhoe.<sup>345</sup> These additional support vehicles are available to the track, ditching, and smoothing crews on an as-needed basis. It states the total cost for this equipment is \$2.0 million.<sup>346</sup> In its reply, NS does not address backhoes and dump trucks. NS's lack of argument or evidence on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on backhoe and dump trucks.

**l. Work Trains**

DuPont explains that contractors provide the equipment for large track programs, but several of the DRR's switching service locomotives are available for periodic use in contractor work-train service, as needed. The locomotives can also be used as needed by the DRR's field MOW track forces.<sup>347</sup> NS's lack of argument on reply is taken as acceptance of DuPont's position. The Board will accept DuPont's position on work trains.

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<sup>342</sup> DuPont Opening Exhibit III-D-3, at p. 36.

<sup>343</sup> DuPont Opening Exhibit III-D-3, at p. 37.

<sup>344</sup> DuPont Opening Exhibit III-D-3, at p. 37.

<sup>345</sup> DuPont Opening Exhibit III-D-3, at p. 37.

<sup>346</sup> DuPont Opening Exhibit III-D-3, at p. 37.

<sup>347</sup> DuPont Opening Exhibit III-D-3, at p. 37-38.

**F. Leased Facilities<sup>348</sup>**

The parties disagree on the costs of Leased Facilities. In its opening, DuPont states that the DRR has 32 joint facility agreements that cover 818 route miles throughout its system.<sup>349</sup> Its total estimated Leased Facilities costs were \$42.3 million.<sup>350</sup> In its reply, NS asserts that DuPont made numerous errors in its Leased Facilities costs.<sup>351</sup> NS claims that DuPont misused various NS trackage rights agreements, and did not step into NS's shoes and accept all the terms, conditions, and prerequisites of those agreements.<sup>352</sup> NS argues that some of the most pervasive errors include: 1) DuPont repeatedly misapplying trackage rights fees; 2) DuPont improperly routing traffic over certain trackage rights segments; and 3) DuPont relying heavily on trackage rights rather than building necessary track in the Chicago area, resulting in failure of service.<sup>353</sup> In its rebuttal, DuPont makes limited changes to its calculations of the Leased Facilities costs and proposes \$58.9 million in costs for 817.56 trackage rights miles.<sup>354</sup> DuPont's trackage rights cost estimates are inextricably linked to its Operating Plan and RTC models that are used to determine the transportation characteristics, such as the number of car-miles, used in its calculation of Leased Facilities costs. As a result, we cannot accept DuPont's evidence regarding Leased Facilities quantities and costs even after its corrections. Because the Board has accepted NS's Operating Plan, and because DuPont has failed to show that the defendant's reply evidence was unsupported, infeasible, or unrealistic, the Board will accept NS's Leased Facilities cost evidence.

**G. Insurance**

The parties agree to use historical averages of Insurance costs as a percent of operating expenses (the insurance ratio) to determine annual Insurance costs for the DRR. In its opening, DuPont proposes using NS's 2009 insurance ratio of 1.96%. In its reply, NS proposes using the average NS insurance ratio over the three year period from 2009 to 2011 of 2.36%.<sup>355</sup> NS argues that DuPont's proposed insurance ratio is unprecedentedly low for SAC cases and the lowest

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<sup>348</sup> Leased facilities include facilities leased by joint facility agreements and by trackage rights agreements.

<sup>349</sup> DuPont Opening III-D-23.

<sup>350</sup> DuPont Rebuttal III-D-56; DuPont Opening WP "Joint facility charges.xlsx."

<sup>351</sup> NS Reply III-D-268 to III-D-276.

<sup>352</sup> NS Reply III-D-268.

<sup>353</sup> NS Reply III-D-270 to III-D-275.

<sup>354</sup> DuPont Rebuttal III-D-57.

<sup>355</sup> NS Reply III-D-278.

ratio that NS has seen in the last decade.<sup>356</sup> In its rebuttal, DuPont continues to rely on the 1.96% insurance ratio developed from NS's 2009 R-1 Annual Report.<sup>357</sup> DuPont rejects NS's arguments and reference to a 3.54% insurance ratio as the average of recent Board accepted values.<sup>358</sup> It also rejects the assertion that using NS's 2009 R-1 Annual Report insurance ratio is invalid, or otherwise not representative of real world experience.<sup>359</sup> That NS may have accepted DuPont's proposal to use a single year 2009 expenses for other evidence categories in this case does not mean that single year expenses are preferred for all cost categories. As previously stated, the Board prefers the use of multi-year cost data as opposed to a single year's value that increases the risk of an aberrational result. In this instance, the use of an average insurance ratio value over a period of years rather than use of a single year's value represents the best evidence of record. The Board adopts NS's Insurance calculations for the DRR.

#### **H. Ad Valorem Tax**

The parties disagree on the calculation of Ad Valorem Taxes for the DRR. In its opening, DuPont used NS's 2009 taxes and route-miles to calculate a per-route-mile Ad Valorem Tax expense for NS that DuPont then extrapolates to the DRR.<sup>360</sup> But as NS points out on reply, most states tax railroad property as a function of a railroad's overall profitability as an enterprise—its “unit value”—and a SARR that is more profitable than the incumbent railroad will pay more taxes as a result. DuPont's DRR Ad Valorem taxes depend upon the profitability of the incumbent NS in 2009 and not on DRR's 2009 profitability. Arguably, because DuPont anticipates that the DRR would be more profitable than the incumbent NS, the DRR will pay more Ad Valorem taxes than the per-route-mile amounts estimated by DuPont. In its reply, NS documents that the unit valuation approach is the basis for its Ad Valorem Taxation in 15 of the DRR's 20 states.<sup>361</sup> NS accepts DuPont's ad valorem taxation calculations for the remaining five states.<sup>362</sup> NS explains that unit valuation states apply one or more of three approaches to estimate the railroad's property value for Ad Valorem tax assessment purposes.<sup>363</sup> NS argues that the common thread among the DRR's Unit Value states is that their unit valuations are

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<sup>356</sup> NS Reply III-D-276 to III-D-277.

<sup>357</sup> DuPont Rebuttal III-D-65.

<sup>358</sup> DuPont Rebuttal III-D-64.

<sup>359</sup> DuPont Rebuttal III-D-64 to III-D-65.

<sup>360</sup> DuPont Opening III-D-24.

<sup>361</sup> NS Reply III-D-281.

<sup>362</sup> NS Reply III-D-280 n.501.

<sup>363</sup> NS Reply III-D-281 to III-D-284.

primarily driven by the railroad's income value.<sup>364</sup> NS also explains that a Net Railway Operating Income (NROI) adjustment should be made to account for the DRR's relative income value. Because DuPont used a methodology that ignored how most of the states calculate the Ad Valorem Taxes for railroads, the Board believes that NS's assessment of the calculation is more accurate, and we accept NS's estimate of Ad Valorem Taxes.

### **I. Loss & Damage**

NS accepts DuPont's methodology for calculating the DRR's annual loss and damage costs. However, it makes several corrections in the calculations because it argues that DuPont miscalculated the off-SARR miles used to allocate revenues. NS calculated Loss and Damage costs of \$12.83 million whereas DuPont calculated \$12.86 million.<sup>365</sup> Because the Board accepted NS's operating statistics, including off-SARR miles, the Board will also adopt NS's revised Loss and Damage costs as the best evidence of record.

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<sup>364</sup> NS Reply III-D-284 to III-D-286.

<sup>365</sup> NS Reply WP "DRR Loss and Damage Reply.xlsx;" DuPont Rebuttal WP "DRR Loss and Damage Rebuttal.xlsx."

**APPENDIX B—DRR ROAD PROPERTY INVESTMENT**

This appendix addresses the evidence and arguments of the parties concerning what it would cost to build the DRR. Table B-1 summarizes the parties' costs estimates associated with that construction, as well as the numbers used in our analysis.

TABLE B-1

| DRR Construction Costs     |                  |                  |                  |
|----------------------------|------------------|------------------|------------------|
|                            | DuPont           | NS               | STB              |
| Land                       | \$4,099,533,161  | \$5,323,836,000  | \$5,188,144,371  |
| Roadbed Preparation        | \$4,336,345,856  | \$9,173,241,189  | \$6,089,782,845  |
| Track                      | \$8,208,180,061  | \$10,628,413,215 | \$9,739,622,711  |
| Tunnels                    | \$1,081,190,307  | \$1,085,992,262  | \$1,081,190,307  |
| Bridges                    | \$2,285,092,433  | \$4,348,113,677  | \$3,677,520,158  |
| Signals and Communications | \$1,489,241,789  | \$2,154,911,924  | \$2,049,755,911  |
| Buildings and Facilities   | \$1,043,764,479  | \$2,636,247,091  | \$1,617,063,936  |
| Public Improvements        | \$165,472,162    | \$243,336,967    | \$165,420,637    |
| Mobilization               | \$502,450,751    | \$916,793,225    | \$659,349,626    |
| Engineering                | \$1,860,928,709  | \$2,980,863,797  | \$2,442,035,651  |
| Contingencies              | \$2,097,266,655  | \$3,370,629,499  | \$2,752,174,178  |
| TOTAL                      | \$27,169,466,364 | \$42,862,378,846 | \$35,462,060,332 |

**A. Real Estate**

TABLE B-2

| Real Estate Acreage   |        |        |        |
|-----------------------|--------|--------|--------|
|                       | DuPont | NS     | STB    |
| ROW                   | 77,544 | 77,401 | 77,401 |
| Easements             | 9,103  | 9,170  | 9,170  |
| Yards                 | 5,516  | 6,223  | 6,223  |
| Microwave Tower Sites | 604    | 586    | 586    |
| Partially Owned Lines | 0      | 789    | 66     |
| TOTAL                 | 92,767 | 94,169 | 93,446 |

TABLE B-3

| Real Estate Costs     |                 |                 |                 |
|-----------------------|-----------------|-----------------|-----------------|
|                       | DuPont          | NS              | STB             |
| ROW                   | \$3,080,919,144 | \$3,822,413,000 | \$3,822,413,000 |
| Easements             | \$534,636       | \$28,798,000    | \$28,798,000    |
| Yards                 | \$995,279,382   | \$1,302,172,000 | \$1,302,172,000 |
| Microwave Tower Sites | \$22,800,000    | \$29,818,000    | \$29,818,000    |
| Partially Owned Lines | \$0             | \$140,635,000   | \$4,943,371     |
| TOTAL                 | \$4,099,533,161 | \$5,323,836,000 | \$5,188,144,371 |

### 1. Acquisition Costs

On opening, DuPont did not specifically address land acquisition costs, which in this context represent those costs over and above the per acre purchase price of the land. On reply, NS states that DuPont had “understated the DRR land acquisition costs because, in the real world, a railroad purchasing real estate must pay not only the purchase price of the land, but also the associated transaction costs of acquiring the land, including title work, surveys, appraisals, negotiation, and closing costs.”<sup>366</sup> NS states that it has developed a conservative estimate of costs the DRR would incur on a per parcel basis.<sup>367</sup> NS estimates the DRR consists of 9,000 parcels of land.<sup>368</sup> NS submits the following costs:

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<sup>366</sup> NS Reply III-F-286.

<sup>367</sup> NS Reply III-F-287.

<sup>368</sup> NS Reply III-F-287.

TABLE B-4

| Cost Category | Category Description                                                                                                                                                                         | Per Parcel Cost              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Title Work    | Title research resulting in a commitment for title insurance; this fee includes updates required during the acquisition process                                                              | \$500                        |
| Survey        | A boundary survey indicating the precise property to be acquired, including an area calculation                                                                                              | \$4,000                      |
| Appraisal     | An expert opinion of the value of the property or real estate interests to be acquired                                                                                                       | \$2,000                      |
| Negotiations  | Negotiations with landowners over the costs of the property                                                                                                                                  | \$2,500                      |
| Closing Costs | Closing costs include recording fees, title insurance, escrow fees, document preparation fees, mortgage payoff fees and attorneys' fees; amount will vary largely based on costs of property | \$3,440                      |
|               | Total costs per parcel                                                                                                                                                                       | \$12,440                     |
|               | Total Estimated Costs for DRR                                                                                                                                                                | \$111,960,000 <sup>369</sup> |

On rebuttal DuPont states that it applied a 2.7% mobilization factor to all DRR road property investment accounts other than land.<sup>370</sup> DuPont states that NS's real estate acquisition costs are improper and should be rejected.<sup>371</sup> DuPont argues that "the Board has consistently held that mobilization only applied to construction costs."<sup>372</sup> DuPont states that it has included

<sup>369</sup> NS Reply III-F-289.

<sup>370</sup> DuPont Rebuttal III-F-143.

<sup>371</sup> DuPont Rebuttal III-F-143.

<sup>372</sup> DuPont Rebuttal III-F-143 (citing Ariz. Elec. Power Coop. v. BNSF Ry. (AEPCO), NOR 42113, slip op. at 132 (STB served Nov. 22, 2011); FMC Wyo. Corp. v. Union Pac. R.R., 4 S.T.B. 699, 818 (2000); Ariz. Pub. Serv. Co. v. Atchison, Topeka & Santa Fe Ry. (APS 1997), 2 S.T.B. 367, 401 (1997)).



sufficient costs for real estate acquisition on opening and that NS has not provided sufficient grounds to justify the inclusion of additional real estate acquisition costs.<sup>373</sup>

DuPont also argues that the inclusion of these costs would represent a barrier to entry because NS has not shown that it actually incurred these costs when it originally acquired the land.<sup>374</sup> DuPont states NS has also failed to acknowledge that it and its predecessors benefited from federal land grants and it cannot be the case that NS incurred significant costs to acquire land.<sup>375</sup>

The Board will accept NS's additional costs for real estate acquisition, which are different from the mobilization costs discussed by the parties in other contexts, because they represent, as NS notes, real world costs of acquiring land for the DRR. These additional costs are distinct from any general premium needed to collect the necessary real estate from a forewarned, opportunistic market. The Board instead considers these to be transaction-specific costs which the DRR should reasonably expect to incur while purchasing each parcel of needed real estate.

## 2. Acreage

On opening DuPont summarizes its real estate acreage and costs in the table below.

TABLE B-5

| DRR Land Acquisition Acreage and Costs |         |                          |
|----------------------------------------|---------|--------------------------|
| Property Type                          | Acreage | Cost (\$ millions)       |
| ROW                                    |         |                          |
| Fee Simple                             | 77,353  | \$2,811.9                |
| Easement                               | 9,103   | 0.5                      |
| Yard                                   | 3,725   | 539.2                    |
| Other                                  |         |                          |
| Microwave Towers                       | 604     | 22.8                     |
| TOTAL                                  | 90,785  | \$3,374.4 <sup>376</sup> |

<sup>373</sup> DuPont Rebuttal III-F-143 to III-F-144.

<sup>374</sup> DuPont Rebuttal III-F-144.

<sup>375</sup> DuPont Rebuttal III-F-145.

<sup>376</sup> DuPont Opening III-F-2.

DuPont states that the majority of the DRR's right-of-way is based upon an average width of 100 feet and 75 feet in urban settings.<sup>377</sup>

On reply, NS submits a total DRR acreage evidenced in the table below.

TABLE B-6

| DRR Appraised Market Value               |        |                 |                         |
|------------------------------------------|--------|-----------------|-------------------------|
| Component of Valuation                   | Acres  | Market Value    | Average Value/Acre      |
| ROW—Fee Simple Value                     | 86,571 | \$4,154,519,000 | \$47,000                |
| Land Value for Yards                     | 6,223  | \$1,302,172,000 | \$209,265               |
| Land Value for Communications Facilities | 586    | \$29,818,000    | \$50,852                |
| Partially Owned Lines                    | 789    | \$140,635,000   | \$178,266               |
| Less: Land Value for Easement Areas      | 9,170  | (\$332,106,000) | (\$36,217)              |
| Plus: Cost for DRR Easement Areas        | 9,170  | \$28,798,000    | \$3,140                 |
| TOTAL VALUATION                          | 94,169 | \$5,323,836,000 | \$56,535 <sup>378</sup> |

NS argues that DuPont failed to account for land on which the DRR has a partial ownership interest.<sup>379</sup> NS also argues that the yard acreage for the DRR is insufficient because DuPont did not properly configure or size the yards.<sup>380</sup> NS states that its real world system configuration requires 6,307 acres of land to accommodate its yard facilities.<sup>381</sup> NS states that it does not dispute DuPont's microwave tower communications site acreage or placement.<sup>382</sup>

On rebuttal, DuPont makes two adjustments.<sup>383</sup> First, DuPont adds 16.84 miles in seven locations.<sup>384</sup> Second, DuPont made additions to the land required for yards in order to accommodate addition of classification tracks.<sup>385</sup>

<sup>377</sup> DuPont Opening III-F-3.

<sup>378</sup> NS Reply III-F-10.

<sup>379</sup> NS Reply III-F-33.

<sup>380</sup> NS Reply III-F-34.

<sup>381</sup> NS Reply III-F-34.

<sup>382</sup> NS Reply III-F-34.

<sup>383</sup> DuPont Rebuttal III-F-4.

<sup>384</sup> DuPont Rebuttal III-F-4.

The Board will accept NS's acreage values because we are accepting NS's operating plan and system configuration, and it follows logically that NS's acreage values are necessary to support that operating system. Moreover, the Board will require the DRR to acquire acreage for two partially owned switching companies for reasons discussed below, but not for those switching companies in which NS does not have an ownership interest.

### 3. Unit Costs

DuPont states that in conducting its land appraisal it used an "Across the Fence" methodology, which estimates the value of the DRR land "by establishing the value of adjacent lands and parcels of land in proximity to the ROW with the same zoning as lands abutting the ROW."<sup>386</sup> DuPont submits a total cost of \$3,370,835,300 for real estate acquisition.<sup>387</sup>

On reply, NS argues that DuPont achieves low real estate acquisition costs because it uses incorrect acquisition dates and fundamentally flawed methodologies for its cost calculations.<sup>388</sup> NS states that DuPont values the DRR's real estate as of June 1, 2009, which is over two years after the DRR would need to acquire the property in order to begin construction based on DuPont's own construction schedule.<sup>389</sup> NS argues that this is an attempt to value the property during the depth of the 2009 real estate crash.<sup>390</sup> NS instead valued the DRR's real estate on July 1, 2007, which is in the middle of the proposed land acquisition period for the DRR and accommodates the DRR construction schedule.<sup>391</sup> NS argues that the land for the DRR must be purchased before construction begins and that the Board has recognized this requirement in past SAC cases.<sup>392</sup> NS states that DuPont's appraiser included comparable sales from 2008 and 2009, including third and fourth quarter sales from 2009, which occurred after the commencement of the DRR's operations.<sup>393</sup> NS argues that post-2007 sales are not reasonable

( . . . continued)

<sup>385</sup> DuPont Rebuttal III-F-5.

<sup>386</sup> DuPont Opening III-F-2.

<sup>387</sup> DuPont Opening III-F-3.

<sup>388</sup> NS Reply III-F-1 to III-F-2.

<sup>389</sup> NS Reply III-F-2.

<sup>390</sup> NS Reply III-F-2.

<sup>391</sup> NS Reply III-F-4.

<sup>392</sup> NS Reply III-F-4 to 5 (citing McCarty Farms v. Burlington N., Inc. (McCarty Farms 1997), 2 S.T.B. 460, 525 n.132 (1997); APS 1997, 2 S.T.B. at 387 n.55).

<sup>393</sup> NS Reply III-F-5.

evidence of the prices the DRR would pay to acquire land in 2007 prior to the commencement of operations.<sup>394</sup> NS argues that this forward-looking sales data results in erroneous numbers because it does not reflect the relevant market data.<sup>395</sup> NS states that including figures from the real-world real estate downturn experienced in later periods underestimates the value of real estate bought prior to the recession and should not be considered.<sup>396</sup>

NS also argues that DuPont's methodology improperly deflated the value of comparable sales from later years to estimate its land valuation during the proposed land acquisition period.<sup>397</sup> NS states that 2006 and early 2007 sales data, which it used for its own estimates, reflect the true value of DRR real estate to be purchased during the appropriate time period, but that DuPont failed to properly index its own acquisition values that were originally set during a market downturn.<sup>398</sup>

NS states that it used the widely accepted comparison approach for the relevant time period to value the DRR's real estate.<sup>399</sup> Using this methodology NS submits costs reflected in the table below.

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<sup>394</sup> NS Reply III-F-5.

<sup>395</sup> NS Reply III-F-6.

<sup>396</sup> NS Reply III-F-6.

<sup>397</sup> NS Reply III-F-6.

<sup>398</sup> NS Reply III-F-7 to III-F-9.

<sup>399</sup> NS Reply III-F-9.

TABLE B-7

| Component of Valuation                   | Acres  | Market Value    | Average Value/Acre      |
|------------------------------------------|--------|-----------------|-------------------------|
| ROW—Fee Simple Value                     | 86,571 | \$4,154,519,000 | \$47,990                |
| Land Value for Yards                     | 6,223  | \$1,302,172,000 | \$209,265               |
| Land Value for Communications Facilities | 586    | \$29,818,000    | \$50,852                |
| Partially Owned Lines                    | 789    | \$140,635,000   | \$178,266               |
| Less: Land Value for Easement Areas      | 9,170  | (\$332,106,000) | (\$36,217)              |
| Plus: Cost for DRR Easement Areas        | 9,170  | \$28,798,000    | \$3,140                 |
| TOTAL VALUATION                          | 94,169 | \$5,323,836,000 | \$56,535 <sup>400</sup> |

On rebuttal, DuPont states that NS has submitted a total base land valuation 36% greater than DuPont's base land valuation.<sup>401</sup> DuPont argues that NS applied a highly mechanized approach that did not apply basic real estate appraisal principles.<sup>402</sup> DuPont argues that NS failed to account for quantity and quality of sales data, failed to consider basic valuation tenets, and applied an analysis technique that resulted in valuations unsupported by sales.<sup>403</sup>

DuPont argues that it followed recognized and appropriate appraisal techniques.<sup>404</sup> DuPont states that NS's figures are inaccurate and should be rejected because NS used an averaging technique that only eliminated sales at the high end of the spectrum.<sup>405</sup> DuPont argues that its application of a July 1, 2009 valuation date is consistent with Board practice and it continues to rely upon its opening evidence as adjusted for additional route miles and yard acres that it added on rebuttal.<sup>406</sup>

The Board will accept NS's land valuation data as the best evidence of record because it provides the best estimate of real estate costs that the DRR would incur. In this instance, the differences between the parties' valuation methodologies are secondary to how they have

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<sup>400</sup> NS Reply III-F-10.

<sup>401</sup> DuPont Rebuttal III-F-6.

<sup>402</sup> DuPont Rebuttal III-F-6.

<sup>403</sup> DuPont Rebuttal III-F-6 to III-F-11.

<sup>404</sup> DuPont Rebuttal III-F-13.

<sup>405</sup> DuPont Rebuttal III-F-13.

<sup>406</sup> DuPont Rebuttal III-F-13 to III-F-14.

accounted for the timing of the DRR's land purchases. While DuPont's approach is generally consistent with Board practice, it did not account for anomalous real estate costs associated with its proposed purchases during a market downturn that did not take place until two years after the DRR would make its land acquisitions. While it is not an approach that the Board has followed in past SAC cases, under these circumstances NS's methodology results in a better (i.e., less skewed) estimation of representative real estate costs.<sup>407</sup> NS's land valuation data is thus more representative of the time period during which the DRR would make its real estate acquisitions and was therefore the best evidence of record.

## B. Roadbed Preparation

TABLE B-8

|                             | DuPont          | NS              | STB             |
|-----------------------------|-----------------|-----------------|-----------------|
| Clearing & Grubbing         | \$84,231,998    | \$127,954,212   | \$127,701,421   |
| Earthwork                   | \$3,247,473,950 | \$5,794,354,032 | \$4,722,681,552 |
| Finish Grading              | \$0             | \$68,592,142    | \$68,592,142    |
| Land for waste quantities   | \$320,124,853   | \$611,364,762   | \$147,067,735   |
| Lateral Drainage            | \$50,086,319    | \$50,086,319    | \$50,086,319    |
| Yard Drainage               | \$0             | \$135,385,380   | \$93,277,503    |
| Retaining Walls             | \$377,273,513   | \$938,032,394   | \$517,206,161   |
| Rip Rap                     | \$36,943,483    | \$36,989,466    | \$36,947,918    |
| Relocation of Utilities     | \$147,136       | \$147,136       | \$147,136       |
| Topsoil Placement / Seeding | \$1,439,739     | \$866,863       | \$866,863       |
| Subgrade Preparation        | \$0             | \$76,476,462    | \$76,476,462    |
| Road Surfacing              | \$523,750       | \$524,265       | \$523,750       |
| Lighting                    | \$0             | \$267,146,016   | \$0             |
| Environmental Compliance    | \$177,345       | \$177,345       | \$177,345       |
| Dust Control                | \$0             | \$7,250,116     | \$0             |
| Winter Costs                | \$0             | \$311,080,798   | \$0             |
| Culvert Cost                | \$217,923,770   | \$746,813,482   | \$248,030,538   |
| TOTAL                       | \$4,336,345,856 | \$9,173,241,189 | \$6,089,782,845 |

<sup>407</sup> As noted in the operating expense appendix, Board practice encourages the use of multi-year data for most estimates to ensure that the integrity of the results is not compromised by atypical observations from any single year. While DuPont's approach in the timing of its comparable land valuations is generally consistent with Board practice, the results are compromised by the atypical time period. The Board does not reject the use of methodologies like DuPont's for land valuations in future SAC cases, absent any unaccounted-for data skewing.

## 1. Trestle Hollow Project

DuPont has developed costs for DRR rail construction, including clearing and grubbing costs, earthwork costs, common excavation, and the need for construction site access. DuPont developed its rail construction costs using costs NS incurred on a realignment project—the rerouting and building of a rail line—in Centerville, Tennessee (the Trestle Hollow Project). DuPont indexed its cost projection to the start date for the DRR construction.<sup>408</sup>

On reply, NS rejects DuPont’s use of the Trestle Hollow Project to develop construction costs for the DRR.<sup>409</sup> NS argues that DuPont “proposes to extrapolate . . . costs from a 1.3 mile railroad line relocation project and then apply those estimates to the entire 7,300 route-mile DRR.”<sup>410</sup> NS states that the Board has in past cases accepted RSMeans (Means)<sup>411</sup> as the authoritative source for earthwork costs.<sup>412</sup> NS argues that Board precedent does not support the use of a “small project on a foreign short-line as the basis for costs of constructing a SARR that purports to replicate the core of a Class I carrier.”<sup>413</sup>

NS also argues that the Trestle Hollow Project is a lump sum bid contract and that there is no discernable link between the contract bid documents and the bid price evidenced in DuPont’s workpapers.<sup>414</sup> NS speculates that because of the alleged inconsistencies between the bid totals and DuPont’s cost-tracker sheet there is no way to determine if total costs were changed for litigation purposes.<sup>415</sup> Furthermore, NS states that it requested discovery on DuPont’s Trestle Hollow Project plan to verify quantities and resolve discrepancies, but that DuPont refused to provide any additional documentation related to the Trestle Hollow Project.<sup>416</sup>

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<sup>408</sup> DuPont Opening I-72. See also DuPont Opening III-F-8 to III-F-15, III-F-22 to III-F-23, III-F-27.

<sup>409</sup> NS Reply I-64 to I-65.

<sup>410</sup> NS Reply III-F-38.

<sup>411</sup> Means is a construction cost publishing and consulting company which annually publishes current, comprehensive construction cost data. Among its many uses, the data is used to estimate construction costs.

<sup>412</sup> NS Reply III-F-38.

<sup>413</sup> NS Reply III-F-40.

<sup>414</sup> NS Reply III-F-42.

<sup>415</sup> NS Reply III-F-42.

<sup>416</sup> NS Reply III-F-42.

On rebuttal, DuPont states that Means is one of many ways to project costs for the construction of a railroad.<sup>417</sup> DuPont argues that Means “does not recognize the economies of scale of large railroad projects such as the DRR which makes costs derived from direct experience (when available) more useful.”<sup>418</sup> DuPont argues that it “used the Trestle Hollow Project unit costs because it was a supportable, feasible and superior real-world substitute for the Means Handbook costs for common earthwork.”<sup>419</sup> DuPont states that its use of the Trestle Hollow Project is no different than the substitution of actual costs for Means costs in the Western Fuels Ass’n v. BNSF Railway (WFA/Basin), NOR 42088 (STB served Sept. 10, 2007), and AEPCO Board decisions.<sup>420</sup>

It its Final Brief, NS argues that DuPont relied upon additional Trestle Hollow Project documents on rebuttal that it withheld from NS.<sup>421</sup> NS states that on opening, DuPont relied upon a one-page summary to support its Trestle Hollow Project cost assumptions.<sup>422</sup> NS states that it requested additional documentation including “actual construction invoices and payment records.”<sup>423</sup> NS maintains that DuPont produced no additional documents while stating in communications to NS “[it] has provided all of the workpapers that are the basis for its road property investment quantities and costs.”<sup>424</sup> NS argues that despite this statement DuPont’s rebuttal relied upon an additional, and previously undisclosed, detailed construction contractor invoice, which it used to rebut the assertion that its Trestle Hollow Project costs were unsupported.<sup>425</sup> NS argues that DuPont’s reliance upon this additional document is a violation of the Board’s rebuttal evidence standard because it was improperly withheld in discovery. For these reasons, NS states the Board should reject the additional evidence.<sup>426</sup>

The Board will reject DuPont’s proposed use of the Trestle Hollow Project unit costs as a benchmark for the DRR’s costs because DuPont did not demonstrate that the costs realized on a 1.3 mile rail line relocation project in Tennessee were representative of the costs the DRR would

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<sup>417</sup> DuPont Rebuttal III-F-15.

<sup>418</sup> DuPont Rebuttal III-F-16.

<sup>419</sup> DuPont Rebuttal III-F-27.

<sup>420</sup> DuPont Rebuttal III-F-27.

<sup>421</sup> NS Final Brief 119.

<sup>422</sup> NS Final Brief 119.

<sup>423</sup> NS Final Brief 119 to 120.

<sup>424</sup> NS Final Brief 120.

<sup>425</sup> NS Final Brief 120.

<sup>426</sup> NS Final Brief 121.



incur in constructing a 7,300 mile, multi-state railroad. As NS argues, and we agree, the size, scope, and geographic and topographic diversity of the DRR make the use of Means more appropriate than the extrapolation of costs from a single project. In the absence of a fully supported “real-world substitute,” which under these circumstances would likely require more than one estimate to avoid potential aberrations, the Means costs proposed by NS are the best evidence of record. Accordingly, the Board need not reach a conclusion about NS’s discovery concerns.

## 2. Clearing, Grubbing, and Stripping

### a. Clearing and Grubbing

DuPont submits clearing and grubbing quantities based upon the ICC Engineering Reports submitted with its evidence.<sup>427</sup> DuPont then applied the Trestle Hollow Project’s unit costs estimates for clearing and grubbing.<sup>428</sup> The 2007 cost for “clearing and grubbing of all trees, stumps, undergrowth, bush, trash, grass, weeds, roots, debris, or other deleterious or objectionable materials” was \$2,000 per acre.<sup>429</sup> “DuPont then indexed the 2007 unit costs to June 2009, the start date of the DRR.”<sup>430</sup> DuPont’s indexed unit cost for clearing and grubbing is \$2,111 per acre.<sup>431</sup>

NS rejects DuPont’s clearing and grubbing costs.<sup>432</sup> NS asserts that DuPont failed to submit separate unit costs for clearing and grubbing, as has been done in past cases.<sup>433</sup> NS states that “the Trestle Hollow project is not comparable in scale, scope, topography, rock and soil conditions, and other diverse conditions to the areas traversed by the expansive DRR system.”<sup>434</sup> NS argues that DuPont’s opening workpapers show it developed separate alternative costs for clearing and grubbing utilizing Means.<sup>435</sup> NS further states that the costs developed using Means

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<sup>427</sup> DuPont Opening III-F-8.

<sup>428</sup> DuPont Opening III-F-8.

<sup>429</sup> DuPont Opening III-F-8.

<sup>430</sup> DuPont Opening III-F-8 to III-F-9.

<sup>431</sup> DuPont Opening III-F-9.

<sup>432</sup> NS Reply III-F-52.

<sup>433</sup> NS Reply III-F-52 (noting that separate costs have been submitted for those acres containing trees that require both the clearing of trees and the grubbing of stumps and those acres without trees that require only light clearing to remove and dispose of bush.)

<sup>434</sup> NS Reply III-F-52.

<sup>435</sup> NS Reply III-F-52.

are 10% higher than those derived from using the Trestle Hollow Project and that DuPont has failed to submit evidence that the Trestle Hollow Project costs are representative of the costs incurred by the construction of the DRR.<sup>436</sup> Based upon DuPont's workpapers, NS submits separate unit cost of \$5,135<sup>437</sup> per acre for clearing and grubbing, \$3,130 per acre for grubbing only, and \$1,281.90 per acre for clearing. Because, as discussed above, the Board is rejecting DuPont's use of the Trestle Hollow Project as a basis for establishing unit costs for the construction of the DRR, the Board will accept NS's clearing and grubbing costs.

The parties agree on certain aspects of clearing and grubbing quantities, but differ in their total estimates due to differences in route miles and track, as well as unit costs.<sup>438</sup> The Board is accepting NS's system configuration, and will therefore also accept NS's route miles and track estimates for clearing and grubbing quantities.

**b. Culverts**

On opening, DuPont states that all culverts it proposes for use by the DRR are able to withstand railroad loads of 286,000 pounds per car.<sup>439</sup> DuPont proposes using culverts to replace all bridges that are less than 20 feet in length if that bridge crosses a waterway.<sup>440</sup>

**i. Culvert Unit Costs**

The parties have agreed on transportation costs, the weight of culverts, and some unit costs, and the Board will accept the parties' agreements. As discussed above, the Board will reject all unit costs based upon the Trestle Hollow Project as a basis for estimating unit costs in this case. Accordingly, with respect to those unit costs on which the parties have not agreed, the Board accepts NS's unit costs for culverts as the best evidence of record.

**ii. Culvert Installation Plans**

DuPont states on opening that all culverts will be placed during the early stages of preparation of the roadbed subgrade and that minimum excavation is necessary using the open

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<sup>436</sup> NS Reply III-F-53.

<sup>437</sup> NS's narrative and workpaper evidence differ. The Board will use NS's workpaper cost evidence of \$5131.54 per acre for clearing and grubbing and \$3,129.55 per acre for grubbing only.

<sup>438</sup> Compare NS Reply III-F-52 with DuPont Rebuttal III-F-29.

<sup>439</sup> DuPont Opening III-F-18.

<sup>440</sup> DuPont Opening III-F-18.

trench installation method.<sup>441</sup> DuPont states that installation requires a trench one foot wider than the culvert width with a bottom excavation covered with 12" of crushed stone bedding.<sup>442</sup> DuPont states that once the culvert piping is laid the area is backfilled.<sup>443</sup> DuPont states the work production of the crews for culvert installation is consistent with its proposed construction schedule.<sup>444</sup>

On reply, NS states that DuPont incorrectly calculated installation quantities and that trench dimensions are conflicting and confusing.<sup>445</sup> NS argues that DuPont's trench width evidence varies from one to two feet and that as a result; NS will accept a trench width two feet wider than the culvert.<sup>446</sup> NS also argues that DuPont's trench depth varies from one to two feet and that as a result; NS will accept a trench depth of two feet.<sup>447</sup> NS states that it makes corrections in the evidence to reflect these changes.<sup>448</sup>

On rebuttal, DuPont states that it has made the necessary corrections to trench width and height and that it accepts NS's other modifications.<sup>449</sup> The parties have agreed on culvert installation plans, and the Board will accept the parties' agreements.

### **iii. Culvert Quantities**

On opening, DuPont states that it developed culvert quantities from information provided in discovery.<sup>450</sup> DuPont states that it excluded all culverts less than 20 feet because culverts of this length would not span the width of the roadbed, and therefore DuPont only included culverts that would provide drainage.<sup>451</sup> DuPont argues that in many instances the information provided

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<sup>441</sup> DuPont Opening III-F-19.

<sup>442</sup> DuPont Opening III-F-19.

<sup>443</sup> DuPont Opening III-F-19.

<sup>444</sup> DuPont Opening III-F-19.

<sup>445</sup> NS Reply III-F-97.

<sup>446</sup> NS Reply III-F-98.

<sup>447</sup> NS Reply III-F-98.

<sup>448</sup> NS Reply III-F-98.

<sup>449</sup> DuPont Rebuttal III-F-59.

<sup>450</sup> DuPont Opening III-F-20.

<sup>451</sup> DuPont Opening III-F-20.

in discovery did not include any culvert length data, and that it assumed culvert lengths will be set in accordance with the standard roadbed widths.<sup>452</sup>

NS rejects DuPont's substitution of culverts for bridges because it is infeasible in many instances.<sup>453</sup> NS states that DuPont seeks to convert approximately 1,500 bridges into CMP culverts and that approximately 300 of these bridges are over automobile roads, which prevent the use of a culvert.<sup>454</sup> Furthermore, NS states that approximately 1,170 of those bridges are concrete box culverts and circulation storm sewers and that DuPont's conversion of these bridges to culverts is riddled with errors.<sup>455</sup> NS argues that replacing bridges and box culverts with CMP carrying an equivalent water flow is more expensive than using a simple span bridge.<sup>456</sup> NS rejects the use of a CMP culvert where the replacement exceeds the costs of a replacement in kind.<sup>457</sup>

NS argues that DuPont has incorrectly assumed that a CMP culvert of the same diameter as reinforced concrete pipe (RCP), ductile iron, or other material would carry the same flow.<sup>458</sup> NS states that it is widely accepted in the industry that one RCP must be replaced by two CMP culverts of the same size and shape.<sup>459</sup> NS determined that a reasonable simplification to determine flow of the existing pipe is to assume the pipe is flowing full and the slopes for the existing and proposed culverts are based on the minimum velocity needed to keep the pipe clean, 3 feet per second.<sup>460</sup> NS then determined the equivalent number of CMPs needed to achieve the same flow.<sup>461</sup> Because the top of culvert pipe is typically placed at the calculated flood level, the proposed replacement pipes must be the same height as the existing pipe to ensure pipes are flowing full. NS has revised DuPont's culvert spreadsheet to calculate the required additional pipe quantity.<sup>462</sup>

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<sup>452</sup> DuPont Opening III-F-20.

<sup>453</sup> NS Reply III-F-100.

<sup>454</sup> NS Reply III-F-100.

<sup>455</sup> NS Reply III-F-101.

<sup>456</sup> NS Reply III-F-103.

<sup>457</sup> NS Reply III-F-103.

<sup>458</sup> NS Reply III-F-104.

<sup>459</sup> NS Reply III-F-104.

<sup>460</sup> NS Reply III-F-105.

<sup>461</sup> NS Reply III-F-105.

<sup>462</sup> NS Reply III-F-105 to III-F-106.

NS states that it corrects numerous errors in DuPont's workpapers regarding the number of sections of a pipe with the number of barrels in a culvert.<sup>463</sup> NS argues that DuPont failed to provide culvert inlet protection during construction.<sup>464</sup> NS submits a total cost of \$3,360,973 to provide for silt fences at culvert outlets.<sup>465</sup>

On rebuttal, DuPont states that it has made several modifications to culvert quantities in response to NS's critiques.<sup>466</sup> DuPont has removed from the culvert list any bridges that are less than 20 feet and span an automobile road, and, instead, constructed bridges at those locations.<sup>467</sup> DuPont accepts NS's modifications to the number and size of CMP culverts and its inclusion of costs for replacement in kind when CMP costs exceeded the replacement costs.<sup>468</sup> DuPont also accepts NS's inclusion of culverts shorter than 20 feet when they are extensions of pipe.<sup>469</sup> DuPont argues that NS has overstated the length of 50 culverts by thousands of feet each.<sup>470</sup> DuPont states that this overstatement results in a \$499 million overstatement of culvert costs.<sup>471</sup>

The Board will accept DuPont's culvert quantities submitted on rebuttal because DuPont has incorporated NS's corrections and DuPont's evidence does not contain overstated lengths on 50 culverts.

#### **iv. Total Culvert Costs**

On opening DuPont submits a total cost of \$131.6 million for culverts.<sup>472</sup> On reply, NS submits a total cost for culverts of \$800 million.<sup>473</sup> On rebuttal, DuPont submits a revised total culvert cost of \$218 million.<sup>474</sup>

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<sup>463</sup> NS Reply III-F-106 to III-F-107.

<sup>464</sup> NS Reply III-F-107.

<sup>465</sup> NS Reply III-F-107.

<sup>466</sup> DuPont Rebuttal III-F-60.

<sup>467</sup> DuPont Rebuttal III-F-60.

<sup>468</sup> DuPont Rebuttal III-F-60.

<sup>469</sup> DuPont Rebuttal III-F-60.

<sup>470</sup> DuPont Rebuttal III-F-60.

<sup>471</sup> DuPont Rebuttal III-F-60.

<sup>472</sup> DuPont Opening III-F-20.

<sup>473</sup> NS Reply III-F-107.

<sup>474</sup> DuPont Rebuttal III-F-61.

The Board will accept DuPont's revised quantities for culverts as stated in its rebuttal evidence. The Board will accept NS's costs for those culvert components, materials, and installation costs where DuPont relied on costs from the Trestle Hollow Project. For all other components, materials, installation costs, and installation plans, the Board accepts the parties agreed to quantities and costs.

**c. Drainage**

**i. Lateral Drainage**

The parties agree on quantities and costs for lateral drainage, and we accept the parties' agreement.

**ii. Yard Drainage**

On opening, DuPont included minimal yard drainage facilities for each of the DRR's six major yards.<sup>475</sup> DuPont states that prior to the installation of drainage facilities, the roadbed for the yard track will be constructed to slope away from the mainline and storm water will drain freely through the ballast and be collected in ditch lines located on the perimeter of the yards.<sup>476</sup> DuPont states that yard drainage will cost \$6.4 million for catch basins and \$22.3 million for drainage pipe, both of which are included in the yard building site development costs.<sup>477</sup>

NS argues that DuPont did not include sufficient cost estimates for yard drainage structures.<sup>478</sup> NS developed unit costs of \$16.66 per linear foot of yard track for drainage structures.<sup>479</sup> This unit cost was derived from bid cost data from new construction of drainage infrastructure at the expanded NS yard in Bellevue, Ohio.<sup>480</sup> NS's engineering experts divided total drainage costs at the Bellevue Yard by the approximate length of new track constructed to produce a cost per linear track foot.<sup>481</sup> This cost per linear foot includes typical items in yard

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<sup>475</sup> DuPont Opening III-F-18.

<sup>476</sup> DuPont Opening III-F-18.

<sup>477</sup> DuPont Opening III-F-18.

<sup>478</sup> NS Reply III-F-94.

<sup>479</sup> NS Reply III-F-94. See also NS Reply WP "Bellevue Class Yard Drainage.pdf," NS Reply WP "NS Bellevue Drainage Unit Costs.pdf," NS Reply WP "NS Yard Drainage Cal.xls."

<sup>480</sup> NS Reply III-F-94.

<sup>481</sup> NS Reply III-F-94.

drainage systems such as multi-diameter drainage pipe, catch basins, and excavation and construction costs.<sup>482</sup>

On rebuttal, DuPont increased its yard drainage costs from \$28.7 million to \$29.3 million to reflect the increased size of the DRR's six major yards.<sup>483</sup> For the remaining DRR yards, DuPont maintains that drainage can be accounted for by properly sloping the yard track roadbed, which will allow the water to run off through the ballast and into ditches.<sup>484</sup> DuPont argues that NS has failed to show that the drainage structures are needed for every foot of DRR yard track or that such structures are utilized in NS yards.<sup>485</sup>

The Board will accept DuPont's revised yard drainage unit costs as they apply to the six major DRR yards. The Board will also accept NS's unit costs as they apply to the remaining DRR yards. As NS notes, DuPont's proposed drainage methodology for the DRR's remaining yards is not sufficient and does not meet industry construction standards or best practices. In particular, DuPont's plan of employing water drainage through ballast is not the correct way to transfer runoff to ditches, as water deteriorates track and roadbed—water should be drained away from the tracks, not through them. Thus, DuPont's approach can lead to track instability. DuPont has failed to submit cost estimates for appropriate methods of yard drainage at the DRR's remaining yards. Because of this, the Board will accept NS's unit cost estimates for yard drainage at those remaining yards as the best evidence of record.

**d. Sideslopes**

The parties agree on an average sideslope ratio of 1.5:1, and the Board will accept the parties' agreement.

**e. Ditches**

The parties agree on the specification of ditches in trapezoidal sections with cuts two feet wide and two feet deep for all locations, and the Board will accept the parties' agreement.

**f. Dust Control**

On opening, DuPont did not address the issue of dust control. NS contends that dust control is part of established erosion control practices which include mulch, vegetation

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<sup>482</sup> NS Reply III-F-94.

<sup>483</sup> DuPont Rebuttal III-F-58.

<sup>484</sup> DuPont Rebuttal III-F-57.

<sup>485</sup> DuPont Rebuttal III-F-57.

minimization of soil disturbance, binding agents, and water spraying.<sup>486</sup> NS states that when applied these practices can prevent air and water pollution.<sup>487</sup> NS cites the United States Environmental Protection Agency's Storm Water Management Fact Sheet Dust Control document EPA 832-F-99-003 and Natural Resources Conservation Service's Code 373 which require the use of dust control practices during construction on unpaved roads and surfaces.<sup>488</sup> NS contends the use of water spraying crews will be sufficient to control the dust created during construction of the DRR.<sup>489</sup> NS submits an additional \$7,250,116 to account for the additional crews necessary to perform dust control.<sup>490</sup>

On rebuttal, DuPont argues that NS is submitting a new cost item that has never been presented in a SAC proceeding. DuPont states that it has included costs on opening for environmental compliance and NS has accepted those costs in reply.

As a practice in SAC cases, the Board excludes environmental mitigation requirements unless the defendant can demonstrate that it has actually incurred those costs in construction. Here, NS has failed to demonstrate that it actually incurred the cost of these dust control measures that it recommends. Therefore, the Board will reject NS's additional costs for dust control.

**g. Earthwork**

**i. Quantities**

The parties agree on the valuation sections contained in the ICC Engineering Reports that depict the DRR route, the adjustment of the ICC Engineering Reports' quantities to reflect modern construction standards, and DuPont's roadbed widths. The Board will accept the parties' agreements on the per mile quantities of earthwork per mile for each of the valuation sections required for the DRR. The Board will use NS's total quantities because the Board has accepted NS's system configuration. With respect to those entities partially owned by NS, the Board will accept those additional NS supplied quantities of earthworks, for the BRC and TRRA, as discussed in this decision, which the DRR will be required to include in its construction of the DRR owned system as configured by NS.

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<sup>486</sup> NS Reply III-F-116.

<sup>487</sup> NS Reply III-F-116.

<sup>488</sup> NS Reply III-F-116.

<sup>489</sup> NS Reply III-F-117.

<sup>490</sup> NS Reply III-F-117.



On opening, DuPont utilized the ICC Engineering Reports to develop earthwork quantities for each valuation section of the DRR.<sup>491</sup> DuPont then adjusted the quantities to reflect current roadbed specifications.<sup>492</sup> These adjusted quantities were then used to develop the earthwork requirements and the costs for the DRR.<sup>493</sup> The DRR has six major yards and several lesser yards. For each yard, DuPont calculated the grading requirements based on an assumed average fill height of one foot and 25-foot track centers.<sup>494</sup>

On reply, NS rejects DuPont's earthwork quantities and argues that while the general methodology is acceptable in theory, that DuPont made several errors.<sup>495</sup> NS argues that DuPont put in erroneous common earthwork excavation quantities for five valuation sections, and incorrect solid rock excavation quantities for two valuation sections, and did not include quantities for DRR segments in which NS had a partial ownership interest.<sup>496</sup> NS also rejected 45 of DuPont's proposed yards, consolidated eight separate proposed yards into four, while adding 120 yard facilities to the DRR.<sup>497</sup> NS accepts the one-foot fill height per yard track mile.<sup>498</sup>

On rebuttal, DuPont accepts some but not all of NS's corrections.<sup>499</sup> DuPont argues that NS introduced additional errors when it made its corrections to DuPont's opening evidence.<sup>500</sup> DuPont states that it addresses each of NS's input errors and correction methods in its rebuttal workpapers.<sup>501</sup> DuPont states that the parties also disagree on the route and track miles for the DRR and that this difference is a result of NS's inclusion of partially owned lines, which, according to DuPont, the DRR will not build.<sup>502</sup> With respect to DRR yard earthwork quantities, DuPont argues that NS calculated the quantities based upon the entire square footage of the

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<sup>491</sup> DuPont Opening III-F-9.

<sup>492</sup> DuPont Opening III-F-9.

<sup>493</sup> DuPont Opening III-F-9.

<sup>494</sup> DuPont Opening III-F-11.

<sup>495</sup> NS Reply III-F-56 to III-F-57.

<sup>496</sup> NS Reply III-F-57 to III-F-58.

<sup>497</sup> NS Reply III-F-57.

<sup>498</sup> NS Reply III-F-58.

<sup>499</sup> DuPont Rebuttal III-F-31.

<sup>500</sup> DuPont Rebuttal III-F-31 to III-F-32.

<sup>501</sup> DuPont Rebuttal III-F-32.

<sup>502</sup> DuPont Rebuttal III-F-33.

facility rather than just track feet.<sup>503</sup> DuPont argues that any excavation for non-track area quantities would result in a double-count of excavation quantities because they are included in the building and facility costs.<sup>504</sup>

The Board will accept NS's earthwork quantities with adjustments to exclude the partially owned facilities IHB and SAA, because the Board accepts NS's operating plan which will dictate the system configuration and the associated items to be replicated. As the parties agree on the valuation sections which depict the DRR route, the adjustment of the ICC Engineering Reports' quantities to reflect modern construction standards, and DuPont's roadbed widths, the Board will accept the parties' agreements. The Board will use NS's per-mile quantities and total quantities because we use NS's system configuration. With respect to those entities partially owned by NS, the Board will accept those additional NS supplied quantities while rejecting those of the entities deemed not to be partially owned by NS.

## **ii. Unit Costs**

On opening, DuPont utilized a combination of actual unit costs realized in the Trestle Hollow Project, which were indexed to 2009, and Means to develop the earthwork costs.<sup>505</sup> Because the Board is rejecting the Trestle Hollow Project as a basis for estimating costs for the DRR, we will accept NS's earthwork unit costs as the best evidence of record.

### **1. Common Earthwork**

DuPont states that in previous SAC cases earthwork excavation unit costs have been based upon Means.<sup>506</sup> DuPont argues that Means is conservative as they are based on the average costs of projects of all sizes from around the country without giving consideration to the economies of scale that the DRR would benefit from because of its size.<sup>507</sup> DuPont's engineers utilized Means to develop a common unit excavation cost.<sup>508</sup> DuPont also identified those areas in which the DRR would traverse adverse terrain and developed an additional common excavation cost for adverse areas.<sup>509</sup> Notwithstanding its expert's use of Means to estimate

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<sup>503</sup> DuPont Rebuttal III-F-33.

<sup>504</sup> DuPont Rebuttal III-F-33. There is not a double-count of excavation quantities, because neither party included excavation quantities in building and facility costs.

<sup>505</sup> DuPont Opening III-F-9.

<sup>506</sup> DuPont Opening III-F-12.

<sup>507</sup> DuPont Opening III-F-12.

<sup>508</sup> DuPont Opening III-F-12.

<sup>509</sup> DuPont Opening III-F-12 to III-F-13.

common excavation costs, DuPont contends the common unit excavation costs for the DRR would be the actual unit costs from the Trestle Hollow Project, and when indexed to 2009 were \$1.74 per CY.<sup>510</sup> According to DuPont, “[t]his unit cost includes all necessary work to prepare the roadbed for the placement of subballast, the handling of waste and hauling it to off-site locations as needed, as well as costs associated with any water for compaction that might be necessary.”<sup>511</sup> In adverse areas, DuPont utilized the ratio between Means costs under ideal conditions and costs under adverse conditions to adjust the unit costs developed from the Trestle Hollow Project.<sup>512</sup> In areas with adverse conditions, DuPont submits a unit cost of \$2.15 per CY.<sup>513</sup>

On reply, NS rejects DuPont’s unit costs for earthwork.<sup>514</sup> NS states that DuPont’s unit costs contain an implicit assumption regarding the length of haul for materials excavated and loaded into vehicles for transportation to embankment or dumping pits.<sup>515</sup> NS argues that DuPont has selected from Means hauler unit prices based on a round trip of only one-half mile or 2,640 feet.<sup>516</sup> NS contends that this number is unsupported and produces “unachievable efficiencies that artificially lower earthwork construction costs.”<sup>517</sup> NS argues that a more realistic and efficient choice is to develop haulage costs consistent with the common excavation cost assumptions and therefore selects costs for a 1-mile haulage cycle.<sup>518</sup> NS adopts this approach in restating DuPont’s Means based excavation costs.<sup>519</sup>

NS rejects the unit costs for common excavation based upon the Trestle Hollow Project.<sup>520</sup> NS argues that Means develops costs from real world costs of large construction projects.<sup>521</sup> NS further argues that the Board has long accepted Means as an authoritative source

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<sup>510</sup> DuPont Opening III-F-14 to III-F-15.

<sup>511</sup> DuPont Opening III-F-14 to III-F-15.

<sup>512</sup> DuPont Opening III-F-15.

<sup>513</sup> DuPont Opening III-F-15.

<sup>514</sup> NS Reply III-F-56 to III-F-57.

<sup>515</sup> NS Reply III-F-60.

<sup>516</sup> NS Reply III-F-60.

<sup>517</sup> NS Reply III-F-60.

<sup>518</sup> NS Reply III-F-60.

<sup>519</sup> NS Reply III-F-60.

<sup>520</sup> NS Reply III-F-61.

<sup>521</sup> NS Reply III-F-61.

and cites *Carolina Power & Light Co. v. Norfolk Southern Railway (CP&L)*, 7 S.T.B. 235, 310 (2003).<sup>522</sup> NS asserts that DuPont developed a common excavation cost for non-adverse terrain for the entire DRR based upon Means, which it supplied in its opening workpapers but did not use for its final costs calculations.<sup>523</sup> NS accepts this Means based cost for the DRR and applied it to the common excavation quantities to develop its common excavation costs.<sup>524</sup>

NS agrees with DuPont's identification of DRR routes that traverse adverse terrain.<sup>525</sup> NS's engineering experts also identified seven additional routes that they believe should be classified as adverse.<sup>526</sup> NS also rejects DuPont's unit costs for common excavation in adverse terrain.<sup>527</sup> NS argues that the Trestle Hollow Project DuPont utilized to develop the adverse terrain unit costs did not involve any adverse conditions, making it impossible to derive common excavation costs in adverse terrain from the project.<sup>528</sup> NS states that DuPont developed separate adverse terrain unit costs in its workpapers based on Means, but did not use it in its final costs calculations.<sup>529</sup> NS accepts the Means unit costs for common excavation in adverse terrain with one modification.<sup>530</sup> NS rejects DuPont's use of a 42-CY hauler in adverse terrain conditions.<sup>531</sup> NS argues that the 42-CY hauler is extremely large and mainly used in quarries and other large earthwork projects.<sup>532</sup> NS argues that they are not used in narrow linear roadbed projects.<sup>533</sup> NS replaces the 42-CY haulers with 22-CY haulers and maintains its use of a one-mile roundtrip distance.<sup>534</sup> NS claims "the physical size and loaded weight of the 22-CY hauler would allow trucks to pass on a 24-foot wide roadbed, and pass over culverts with as little as one-foot of cover and its smaller size and better maneuverability is better suited to adverse grades."<sup>535</sup> NS

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<sup>522</sup> NS Reply III-F-61.

<sup>523</sup> NS Reply III-F-61.

<sup>524</sup> NS Reply III-F-61 to III-F-62.

<sup>525</sup> NS Reply III-F-63.

<sup>526</sup> NS Reply III-F-63 to III-F-64.

<sup>527</sup> NS Reply III-F-64.

<sup>528</sup> NS Reply III-F-64.

<sup>529</sup> NS Reply III-F-64.

<sup>530</sup> NS Reply III-F-65.

<sup>531</sup> NS Reply III-F-65.

<sup>532</sup> NS Reply III-F-65.

<sup>533</sup> NS Reply III-F-65.

<sup>534</sup> NS Reply III-F-67.

<sup>535</sup> NS Reply III-F-67 to III-F-68.

argues that the 22-CY haulers would achieve a 99% efficiency rating based upon Means.<sup>536</sup> NS submits a unit cost for common excavation in adverse terrain of \$9.50 per cubic yard.<sup>537</sup>

On rebuttal, DuPont continues to use its common excavation unit costs submitted on opening.<sup>538</sup> DuPont notes that NS relied upon its opening evidence submission of workpapers which utilized Means to develop unit costs for both common and adverse terrain excavation.<sup>539</sup> DuPont states that it developed these Means based costs only to develop the ratio used to adjust the Trestle Hollow Project unit costs to reflect work in adverse terrain.<sup>540</sup> DuPont contends that certain aspects of the Trestle Hollow Project were adverse, and that NS criticism misses the point.<sup>541</sup> DuPont argues that it developed the Means ratio to increase the cost of the Trestle Hollow Project so that it would be representative of the costs the DRR would realize in adverse terrain.<sup>542</sup> DuPont maintains that its use of a ratio to determine adverse terrain unit cost is valid and that ratios are commonly used.<sup>543</sup> DuPont contends that its “methodology simply recognizes the relationship between adverse and normal conditions established in prior cases.”<sup>544</sup>

DuPont argues that NS has made several adjustments to the Means unit costs for common earthwork in adverse terrain.<sup>545</sup> DuPont states that NS increased the distance the haulers would have to travel from one half mile to a full mile.<sup>546</sup> DuPont argues that NS has not provided any evidence that the distances used by DuPont to develop unit costs are unreasonable.<sup>547</sup> DuPont contends that NS is artificially attempting to increase the DRR’s earthwork costs and that it is the first time such an issue has been raised in a SAC proceeding.<sup>548</sup> DuPont rejects NS’s distance

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<sup>536</sup> NS Reply III-F-68.

<sup>537</sup> NS Reply III-F-68.

<sup>538</sup> DuPont Rebuttal III-F-35.

<sup>539</sup> DuPont Rebuttal III-F-35.

<sup>540</sup> DuPont Rebuttal III-F-35 n.67.

<sup>541</sup> DuPont Rebuttal III-F-36.

<sup>542</sup> DuPont Rebuttal III-F-36.

<sup>543</sup> DuPont Rebuttal III-F-37.

<sup>544</sup> DuPont Rebuttal III-F-37.

<sup>545</sup> DuPont Rebuttal III-F-37.

<sup>546</sup> DuPont Rebuttal III-F-37.

<sup>547</sup> DuPont Rebuttal III-F-37.

<sup>548</sup> DuPont Rebuttal III-F-37 to III-F-38.

adjustment.<sup>549</sup> DuPont states that NS has also increased earthwork costs to reflect swell factors.<sup>550</sup> DuPont rejects NS's adjustments and addresses the merits of the argument in the Swell section discussed below.<sup>551</sup> DuPont also rejects NS's adjustments to add finished grading costs and addresses the merits of the argument in the Fine Grading section discussed below.<sup>552</sup> DuPont agrees with NS's assertion that a 42-CY hauler cannot be used for excavation in certain situations, but rejects NS's argument that it cannot be used for part of the construction.<sup>553</sup> DuPont contends that NS included a workpaper which demonstrates that a 42-CY hauler is practical for half of the construction process and that NS uses a 50/50 mix of 22- and 42-CY haulers for loose rock and solid rock hauling of material.<sup>554</sup> DuPont continues to use its opening methodology for calculating common earthwork unit costs for adverse terrain.<sup>555</sup> DuPont's adjustment ratio increased from 1.24 on opening to 1.32 on rebuttal to reflect the 50/50 use of 22- and 42-CY haulers.<sup>556</sup>

Because the Board is rejecting the use of the Trestle Hollow Project, we will accept NS's costs and quantities for common earthwork and earthwork in adverse terrain. The Board will accept DuPont's 50/50 mixed use of 22- and 42-CY haulers for loose rock because DuPont demonstrated that NS's workpapers used a 50/50 mix of 22- and 42-CY haulers. The Board will also accept DuPont haulage distances because NS's haulage distances were unsupported.

## **2. Loose Rock Excavation**

On opening, DuPont states that "loose rock excavation is a category in the ICC Engineering Reports that does not have a counterpart in today's railroad construction environment."<sup>557</sup> DuPont contends that modern railroads use the categories of common (or unclassified) and solid rock to determine contract unit costs.<sup>558</sup> DuPont states that it is being extremely conservative by applying separate loose rock costs to loose rock excavation rather

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<sup>549</sup> DuPont Rebuttal III-F-38.

<sup>550</sup> DuPont Rebuttal III-F-38.

<sup>551</sup> DuPont Rebuttal III-F-38.

<sup>552</sup> DuPont Rebuttal III-F-38.

<sup>553</sup> DuPont Rebuttal III-F-38.

<sup>554</sup> DuPont Rebuttal III-F-38.

<sup>555</sup> DuPont Rebuttal III-F-39.

<sup>556</sup> DuPont Rebuttal III-F-39.

<sup>557</sup> DuPont Opening III-F-15.

<sup>558</sup> DuPont Opening III-F-15.

than including it with the common excavation quantities.<sup>559</sup> DuPont bases its loose rock excavation unit costs on the use of two 300-HP dozers for removing the loose rock and pushing it into piles, a 3-CY power shovel placing the rock in a truck (including a Means 15% additive), a 42-CY hauler, and a dozer to spread the material after it is dumped.<sup>560</sup> DuPont submits unit costs for loose rock excavation of \$10.25 per CY and \$10.52 per CY in adverse terrain.<sup>561</sup>

NS accepts DuPont's use of Means as the source for loose rock excavation costs.<sup>562</sup> NS rejects the uniform use of a 42-CY hauler and developed a hauler combination that its experts considered more reasonable.<sup>563</sup> NS relies upon the same reasoning it put forth in rejecting DuPont's uniform use of a 42-CY hauler for use in common and adverse earthwork, discussed above.<sup>564</sup> NS accepts the use of 42-CY haulers where it considers them practical, because the Board has approved their use in prior SAC cases.<sup>565</sup> Utilizing the rationale established in common and adverse earthwork, NS has determined that a 48/52% split for the 42- and 22-CY haulers is more realistic for the construction of the DRR in non-adverse loose rock excavation.<sup>566</sup> Applying this split, NS corrected DuPont's low haul cycle assumption, as discussed above, and calculated a unit cost of \$13.01 per CY.<sup>567</sup>

On reply, NS rejects DuPont's loose rock excavation quantities in adverse terrain and made adjustments that moved quantities for these segments out of the general loose rock excavation into adverse loose rock excavation quantities.<sup>568</sup> NS also rejects DuPont's adverse loose rock excavation unit costs due to its use of the 42-CY haulers.<sup>569</sup> NS replaces the 42-CY

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<sup>559</sup> DuPont Opening III-F-15.

<sup>560</sup> DuPont Opening III-F-15.

<sup>561</sup> DuPont Opening III-F-16.

<sup>562</sup> NS Reply III-F-68.

<sup>563</sup> NS Reply III-F-68 to III-F-69.

<sup>564</sup> NS Reply III-F-69.

<sup>565</sup> NS Reply III-F-69.

<sup>566</sup> NS Reply III-F-69.

<sup>567</sup> NS Reply III-F-70.

<sup>568</sup> NS Reply III-F-70.

<sup>569</sup> NS Reply III-F-70.

haulers with a 22-CY hauler and a one-mile round trip haul.<sup>570</sup> Utilizing Means, NS submits a unit cost of \$11.32 for loose rock excavation in adverse terrain.<sup>571</sup>

On rebuttal, DuPont notes that NS made modifications to increase the haul distance, included a swell additive and finish grading costs, and modified the hauler size to reflect a 50/50 split between 42-CY and 22-CY haulers.<sup>572</sup> DuPont rejects the increase in hauling distance.<sup>573</sup> While DuPont has accepted the split between the two hauler sizes for common loose rock excavation, it rejects the swell additive and finish grading costs.<sup>574</sup> For loose rock excavation, DuPont notes the NS has made the same four modifications, except that it requires use of a 22-CY hauler for 100% of the excavation.<sup>575</sup> DuPont maintains the same response as in common loose rock excavation but modifies its opening evidence to reflect a 50/50 split between the 42-CY and 22-CY haulers.<sup>576</sup>

The Board will accept DuPont's revised unit costs for loose rock excavation in common and adverse terrain. DuPont's reliance on a 50/50 split between the 22- and 42-CY haulers is a feasible approach for use in these circumstances, and, as DuPont points out, NS's workpapers used a 50/50 mix of 22- and 42-CY haulers. We also agree with DuPont's conclusion that it is unnecessary to increase the haulage distances as recommended by NS, as NS has not provided support for this increase.

### 3. Solid Rock Excavation

DuPont bases its unit costs for solid rock blasting on the average of Means cost for blasting rock over 1,500 cubic yards and the cost for bulk drilling and blasting.<sup>577</sup> DuPont then adds the costs to excavate the blasted rock and load it into trucks for hauling and dumping.<sup>578</sup> It also uses the costs to spread the material, and the average compaction cost for embankment that was used in other earthwork categories.<sup>579</sup> DuPont uses a 50/50 combination unit costs from

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<sup>570</sup> NS Reply III-F-70.

<sup>571</sup> NS Reply III-F-70.

<sup>572</sup> DuPont Rebuttal III-F-39.

<sup>573</sup> DuPont Rebuttal III-F-39.

<sup>574</sup> DuPont Rebuttal III-F-39.

<sup>575</sup> DuPont Rebuttal III-F-40.

<sup>576</sup> DuPont Rebuttal III-F-40.

<sup>577</sup> DuPont Opening III-F-16.

<sup>578</sup> DuPont Opening III-F-16.

<sup>579</sup> DuPont Opening III-F-16.



solid rock and loose rock and assumes that half of the quantities classified by the ICC Engineering Reports as solid rock would be rippable (and therefore classified as loose rock or common excavation ) with modern technology.<sup>580</sup> Using this methodology, DuPont submits unit costs per CY of \$13.68 for solid rock excavation and \$13.82 for excavation in adverse terrain.<sup>581</sup>

NS rejects DuPont's solid rock excavation costs.<sup>582</sup> While NS agrees with DuPont's assessment of the type of effort required in solid rock excavation, it argues that DuPont improperly manipulated Means costs for drilling and blasting solid rock.<sup>583</sup> NS argues that a mobile blasting crew would be required as road bed construction of the DRR progressed, and that solid rock removal would in some cases require pre-splitting of rock slopes and the use of blasting mats.<sup>584</sup> In additional areas along the DRR roadbed, NS states its engineers have determined that solid rock removal would require benching.<sup>585</sup> "Benching is a form of slope stabilization consisting of horizontal berms cut into the sideslope to mitigate water runoff and control erosion."<sup>586</sup> NS argues that DuPont arbitrarily averaged open face rock blasting costs with the costs of bulk drilling and blasting generally used in mining and quarry operations.<sup>587</sup> NS agrees with DuPont's use of unit costs for open face blasting of rocks over 1,500 cubic yards, but not with the averaging of this cost with bulk blasting.<sup>588</sup> NS does accept DuPont's 50% reduction in solid rock qualities and reclassification of the remaining 50% as loose rock.<sup>589</sup> The Board will accept the parties' agreement on these two issues.

NS contends that DuPont has failed to include revised cost estimates for the cost of loading, hauling, and burying boulders.<sup>590</sup> NS states that the production rates for boulders are much lower than for common excavation, while the cost of excavating rock is higher.<sup>591</sup> NS

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<sup>580</sup> DuPont Opening III-F-16.

<sup>581</sup> DuPont Opening III-F-16.

<sup>582</sup> NS Reply III-F-71.

<sup>583</sup> NS Reply III-F-71.

<sup>584</sup> NS Reply III-F-71.

<sup>585</sup> NS Reply III-F-71.

<sup>586</sup> NS Reply III-F-71.

<sup>587</sup> NS Reply III-F-71.

<sup>588</sup> NS Reply III-F-71.

<sup>589</sup> NS Reply III-F-72.

<sup>590</sup> NS Reply III-F-72.

<sup>591</sup> NS Reply III-F-72.

estimates that 20% of the solid rock classification (both blasted and ripped) would be boulders of at least one-half cubic yard in size.<sup>592</sup> NS revises its unit cost by using what it considers the correct open face blasting item, excavating and hauling boulders, and using a 58/42 split of the 42-CY and 22-CY haulers.<sup>593</sup> Using this methodology, NS submits a unit cost of \$14.76 per cubic yard.<sup>594</sup>

NS rejects DuPont's adverse solid rock excavation unit cost.<sup>595</sup> As discussed above, NS rejects DuPont's use of a 42-CY hauler.<sup>596</sup> NS, on reply, substitutes a 22-CY hauler for use in adverse solid rock excavation.<sup>597</sup> Using this substitution, NS submits a unit cost of \$15.28 per cubic yard for solid rock excavation in adverse terrain.<sup>598</sup>

On rebuttal, DuPont states that NS has made the same modifications as it did for loose rock excavation.<sup>599</sup> DuPont rejects NS's modifications to haul distance, swell, finish grading and accepts the 50/50 split between the two hauler sizes.<sup>600</sup> DuPont also rejects two additional modifications NS made to reflect the handling of boulders.<sup>601</sup> DuPont argues that NS has provided no details regarding its estimate that 20% of materials remaining after blasting are boulders that a 3-CY shovel could not dispose of.<sup>602</sup> DuPont contends that the blasting techniques it relies upon are designed to produce specific results including rock size.<sup>603</sup> In addition, DuPont cites AEP Texas North Co. v. BNSF Railway (AEP), NOR 41191 (Sub-No. 1) (STB served Sept. 10, 2007),<sup>604</sup> for the proposition that Means assumes the blasted materials

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<sup>592</sup> NS Reply III-F-72.

<sup>593</sup> NS Reply III-F-73.

<sup>594</sup> NS Reply III-F-73.

<sup>595</sup> NS Reply III-F-73.

<sup>596</sup> NS Reply III-F-73.

<sup>597</sup> NS Reply III-F-73.

<sup>598</sup> NS Reply III-F-73.

<sup>599</sup> DuPont Rebuttal III-F-40.

<sup>600</sup> DuPont Rebuttal III-F-40.

<sup>601</sup> DuPont Rebuttal III-F-40 to III-F-41.

<sup>602</sup> DuPont Rebuttal III-F-40.

<sup>603</sup> DuPont Rebuttal III-F-41.

<sup>604</sup> Reconsideration denied (STB served May 15, 2009), vacated on other grounds and remanded sub nom. AEP Tex. N. Co. v. STB, 609 F.3d 432 (D.C. Cir. 2010).

would be small enough to be handled by a 3-CY shovel.<sup>605</sup> DuPont notes that similar adjustments have been rejected in past STB proceedings.<sup>606</sup> DuPont rejects the inclusion of NS's proposed costs for moving boulders.<sup>607</sup>

The Board will accept DuPont's revised unit costs for solid rock excavation in common and adverse terrain. We agree with DuPont that this conclusion is consistent with Board precedent. DuPont's reliance on a 50/50 split between the 22- and 42-CY haulers is a feasible approach for use in these circumstances, and again, NS's workpapers used a 50/50 mix of 22- and 42-CY haulers. Nor does the Board believe that it is necessary to increase the haulage distances as recommended by NS, because, as noted above, NS has not provided support for this increase.

#### **4. Embankment/Borrow**

DuPont utilizes Means to develop borrow costs based on a 5-CY wheel-mounted front end loader, 20-CY capacity dump trucks to haul material to construction sites, a dozer to spread the material, and the average compaction costs for embankment.<sup>608</sup> DuPont submits unit costs of \$15.59 per CY indexed to 2009.<sup>609</sup>

On reply NS accepts DuPont's unit costs for borrow, and rejects its exclusion of water for compaction for the entire DRR roadbed.<sup>610</sup> NS states that it adds a separate water for compaction charge.<sup>611</sup>

On rebuttal, DuPont argues that while NS states it accepts DuPont's opening unit costs for borrow, a review of NS's workpaper reveals that it added a finished grading cost.<sup>612</sup> DuPont rejects this additional cost and continues to use its opening borrow unit cost.<sup>613</sup>

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<sup>605</sup> DuPont Rebuttal III-F-41 (citing AEP Rebuttal III-F-56 (filed July 27, 2004)).

<sup>606</sup> DuPont Rebuttal III-F-41.

<sup>607</sup> DuPont Rebuttal III-F-41.

<sup>608</sup> DuPont Opening III-F-16 to III-F-17.

<sup>609</sup> DuPont Opening III-F-16 to III-F-17.

<sup>610</sup> NS Reply III-F-74.

<sup>611</sup> NS Reply III-F-74.

<sup>612</sup> DuPont Rebuttal III-F-42.

<sup>613</sup> DuPont Rebuttal III-F-42.

The Board will accept DuPont's opening unit costs for borrow, because NS states that it accepts DuPont's unit costs (except with respect to water for compaction). We do not accept the finished grading cost added in NS's workpaper, and we reject NS's attempt to break out the cost for water used in compaction. This would result in a double-count because compaction costs already include all water, equipment, and labor charges. Therefore, we accept DuPont's evidence on this point, which we consider to be appropriate and feasible.

## 5. Land For Waste Excavation

On opening, DuPont states that not all of the material excavated in the construction of the DRR will be re-used as fill.<sup>614</sup> DuPont notes that it assumed a 30% waste ratio consistent with procedures established in previous SAC cases.<sup>615</sup> DuPont proposes that the DRR would acquire additional land along the right-of-way to accommodate the dumping of this waste material.<sup>616</sup> Assuming an average 15-foot depth for waste material, DuPont has included an additional 7,678 acres of rural land at an estimated \$27,700 per acre for a total cost of \$207.3 million.<sup>617</sup>

NS rejects DuPont's estimate of the land area that the DRR would need to acquire to dump waste material and its stated cost per acre for such land.<sup>618</sup> NS argues that DuPont's opening evidence on this issue has three major flaws.<sup>619</sup> First, NS states that DuPont's half-mile haul cycle is too short and that it did not submit evidence on how many dump sites would be necessary.<sup>620</sup> NS contends that a one-mile haul cycle would be a more efficient choice and would result in 7,277 dump sites.<sup>621</sup> Second, NS argues that DuPont submitted an incorrect vertical waste pile slideslope (0:1 slideslope).<sup>622</sup> NS corrects this to a 1:1 slideslope for waste piles.<sup>623</sup> NS also argues that DuPont has used land areas that are precisely the same size as the anticipated waste pile with no set back.<sup>624</sup> NS corrects this by adding a 20-foot setback.<sup>625</sup>

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<sup>614</sup> DuPont Opening III-F-17.

<sup>615</sup> DuPont Opening III-F-17.

<sup>616</sup> DuPont Opening III-F-17.

<sup>617</sup> DuPont Opening III-F-17.

<sup>618</sup> NS Reply III-F-74.

<sup>619</sup> NS Reply III-F-74.

<sup>620</sup> NS Reply III-F-74 to III-F-75.

<sup>621</sup> NS Reply III-F-75.

<sup>622</sup> NS Reply III-F-75.

<sup>623</sup> NS Reply III-F-75.

<sup>624</sup> NS Reply III-F-75 to III-F-76.

Third, NS argues that DuPont's unit cost for land is incorrect.<sup>626</sup> NS contends that with 30% of the DRR traversing expensive non-rural land it is counter-intuitive to assume that waste sites would only be located in rural land, and that DuPont did not account for the high value of land in non-rural areas.<sup>627</sup> NS further argues that DuPont's excavation haul cycle requires an excavation waste dump site for every mile of the DRR.<sup>628</sup> NS corrects DuPont's average unit costs of land excavation to reflect the average cost of all land acquired by the DRR, not only rural land.<sup>629</sup> NS submits a total cost of \$611 million.<sup>630</sup>

On rebuttal, DuPont rejects NS's increased haul distance.<sup>631</sup> DuPont argues that NS has not shown that its haul distance was not feasible.<sup>632</sup> DuPont states that NS's assumption of evenly spaced dump sites is unsupported and erroneous.<sup>633</sup> Furthermore, DuPont notes that a 30% waste excavation figure is an average and that the estimate dates back to the time when the ICC Engineering Report data was first used and it has been used ever since.<sup>634</sup>

DuPont accepts the increase to the footprint of waste dump sites to account for sideslope and for equipment to operate.<sup>635</sup> DuPont has increased its land requirements by the same ratio submitted by NS.<sup>636</sup>

DuPont rejects NS's increased land costs.<sup>637</sup> DuPont argues that its dump sites are not uniformly located, evenly space, or evenly sized.<sup>638</sup> DuPont states that the majority of

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( . . . continued)

<sup>625</sup> NS Reply III-F-76.

<sup>626</sup> NS Reply III-F-76.

<sup>627</sup> NS Reply III-F-76.

<sup>628</sup> NS Reply III-F-77.

<sup>629</sup> NS Reply III-F-77.

<sup>630</sup> NS Reply III-F-77.

<sup>631</sup> DuPont Rebuttal III-F-56.

<sup>632</sup> DuPont Rebuttal III-F-56.

<sup>633</sup> DuPont Rebuttal III-F-56.

<sup>634</sup> DuPont Rebuttal III-F-56 n.132.

<sup>635</sup> DuPont Rebuttal III-F-56.

<sup>636</sup> DuPont Rebuttal III-F-56.

<sup>637</sup> DuPont Rebuttal III-F-56.

<sup>638</sup> DuPont Rebuttal III-F-56.

excavation will take place outside of urban areas and those urban areas tend to be more flat.<sup>639</sup> DuPont contends that, as a least-cost, most-efficient railroad, the DRR would be able to balance cut and fill quantities in urban areas which would result in less waste materials.<sup>640</sup> DuPont maintains the use of its opening unit costs of \$27,000 per acre for land for waste excavation.<sup>641</sup>

The Board will accept the parties' agreement on waste ratio and required space additions to waste sites. The Board will accept DuPont's waste excavation haul distances because we consider them realistic and feasible and NS failed to provide evidence to convince us otherwise. As previously discussed, the Board has accepted NS's land valuation, and therefore, we will accept NS's land valuation here as well. Because we find that DuPont's approach to placing waste excavation in rural land sites is feasible, we will recalculate NS's land costs based upon its rural land unit costs and not its average unit land costs.

#### **h. Environmental Compliance**

On opening, DuPont included environmental compliance costs based upon estimates derived from two recently constructed branch lines.<sup>642</sup> DuPont included costs for the DRR equal to \$0.2 million.<sup>643</sup> NS accepts DuPont's environmental compliance costs, and we will accept the parties' agreement.<sup>644</sup>

#### **i. Fine Grading**

On opening, DuPont did not submit evidence regarding fine grading. On reply, NS explains that fine grading is the final shaping of a roadbed to establish the cross section and profile of the engineering design.<sup>645</sup> NS contends that fine grading is not included in normal grading because it requires different equipment.<sup>646</sup> NS states that the Board has recognized this proposition in Otter Tail Power Co. v. BNSF Railway (Otter Tail), NOR 42071, slip op. at D-14 (STB served Jan. 27, 2006), aff'd sub nom. Otter Tail Power Co. v. STB, 484 F.3d 959 (8th Cir.

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<sup>639</sup> DuPont Rebuttal III-F-56.

<sup>640</sup> DuPont Rebuttal III-F-56.

<sup>641</sup> DuPont Rebuttal III-F-57.

<sup>642</sup> DuPont Opening III-F-24.

<sup>643</sup> DuPont Opening III-F-24.

<sup>644</sup> NS Reply III-F-115.

<sup>645</sup> NS Reply III-F-81.

<sup>646</sup> NS Reply III-F-81.

2007); Duke Energy Corp. v. CSX Transp., Inc. (Duke/CSXT), 7 S.T.B. 402, 422-24 (2004).<sup>647</sup> Furthermore, NS notes, Means lists fine grading separately and that the Board has found that fine grading was “an actual and necessary construction element for rail lines.”<sup>648</sup> Using Means, NS developed a unit cost for fine grading.<sup>649</sup> NS examined the specifications for the dimensions and parameters of single- and double-tracked roadbeds to determine the quantity of fine grading the DRR would require.<sup>650</sup> NS calculated the total cost for fine grading by using Means unit cost of \$0.42 per CY and the total area to be fine graded.<sup>651</sup> Using this methodology, NS submits a unit cost of \$0.11 per cubic yard of earthwork and then adds the unit costs to each earthwork type.<sup>652</sup>

On rebuttal, DuPont contends that its Trestle Hollow Project earthwork unit costs accounted for fine grading at no additional cost and that NS’s additional fine grading costs are without merit.<sup>653</sup> DuPont states that the Board has rejected a fine grading cost addition in at least four cases: AEP, slip op. at 82-83; Duke Energy Corp. v. Norfolk Southern Railway (Duke/NS), 7 S.T.B. 89, 176 (2003); Duke/CSXT, 7 S.T.B. at 480; and CP&L, 7 S.T.B. at 313-14.<sup>654</sup> DuPont argues that because Means lists separate costs for an item is not a sufficient demonstration that it is applicable to the DRR.<sup>655</sup>

DuPont also contends that the fine grading unit costs submitted by NS are based upon erroneous calculations and the grading quantities are grossly overstated.<sup>656</sup> DuPont first argues that NS’s quantity calculations are based upon the miles within an entire valuation section and not the miles of the valuation section being built by the DRR.<sup>657</sup> Second, while both parties agree to a 1-foot fill height for yards and other miles, DuPont argues that this methodology

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<sup>647</sup> NS Reply III-F-81 to III-F-82.

<sup>648</sup> NS Reply III-F-82 (citing Pub. Serv. Co. of Col. d/b/a Xcel Energy v. Burlington N. & Santa Fe Ry. (Xcel 2004), 7 S.T.B. 589, 678 (2004)).

<sup>649</sup> NS Reply III-F-84.

<sup>650</sup> NS Reply III-F-84.

<sup>651</sup> NS Reply III-F-84.

<sup>652</sup> NS Reply III-F-84.

<sup>653</sup> DuPont Rebuttal III-F-48.

<sup>654</sup> DuPont Rebuttal III-F-48.

<sup>655</sup> DuPont Rebuttal III-F-48.

<sup>656</sup> DuPont Rebuttal III-F-48.

<sup>657</sup> DuPont Rebuttal III-F-48 to III-F-49.

creates overstatements in earthwork quantities per mile and results in a significant overstatement of finished grading quantities.<sup>658</sup> DuPont rejects the addition of any costs for fine grading.<sup>659</sup>

As previously discussed, the Board has rejected DuPont's use of the Trestle Hollow Project, and therefore, the Board will accept NS's additional costs for fine grading because those costs are not already accounted for in Means or in NS's earthwork costs. Means lists fine grading separately from other grading activities, and this additional step would be needed to shape the DRR's roadbed. See Xcel 2004, 7 S.T.B. at 678. Because DuPont did not calculate a fine grading cost, NS's calculation of this cost is the best evidence of record.

**j. Lighting for Night Work**

On opening DuPont did not address the issue of night work. NS argues that working at night would be required if the DRR's aggressive schedule is to be met.<sup>660</sup> NS states that the DRR would require a lighting crew at night to move, setup, and maintain lights for construction.<sup>661</sup> NS included lights, generators, a pickup truck, labor foreman, laborer costs, and a location factor in its calculations of a lighting crew's per day costs.<sup>662</sup> NS then applies the cost per day to 25 days a month over the course of the seven-month DRR construction period to develop a total \$367,110.00 cost per crew.<sup>663</sup> NS then argues that a light crew would be needed every 10 miles, resulting in 728 lighting crews.<sup>664</sup> Utilizing this methodology, NS submits total unit costs for lighting night work in the amount of \$267,146,016.<sup>665</sup>

DuPont rejects NS's inclusion of these additional unit costs as unnecessary and notes that the Board has not accepted the costs in the two previous SAC cases where it has been presented.<sup>666</sup> DuPont contends that there is sufficient light to construct the DRR.<sup>667</sup> DuPont

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<sup>658</sup> DuPont Rebuttal III-F-49.

<sup>659</sup> DuPont Rebuttal III-F-49.

<sup>660</sup> NS Reply III-F-115.

<sup>661</sup> NS Reply III-F-116.

<sup>662</sup> NS Reply III-F-116.

<sup>663</sup> NS Reply III-F-116.

<sup>664</sup> NS Reply III-F-116.

<sup>665</sup> NS Reply III-F-116.

<sup>666</sup> DuPont Rebuttal III-F-69 to III-F-70 (citing Otter Tail, slip op. at D-18 and AEP where it was presented and not discussed in the Board's decision).

<sup>667</sup> DuPont Rebuttal III-F-69.



notes that in Danville, KY, located in the middle of the DRR, the shortest days of the year have approximately 10 hours and 32 minutes between the beginning and end of civil twilight.<sup>668</sup>

DuPont argues that this is sufficient time to conduct operations and that there are obviously more hours of daylight at other times of the year.<sup>669</sup> Furthermore, DuPont argues that lighting costs represent a barrier to entry and the DRR may operate under the theory of unconstrained resources which would allow the deployment of more personnel, equipment, and materials in order to maintain its construction schedule.<sup>670</sup>

The Board believes that night work would not be necessary to meet the construction schedule. We note also that real world projects often fall behind schedule for all sorts of reasons and it is precisely for that reason our SAC procedures account for a contingency factor. As discussed below, the parties have agreed to a 10% contingency factor. If the need for night lighting arose, it would be an expense that would fall in that category and to include it here would thus be a double count. Therefore, the Board will reject NS's inclusion of costs for lighting for night work.

**k. Over-Excavation**

On opening, DuPont did not address the issue of over-excavation. NS contends that in solid rock areas modern railroad construction methods require at least 12 inches of over-excavation and replacement of that rock with materials compacted to the same specifications as embankments.<sup>671</sup> NS used the DRR's roadbed dimensions to estimate cubic yard quantities of solid rock over-excavation requirements.<sup>672</sup> NS adjusts the quantity of rock excavation accordingly.<sup>673</sup>

DuPont rejects the addition of over-excavation costs as unnecessary.<sup>674</sup> DuPont argues that NS has provided no evidence that the solid rock quantities contained in the ICC Engineering Reports do not include over-excavation costs.<sup>675</sup> DuPont states that NS has not provided any evidence that the original roadbed construction for any portion of the DRR required over-

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<sup>668</sup> DuPont Rebuttal III-F-69.

<sup>669</sup> DuPont Rebuttal III-F-69.

<sup>670</sup> DuPont Rebuttal III-F-69.

<sup>671</sup> NS Reply III-F-81.

<sup>672</sup> NS Reply III-F-81.

<sup>673</sup> NS Reply III-F-81.

<sup>674</sup> DuPont Rebuttal III-F-47.

<sup>675</sup> DuPont Rebuttal III-F-47.

excavation.<sup>676</sup> DuPont also argues that NS quantities are grossly overstated as it uses the miles contained within an entire valuation section and not the miles of the valuation section being built by the DRR to calculate the quantities of over-excavation.<sup>677</sup>

DuPont's reliance on the ICC Engineering Reports for inclusion of over-excavation costs is a feasible and realistic approach for this construction project. As DuPont suggests, and we agree, NS has failed to submit evidence that unit costs for over-excavation are not included in the ICC Engineering Reports. The Board will therefore reject NS's inclusion of unit costs for over-excavation.

### **I. Retaining Walls**

DuPont utilized the ICC Engineering Reports to develop quantities for retaining walls along the DRR.<sup>678</sup> DuPont notes that the ICC Engineering Reports include cubic yards of masonry, timber walls, and walls made from timber ties and pilings.<sup>679</sup> Rather than construct masonry or timber retaining walls, DuPont proposes that the DRR should use gabions for all retaining walls because they can be assembled on site and bent to fit the existing terrain.<sup>680</sup> Using the costs from Means, DuPont submits a total retaining wall cost of \$346 million at 2009 levels.<sup>681</sup>

On reply, NS accepts the use of gabions for retaining walls, but rejects the retaining wall quantities.<sup>682</sup> NS argues that DuPont's evidence failed to include preparation costs, and increased wall heights over what DuPont proposed.<sup>683</sup> NS also rejects DuPont's use of untreated timber piles.<sup>684</sup> NS also argues that the use of untreated timber piles is a safety hazard and could cause a derailment if they were to fail.<sup>685</sup> NS substitutes the use of treated timbers for timber

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<sup>676</sup> DuPont Rebuttal III-F-47.

<sup>677</sup> DuPont Rebuttal III-F-47.

<sup>678</sup> DuPont Opening III-F-20.

<sup>679</sup> DuPont Opening III-F-20 to III-F-21.

<sup>680</sup> DuPont Opening III-F-21.

<sup>681</sup> DuPont Opening III-F-21.

<sup>682</sup> NS Reply III-F-108.

<sup>683</sup> NS Reply III-F-108.

<sup>684</sup> NS Reply III-F-108.

<sup>685</sup> NS Reply III-F-110.

piling walls and increases the cost of the piling to \$48,311,609.<sup>686</sup> NS states that masonry walls have a greater weight by volume than gabion walls and it is incorrect to assume, as DuPont has done, that masonry walls can be replaced by an equivalent volume of gabion wall.<sup>687</sup> NS states that, on opening, DuPont posits that the roadbed width will increase by 5 feet for single track and 7 feet for double track.<sup>688</sup> Similarly, NS states that, under DuPont's approach, the roadbed in cuts would increase by 17 feet for single track and 19 feet for double track.<sup>689</sup> Taken together, NS argues that this wider roadbed will need to be accommodated by larger retaining walls.<sup>690</sup> NS asserts that this widening of the roadbed would require increasing the retaining wall height by 1.67 feet for single track and 2.33 feet for double track.<sup>691</sup> For track in cut, NS states that a height increase of 5.67 feet is necessary for single track and 6.33 for double track.<sup>692</sup> NS states that it is standard practice to balance cuts and fills.<sup>693</sup> Further, NS states that 44% of the DRR is double track. Based on these factors NS submits an average wall height increase of four feet.<sup>694</sup>

NS argues that DuPont understates the quantity of gabion needed to build the retaining walls because DuPont replaces one cubic yard of masonry wall with one cubic yard of gabion wall.<sup>695</sup> NS argues that a cubic yard of gabion weighs less than a cubic yard of masonry and as a result a gabion wall has a lower load-carrying capacity than a masonry wall of similar dimensions.<sup>696</sup> NS argues that the average weight of a one cubic yard of gabion along the DRR is 2,430 pounds.<sup>697</sup> NS uses a ratio of 1.54:1 to determine the weight of masonry that it proposes is being replaced by the weight of gabion along the DRR.<sup>698</sup> Moreover, NS also argues that

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<sup>686</sup> NS Reply III-F-110.

<sup>687</sup> NS Reply III-F-108.

<sup>688</sup> NS Reply III-F-109.

<sup>689</sup> NS Reply III-F-109.

<sup>690</sup> NS Reply III-F-109.

<sup>691</sup> NS Reply III-F-109.

<sup>692</sup> NS Reply III-F-109.

<sup>693</sup> NS Reply III-F-110.

<sup>694</sup> NS Reply III-F-110.

<sup>695</sup> NS Reply III-F-111.

<sup>696</sup> NS Reply III-F-111.

<sup>697</sup> NS Reply III-F-112.

<sup>698</sup> NS Reply III-F-112.

DuPont miscalculated the conversion for timber walls to gabion walls.<sup>699</sup> NS disagrees with DuPont's estimate for the total CY of gabion necessary to replace existing timber walls.<sup>700</sup>

Based on the increased volume caused by the conversion from masonry to gabion and the increased height of retaining walls, NS submits a gabion cost of \$822,385,741.<sup>701</sup> NS also states that a foundation excavation volume of 1,058,555 CY was determined based on the average height of the existing walls.<sup>702</sup> These quantity adjustments along with the substitution of treated piles increase the cost for retaining walls from the \$346,128,689 estimated by DuPont to \$870,697,350 estimated by NS.<sup>703</sup>

DuPont rejects NS's adjustment to increase the roadbed width and NS's claim that the retaining wall quantities should be increased due to differences between the ICC Engineering Reports and modern construction methods.<sup>704</sup> DuPont argues that the Board has rejected similar arguments in AEPCO and AEP.<sup>705</sup> Notwithstanding, DuPont contends that NS's methodology is flawed as NS has provided no evidence that a widening of the original roadbed will require an increase in the height of existing retaining walls.<sup>706</sup> DuPont also argues that NS's calculations assume that in every retaining wall location the topography is either going upward or downward as one moves out from the center of the roadbed and that this is simply not the case.<sup>707</sup> DuPont states that walls do not always increase; they can decrease or stay the same.<sup>708</sup> Furthermore, DuPont argues that NS's increase in retaining wall heights is flawed because NS assumed that all retaining walls from the ICC Engineering Reports were ten feet tall and that all new walls must be increased to fourteen feet in height.<sup>709</sup> DuPont argues that the ICC Engineering Reports do not list the height of any retaining walls.<sup>710</sup> DuPont argues further that NS has not put forth any

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<sup>699</sup> NS Reply III-F-112.

<sup>700</sup> NS Reply III-F-112 to III-F-113.

<sup>701</sup> NS Reply III-F-114.

<sup>702</sup> NS Reply III-F-114.

<sup>703</sup> NS Reply III-F-114.

<sup>704</sup> DuPont Rebuttal III-F-62.

<sup>705</sup> DuPont Rebuttal III-F-62.

<sup>706</sup> DuPont Rebuttal III-F-62.

<sup>707</sup> DuPont Rebuttal III-F-62.

<sup>708</sup> DuPont Rebuttal III-F-62 to III-F-63.

<sup>709</sup> DuPont Rebuttal III-F-63.

<sup>710</sup> DuPont Rebuttal III-F-63.

evidence that retaining walls are ten feet tall and has provided no basis for the assumption that all retaining walls must be increased to fourteen feet in height.<sup>711</sup> DuPont rejects any increase in the retaining wall height.<sup>712</sup>

DuPont argues that its use of gabions and a one-for-one CY quantity replacement is a methodology that has been used in previous SAC cases.<sup>713</sup> DuPont states that the weight adjustments proposed by NS are unsupported.<sup>714</sup> NS assumes that all masonry walls are 54% heavier than gabion walls even though the ICC Engineering Reports list 60 various materials used for constructing masonry retaining walls.<sup>715</sup> DuPont further argues that its opening evidence on retaining wall quantities is most likely overstated because the ICC Engineering Reports do not show the locations of retaining walls and DuPont assumed all retaining walls were in place along the main line track.<sup>716</sup>

DuPont notes that NS has accepted the quantities produced from the ICC Engineering Reports, but rejected the gabion quantities required for retaining wall replacement.<sup>717</sup> DuPont states that the difference between the parties' gabion quantities is a result of NS's development of an estimate for the linear feet of timber and tie retaining walls to be replaced using an unsupported ten-foot height assumption for the existing walls.<sup>718</sup> DuPont continues to use its opening quantities of timber and tie walls, modified only for the increase in route miles in its rebuttal submission.<sup>719</sup> As discussed above, DuPont rejects the increase in wall height submitted by NS, which DuPont argues is unsupported.<sup>720</sup>

DuPont rejects NS's additional costs for treated piles.<sup>721</sup> DuPont states that NS uses the International Code Council specifications as support for its use of treated piles.<sup>722</sup> DuPont

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<sup>711</sup> DuPont Rebuttal III-F-63 to III-F-64.

<sup>712</sup> DuPont Rebuttal III-F-64.

<sup>713</sup> DuPont Rebuttal III-F-64 (citing WFA/Basin, slip op. at 89; AEP, slip op. at 84).

<sup>714</sup> DuPont Rebuttal III-F-64.

<sup>715</sup> DuPont Rebuttal III-F-64.

<sup>716</sup> DuPont Rebuttal III-F-65.

<sup>717</sup> DuPont Rebuttal III-F-66.

<sup>718</sup> DuPont Rebuttal III-F-66.

<sup>719</sup> DuPont Rebuttal III-F-66.

<sup>720</sup> DuPont Rebuttal III-F-66.

<sup>721</sup> DuPont Rebuttal III-F-67.

<sup>722</sup> DuPont Rebuttal III-F-66.

argues that this code applies to construction of residential and commercial buildings, but does not specifically apply to railroad construction.<sup>723</sup>

DuPont rejects NS's additional foundation excavation quantities.<sup>724</sup> DuPont states that NS's addition of over one million cubic yards of foundation excavation is erroneous and based on the unsupported assumption that all retaining walls on the DRR average ten feet in height.<sup>725</sup> DuPont argues that this is a double count of excavation quantities as both parties have included ICC Engineering Reports to develop excavation quantities along the DRR route.<sup>726</sup>

For the reasons DuPont states, DuPont's reliance on gabion walls is a feasible and realistic approach for use on this construction project. Therefore, the Board will accept DuPont's evidence for retaining walls as the best evidence of record. With respect to quantities, the Board will accept NS's correct quantities for replacement of masonry walls with gabion walls because NS developed quantities using the proper conversion ratio of 1:1.54.

#### **m. Rip Rap**

DuPont developed rip rap quantities from the ICC Engineering Reports and applied unit costs taken from Means in order to machine-place the rip rap.<sup>727</sup> DuPont included \$36.9 million for rip rap at 2009 levels.<sup>728</sup>

NS rejects DuPont's quantities of rip rap, but accepts the submitted unit cost.<sup>729</sup> NS argues that DuPont missed 64 CY of rip rap in one ICC Engineering Report valuation section, and NS therefore adjusts the quantities to reflect the addition.<sup>730</sup>

On rebuttal, DuPont corrected its quantities as identified by NS.<sup>731</sup> DuPont also states that NS made corrections to reflect increased quantities for partially owned lines, which DuPont states it is not constructing.<sup>732</sup>

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<sup>723</sup> DuPont Rebuttal III-F-66 to III-F-67.

<sup>724</sup> DuPont Rebuttal III-F-67.

<sup>725</sup> DuPont Rebuttal III-F-67.

<sup>726</sup> DuPont Rebuttal III-F-67.

<sup>727</sup> DuPont Opening III-F-21.

<sup>728</sup> DuPont Opening III-F-21.

<sup>729</sup> NS Reply III-F-114.

<sup>730</sup> NS Reply III-F-114.

<sup>731</sup> DuPont Rebuttal III-F-68.

The parties agree on unit costs and the Board will accept this agreement. The Board will accept the NS supplied quantities with an adjustment to exclude partially owned lines that, as discussed below, we are not requiring the DRR to replicate. The Board accepts NS's quantities as the best evidence of record, because it is accepting NS's configuration.

**n. Surfacing for Detour Roads**

The parties agree on costs for surfacing of detour roads, and the Board will accept this agreement.

**o. Construction Site Access Roads**

DuPont states that in general the DRR's track subgrade is used for construction site access roads, and that most of the DRR is accessible from public roads and highways.<sup>733</sup> DuPont argues this will permit the construction of the DRR without the construction of separate access roads.<sup>734</sup> DuPont asserts that its position is consistent with previous SAC cases.<sup>735</sup>

NS did not address this issue on reply and has therefore conceded that DRR can be constructed without separate construction site access roads. The Board will accept DuPont's evidence regarding construction site access roads as the best evidence of record.

**p. Seeding/Top Soil Placement**

DuPont states that based on the ICC Engineering Reports, only 0.008% of the lines replicated by the DRR had embankment protection quantities.<sup>736</sup> For recently constructed branch lines, DuPont estimated the acres per mile for seeding/top soil placement based on the average acres per mile for the 79-mile Orin Line, the most recent rail line construction project in the United States.<sup>737</sup> To develop costs, DuPont relied upon the \$1,600 per acre unit costs for embankment protection from the Trestle Hollow Project and indexed that cost to 2009 to arrive

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<sup>732</sup> DuPont Rebuttal III-F-68.

<sup>733</sup> DuPont Opening III-F-23.

<sup>734</sup> DuPont Opening III-F-23.

<sup>735</sup> DuPont Opening III-F-24 (citing Duke/CSXT, 7 S.T.B. at 76; Duke/NS, 7 S.T.B. at 90-91; CP&L, 7 S.T.B. at 278; and AEP, slip op. at 80).

<sup>736</sup> DuPont Opening III-F-22.

<sup>737</sup> DuPont Opening III-F-22.

at a cost of \$1,688.78 per acre.<sup>738</sup> DuPont submits total unit costs of \$1.4 million for seeding/top soil placement.<sup>739</sup>

NS accepts DuPont's seeding/top soil placement quantities, but rejects DuPont's use of the Trestle Hollow Project to develop unit costs.<sup>740</sup> NS submits unit costs taken from Means.<sup>741</sup>

The parties agree on seeding and top soil placement quantities, and the Board will accept this agreement. The Board will accept NS's unit costs for seeding and top soil placement because the Board is rejecting DuPont's use of the Trestle Hollow Project, as discussed above, as an appropriate benchmark for estimating costs in this case.

**q. Stripping**

Stripping removes all vegetation, sod, topsoil and unsuitable material, including leaves, branches, and wood chips left over from clearing and grubbing activities. On opening, DuPont did not submit separate costs associated with stripping. DuPont states that any additional costs for stripping or undercutting were included in the Trestle Hollow Project unit costs.<sup>742</sup> NS claims that the Trestle Hollow Project does not provide a reasonable basis for determining costs associated with the large, diverse, geographically dispersed, and complex DRR construction project.<sup>743</sup> NS also claims that stripping is required for roadbeds built on embankments because work in these areas requires more than removing a layer of soil.<sup>744</sup> In order to determine the amount of DRR roadbed that would require stripping, NS "developed the square footage of the roadbed under embankment based on the relative proportion of embankment to excavation calculated based on the ICC Engineering Report quantities."<sup>745</sup>

DuPont argues that additional stripping costs are unnecessary as the ICC Engineering Report includes all clearing and grubbing necessary to construct a roadbed.<sup>746</sup> DuPont cites Xcel 2004, 7 S.T.B. at 671, where the Board found that stripping would duplicate waste costs.<sup>747</sup>

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<sup>738</sup> DuPont Opening III-F-22.

<sup>739</sup> DuPont Opening III-F-22.

<sup>740</sup> NS Reply III-F-115.

<sup>741</sup> NS Reply III-F-115.

<sup>742</sup> DuPont Opening III-F-9.

<sup>743</sup> NS Reply III-F-77 to III-F-78.

<sup>744</sup> NS Reply III-F-78.

<sup>745</sup> NS Reply III-F-78 to III-F-79.

<sup>746</sup> DuPont Rebuttal III-F-43.



Separate stripping costs have been found to be duplicate waste costs in prior SAC cases. See Xcel 2004, 7 S.T.B. at 671. Because the topsoil would be removed during clearing and grubbing, there would be no need for a separate charge for stripping. To include a separate charge for stripping in this case would result in a double count of certain construction costs. This would also be true with respect to building an embankment, and would be done regardless of the type of grading. Because we have accepted NS's clearing and grubbing costs, as discussed above, and consider stripping costs to be included therein, see e.g., Xcel 2004, we will reject the additional charge for stripping presented by NS.

**r. Subgrade Preparation & Water for Compaction**

DuPont argues that in Eastern coal rate cases the Board has upheld complainant evidence that water for compaction is not necessary because in the areas concerned there is sufficient water content to allow for proper compaction of soil.<sup>748</sup> DuPont states that the DRR will traverse sub-humid, moist sub-humid and humid areas, consistent with the territory traversed by stand-alone rail roads in Eastern coal rate cases.<sup>749</sup> While DuPont contends that water for compaction is not necessary, it states that the common earthwork costs submitted include incidental items such as water.<sup>750</sup>

NS rejects DuPont's failure to include costs for subgrade preparation, which includes costs for use of water in compaction and the drying of wet material.<sup>751</sup> NS states that the Board excluded water for compaction costs where the defendant railroad had failed to provide evidence that water for compaction is necessary.<sup>752</sup> NS states that that Board has accepted water for compaction in Texas Municipal Power Agency v. BNSF Railway (TMPA), 6 S.T.B. 573 (2003), and that construction techniques that are actually used in practice are not a barrier to entry.<sup>753</sup> NS states that it is overly simplistic to argue that eastern carriers do not need to account for water for compaction costs and that a SARR of the DRR's length and geographical diversity would

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( . . . continued)

<sup>747</sup> DuPont Rebuttal III-F-44. DuPont also cites AEP, slip op. at 79, and AEPCO, slip op. at 84-85, in support of this argument. See DuPont Rebuttal III-F-44 n.90.

<sup>748</sup> DuPont Opening III-F-22.

<sup>749</sup> DuPont Opening III-F-22 to III-F-23.

<sup>750</sup> DuPont Opening III-F-23.

<sup>751</sup> NS Reply III-F-87.

<sup>752</sup> NS Reply III-F-87.

<sup>753</sup> NS Reply III-F-87 (citing TMPA, 6 S.T.B. at 707).

likely require water for soil compaction due to the varying soil types to be encountered.<sup>754</sup> NS argues that DuPont has offered no evidence to support its assumption that water for compaction or additional drying would not be necessary.<sup>755</sup>

NS submits evidence from the Natural Resources Conservation Service (NRCS), a part of the United States Department of Agriculture (USDA).<sup>756</sup> The NRCS has compiled soil information from local areas of the United States, primarily for agricultural purposes, but NS states that the data includes engineering properties, construction suitability features, and other data.<sup>757</sup> NS used two NRCS resources to estimate soil conditions along the DRR, the Soil Climate Analysis Network (SCAN) and the Web Soil Survey (WSS).<sup>758</sup> NS compared natural moisture content data from SCAN with the water content values for dry and wet conditions given in WSS.<sup>759</sup> NS states the results of its “analysis indicate that the majority of the soils along the DRR alignment are wetter than optimum, and consequently would require drying before suitable compaction can be achieved.”<sup>760</sup> NS developed a table showing optimum moisture content and average natural moisture content for the 38 major/predominant soil types along the DRR.<sup>761</sup> Of the 38 major soil types, five are drier than optimal and, therefore, water is required to achieve optimal compaction.<sup>762</sup> NS identifies 15 soils which have optimal natural moisture content and can be compacted with no addition of water.<sup>763</sup> For the remaining 18 soil types, NS argues that significant drying is required.<sup>764</sup> NS utilized Means to apply cost data to the top portion of the roadbed, or what amounts to 20% of the total common excavation and borrow material quantities.<sup>765</sup> NS also utilized Means to develop soil drying unit costs.<sup>766</sup> NS applied a B-84 crew with an operator and tractor and added a disc harrow attachment for a total cost of \$840.44

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<sup>754</sup> NS Reply III-F-87.

<sup>755</sup> NS Reply III-F-87 to III-F-88.

<sup>756</sup> NS Reply III-F-90.

<sup>757</sup> NS Reply III-F-90.

<sup>758</sup> NS Reply III-F-90.

<sup>759</sup> NS Reply III-F-90.

<sup>760</sup> NS Reply III-F-91.

<sup>761</sup> NS Reply III-F-91 to III-F-92.

<sup>762</sup> NS Reply III-F-91 to III-F-92.

<sup>763</sup> NS Reply III-F-92.

<sup>764</sup> NS Reply III-F-92.

<sup>765</sup> NS Reply III-F-93.

<sup>766</sup> NS Reply III-F-93.

per day and assumed a production rate of 4,000 CY per day.<sup>767</sup> NS states that this resulted in a unit cost of \$0.21 per CY, which it applied to each CY of common excavation and borrow used in the areas with soil too wet for compaction without drying.<sup>768</sup>

DuPont rejects NS's additional costs as unsupported and unnecessary.<sup>769</sup> DuPont reiterates that water compaction costs have been excluded from previous eastern railroad SAC cases, but that its common earthwork costs based upon the Trestle Hollow Project include incidental items such as water.<sup>770</sup> DuPont disputes the utility of NS's evidence, noting that the NS map describing the geology of the entire DRR is "confusing at best."<sup>771</sup> DuPont argues that the table of 38 types of soil is unclear and based upon information contained in a confusing DRR geological map that fails to identify the valuation segments (wet, dry, or optimum) represented on the soil table.<sup>772</sup>

DuPont also disputes the quantities submitted by NS.<sup>773</sup> DuPont states that for those segments classified as wet NS assumes that 100% of the common excavation must be dried even though only 70% of common excavation is assumed to be used as embankment.<sup>774</sup> DuPont makes the same argument for common excavation classified as dry, while disputing the figure and sources for NS's application of water for compaction costs to 20% of the total common excavation and borrow quantities.<sup>775</sup> DuPont further states that NS has submitted costs that are over eight times more expensive than the costs for a bulldozer and disc harrow attachment necessary to spray water over the roadbed.<sup>776</sup>

Because the Board is rejecting the inclusion of costs developed from the Trestle Hollow Project, and DuPont did not calculate costs for subgrade preparation and water for compaction, the Board will accept the costs developed by NS as the best evidence of record. See TMPA, 6 S.T.B. at 707.

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<sup>767</sup> NS Reply III-F-93.

<sup>768</sup> NS Reply III-F-93.

<sup>769</sup> DuPont Rebuttal III-F-51.

<sup>770</sup> DuPont Rebuttal III-F-51.

<sup>771</sup> DuPont Rebuttal III-F-52.

<sup>772</sup> DuPont Rebuttal III-F-53.

<sup>773</sup> DuPont Rebuttal III-F-54.

<sup>774</sup> DuPont Rebuttal III-F-54.

<sup>775</sup> DuPont Rebuttal III-F-54.

<sup>776</sup> DuPont Rebuttal III-F-54.

**s. Swell**

On opening, DuPont did not address swell as an additional cost. NS on reply states, that “the process of excavating, hauling, and backfilling material involves three soil states: bank, loose, and compacted (or embanked), each having a different density.”<sup>777</sup> NS argues that shrinkage and swell factors must be taken into account in order to accurately estimate the cost of excavating, hauling, and constructing roadway embankments.<sup>778</sup> NS applies the shrinkage and swell factors by using the following method: bank cubic yards (BCY) is excavated where it decreases in density; then it is hauled as loose cubic yards (LCY); and ultimately compacted to embankment cubic yards (ECY).<sup>779</sup> NS states that it uses typical soil volume conversion factors, displayed below, to adjust for the addition of shrinkage and swell factors.<sup>780</sup>

TABLE B-9

| Adverse Common Ex. Swell & Shrinkage Factor | Loose Rock Swell & Shrinkage Factor | Solid Rock Swell Factor |
|---------------------------------------------|-------------------------------------|-------------------------|
| BCY to BCY 1.00                             | BCY to BCY 1.00                     | BCY to BCY 1.00         |
| LCY to BCY 1.25                             | LCY to BCY 1.35                     | LCY to BCY 1.50         |
| ECY to BCY 0.90                             | ECY to BCY 0.90                     | ECY to BCY 1.30         |

DuPont rejects the adjustment of earthwork costs to account for shrinkage and swell factors.<sup>781</sup> DuPont argues that NS’s position is predicated on an unsupported assumption that the ICC Engineering Reports show BCY while Means uses LCY.<sup>782</sup> DuPont states that the cubic yard quantities in the ICC Engineering Reports are not labeled to reflect ECY, LCY, or BCY.<sup>783</sup> DuPont contends that contractors are paid on bank quantities and hauling based on swell is factored into contract bids.<sup>784</sup> DuPont states that if a difference in soil quantities exists the

<sup>777</sup> NS Reply III-F-84.

<sup>778</sup> NS Reply III-F-84 to III-F-85.

<sup>779</sup> NS Reply III-F-85.

<sup>780</sup> NS Reply III-F-85.

<sup>781</sup> DuPont Rebuttal III-F-49.

<sup>782</sup> DuPont Rebuttal III-F-50.

<sup>783</sup> DuPont Rebuttal III-F-50.

<sup>784</sup> DuPont Rebuttal III-F-50.

Trestle Hollow Project unit costs already account for the difference.<sup>785</sup> Moreover, DuPont argues that NS's adjustment is nonetheless overstated.<sup>786</sup>

The Board will reject NS's adjustment for swell because we agree with DuPont's assessment that Means' earthwork costs already account for the costs of swell. The Board agrees that Means reflects work being done and it is a standard industry practice to bid on earthwork in its compacted state, which would already account for swell. The Board also agrees with DuPont that NS does not cite support for its claim that the ICC Engineering Reports record earthwork quantities in BCY.

**t. Undercutting**

On opening, DuPont did not include separate unit costs for undercutting. On reply, NS argues that additional costs for undercutting are necessary in this case.<sup>787</sup> NS states that the Board rejected the addition of undercutting costs in CP&L because in that case NS had not demonstrated how much right-of-way could be constructed in solid rock areas.<sup>788</sup> NS states that ICC Engineering Reports do not contain embankment quantities sufficient to estimate the undercutting of unsuitable material.<sup>789</sup> NS therefore used the United States Fish and Wildlife Service National (USFWS) Wetlands Inventory maps to estimate the amount of undercutting the DRR would encounter along its route.<sup>790</sup> Using this method, NS identifies 155.9 miles of the DRR that is located within wetlands and would require undercutting material.<sup>791</sup> NS then converted embankment roadbed square footage into estimated cubic yardages of undercut material.<sup>792</sup> NS used the following assumptions: "undercutting of an average of two-feet of material to reach material suitable for compaction; and ground compaction for placement of the embankment, as required by modern railroad construction standards."<sup>793</sup> To account for undercutting quantities, NS added the volume of undercut material to the total common

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<sup>785</sup> DuPont Rebuttal III-F-50.

<sup>786</sup> DuPont Rebuttal III-F-51.

<sup>787</sup> NS Reply III-F-79.

<sup>788</sup> NS Reply III-F-79 (citing CP&L, 7 S.T.B. at 304).

<sup>789</sup> NS Reply III-F-79 to III-F-80.

<sup>790</sup> NS Reply III-F-80.

<sup>791</sup> NS Reply III-F-80.

<sup>792</sup> NS Reply III-F-80.

<sup>793</sup> NS Reply III-F-80.

excavation quantity.<sup>794</sup> To calculate the cost, NS applied its common excavation unit costs to these quantities.<sup>795</sup>

DuPont notes that the Board has repeatedly rejected the inclusion of additional costs for undercutting.<sup>796</sup> DuPont argues that virtually all of the lines being replicated by the DRR were built before the ICC inventory and the ICC Engineering Reports would therefore likely capture all undercutting since the original construction.<sup>797</sup> Furthermore, DuPont argues that NS has not submitted evidence that any of the original roadbeds replicated by the DRR had to be replaced because undercutting had not been performed.<sup>798</sup> DuPont states that the ICC Engineering Reports were based in part on observations of physical characteristics of the roadbed, and therefore if undercutting had been needed it would have been included in the reports' quantities.<sup>799</sup> DuPont also argues that adding borrow is unnecessary as replacement materials can be utilized from the excavation occurring on-site.<sup>800</sup> DuPont asserts that NS's quantities are unsupported and that NS's methodology for identifying DRR route miles requiring undercutting is unsupported and not contained in the workpapers.<sup>801</sup>

The Board will reject the NS's inclusion of additional costs and quantities for undercutting because NS has not submitted sufficient evidence to demonstrate that the ICC Engineering Report does not take into account the costs of undercutting.

**u. Utility Relocation**

The parties agree on the costs for relocating and protecting utilities, and the Board will accept the parties' agreement.

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<sup>794</sup> NS Reply III-F-80.

<sup>795</sup> NS Reply III-F-80.

<sup>796</sup> DuPont Rebuttal III-F-44.

<sup>797</sup> DuPont Rebuttal III-F-45.

<sup>798</sup> DuPont Rebuttal III-F-46.

<sup>799</sup> DuPont Rebuttal III-F-46.

<sup>800</sup> DuPont Rebuttal III-F-46.

<sup>801</sup> DuPont Rebuttal III-F-46 to III-F-47.

**C. Track Construction**

TABLE B-10

| Track Construction              |                 |                  |                 |
|---------------------------------|-----------------|------------------|-----------------|
|                                 | DuPont          | NS               | STB             |
| Sub-ballast & Ballast           | \$1,125,237,557 | \$2,354,887,144  | \$2,066,764,868 |
| Ties                            | \$1,621,007,097 | \$1,820,757,718  | \$1,809,344,005 |
| Rail                            | \$2,519,913,701 | \$3,228,501,513  | \$2,673,593,103 |
| Other Track Materials           | \$797,129,391   | \$882,650,414    | \$877,335,828   |
| Turnouts                        | \$526,710,980   | \$575,226,561    | \$575,226,561   |
| Switch Heaters                  | \$54,131,000    | \$50,901,000     | \$50,901,000    |
| Derails & Wheel Stops           | \$13,425,265    | \$34,544,713     | \$34,544,713    |
| Lubricators                     | \$12,067,596    | \$12,067,596     | \$12,067,596    |
| Field Welds                     | \$31,623,631    | \$33,964,324     | \$33,755,087    |
| Diamond Crossings               | \$30,829,950    | \$30,221,170     | \$30,287,332    |
| Weather-Related Labor Additions | \$0             | \$19,120,569     | \$0             |
| Track Installation/Labor        | \$1,476,103,893 | \$1,585,570,494  | \$1,575,802,617 |
| TOTAL                           | \$8,208,180,061 | \$10,628,413,215 | \$9,739,622,711 |

**1. Ballast****a. Specifications**

The parties agree on ballast specifications, and the Board will accept the parties' agreement.

**b. Quantities**

On opening, DuPont submits use of a 12-inch layer of clean rock ballast for all main tracks and a 6-inch layer of ballast under yard tracks and set-out tracks.<sup>802</sup> DuPont develops ballast volume on a per foot of track basis, accounting for tie volumes within the ballast.<sup>803</sup> DuPont then converts these volumes using the standard conversion factor of 1.5 tons/CY which

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<sup>802</sup> DuPont Opening III-F-25 to III-F-26.

<sup>803</sup> DuPont Opening III-F-26.

it states is conservative versus the conversion factor of 1.325 tons/CY found in the Track Data Handbook.<sup>804</sup>

NS claims that DuPont miscalculates ballast quantities because it used an incorrect weight-to-volume conversion factor.<sup>805</sup> NS accepts DuPont's ballast layer specifications, and the Board will accept the parties' agreements.<sup>806</sup> NS states that while DuPont claims to use a conversion factor of 1.5 tons of ballast/CY its workpapers use the lower 1.35 tons of ballast/CY.<sup>807</sup> NS corrects DuPont's workpapers to reflect the use of 1.5 tons of ballast/CY.<sup>808</sup> NS also states that DuPont's calculations of the ballast cross sections are flawed and that it did not submit evidence demonstrating how those calculations were arrived at.<sup>809</sup> NS states that it was unable to replicate DuPont's calculations and that they appear to understate the necessary quantities for the DRR.<sup>810</sup> For these reasons, NS used its own cross section quantities to determine ballast quantities and corrected DuPont's cross sections with track configurations specific to the DRR.<sup>811</sup>

DuPont argues that its narrative text was wrong, while its workpapers were correct and a conversion factor of 1.35 is appropriate.<sup>812</sup> DuPont states that NS should have been aware of this as it uses a conversion factor of 1.32 in its normal course of business.<sup>813</sup> DuPont rejects NS's corrections and relies upon a conversion factor of 1.35 on rebuttal.<sup>814</sup>

DuPont disputes NS's inability to replicate its cross sectional area calculations given that NS could replicate its sub-ballast calculations.<sup>815</sup> DuPont states that no calculations for NS's

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<sup>804</sup> DuPont Opening III-F-26 to III-F-27.

<sup>805</sup> NS Reply III-F-119 to III-F-120.

<sup>806</sup> NS Reply III-F-120.

<sup>807</sup> NS Reply III-F-120.

<sup>808</sup> NS Reply III-F-121.

<sup>809</sup> NS Reply III-F-121.

<sup>810</sup> NS Reply III-F-121.

<sup>811</sup> NS Reply III-F-122 to III-F-23.

<sup>812</sup> DuPont Rebuttal III-F-74.

<sup>813</sup> DuPont Rebuttal III-F-74.

<sup>814</sup> DuPont Rebuttal III-F-74.

<sup>815</sup> DuPont Rebuttal III-F-74 to III-F-75.



cross sections could be found in its workpapers.<sup>816</sup> For that reason, DuPont states that it will continue to rely upon its cross sectional area calculations submitted on opening.<sup>817</sup>

The Board will accept the use of a conversion factor of 1.50 tons of ballast per CY, because this is the number DuPont stated in its narrative and NS acted in reliance upon the number. The Board will also accept DuPont's quantities for ballast sections and its method for determining ballast quantities for track configurations because DuPont's figures result in quantities that are greater for a majority of the track in the DRR than those claimed by NS and are likely more representative of actual quantities.

**c. Unit Costs**

To develop ballast unit costs, DuPont used direct quotes from suppliers and historical pricing data obtained from NS in discovery.<sup>818</sup> DuPont developed delivery costs for ballast using shipping distances from sources to the railheads throughout the DRR, which were then multiplied by the transportation charge used in AEPCO, \$0.035 per mile.<sup>819</sup> These costs were then totaled and averaged to develop an average cost per CY for ballast.<sup>820</sup>

NS accepts DuPont's use of averaging NS's supplier prices, but adds two additional suppliers to fill a gap in the proposed DRR supply network.<sup>821</sup> NS states that the DRR is not yet built, and will therefore have to rely upon third-party carriers to transport ballast materials to the railheads and that the ballast quarries used by NS presently may not be optimally located for the construction of the DRR.<sup>822</sup> Using a composite map, NS argues that a large supply gap would exist in the central portion of the DRR network due to numerous obstructions to the deployment of unit rail trains of ballast.<sup>823</sup> NS adds suppliers from Uniontown, PA and Tateville, KY.<sup>824</sup> NS obtained price quotes from these two additional suppliers, indexed them to 2009, and added these to the prices provided to DuPont.<sup>825</sup> NS contends that because a substantial portion of

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<sup>816</sup> DuPont Rebuttal III-F-75.

<sup>817</sup> DuPont Rebuttal III-F-75.

<sup>818</sup> DuPont Opening III-F-27.

<sup>819</sup> DuPont Opening III-F-27.

<sup>820</sup> DuPont Opening III-F-27.

<sup>821</sup> NS Reply III-F-123.

<sup>822</sup> NS Reply III-F-123.

<sup>823</sup> NS Reply III-F-123 to III-F-124.

<sup>824</sup> NS Reply III-F-124.

<sup>825</sup> NS Reply III-F-124.

ballast would be supplied from these two suppliers, each quarry unit price was weighted to the average tons provided by the top six quarries NS purchased ballast from.<sup>826</sup> NS submits a revised unit price of \$8.82 before transportation costs.<sup>827</sup>

NS argues that DuPont's unit costs are skewed because it has underestimated the transportation costs for ballast.<sup>828</sup> NS contends that DuPont's transportation costs are "predicated on an assumption that all ballast will be transported an average of 100 miles at a single flat rate of 0.035 cents per-ton mile."<sup>829</sup> NS states that this assumption is unsupported and unrealistic.<sup>830</sup> NS argues that the DRR would incur two separate kinds of transportation costs: 1) third-party transportation to railheads, and 2) movement from railheads to locations where it would be placed.<sup>831</sup> NS states that the simultaneous construction over a wide geographic area will create construction gaps making the DRR's own lines unavailable to transport ballast material and that DuPont must pay for transportation just as real world railroads must do.<sup>832</sup> NS states it conducted a detailed analysis to identify the ballast sources and transportation alternatives to each DRR railhead, and then calculated an average transportation distance from these sources to the railheads.<sup>833</sup> NS submits an average of 132.4 miles from quarry to railhead and then used this average in its calculations for ballast transportation cost by third parties.<sup>834</sup>

NS states that DuPont has not submitted separate costs for transporting ballast materials from the railhead to the location on the track where it will be placed.<sup>835</sup> NS argues that DuPont's quote for ballast on-line transportation, and distribution does not include transportation to the point of placement, and that NS adds the costs to correct for the omission.<sup>836</sup> To estimate the costs, NS states that the 102 construction contracts will average 71.3 route miles each, and that

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<sup>826</sup> NS Reply III-F-124.

<sup>827</sup> NS Reply III-F-124.

<sup>828</sup> NS Reply III-F-123.

<sup>829</sup> NS Reply III-F-125.

<sup>830</sup> NS Reply III-F-125.

<sup>831</sup> NS Reply III-F-125.

<sup>832</sup> NS Reply III-F-125 to III-F-126.

<sup>833</sup> NS Reply III-F-126 to III-F-127.

<sup>834</sup> NS Reply III-F-127 to III-F-128.

<sup>835</sup> NS Reply III-F-128.

<sup>836</sup> NS Reply III-F-128 to III-F-129.

NS assumed the ballast would have to be transported an average of 35.67 miles, or half of the average contract construction distance.<sup>837</sup>

Moreover, NS states that DuPont understates ballast transportation costs by using on-line transportation costs to estimate off-line transportation costs.<sup>838</sup> NS argues that while the cost of \$0.035 per ton-mile is taken from AEPCO it was not accepted by the Board for off-line transportation.<sup>839</sup> NS further argues that the use of \$0.035 is inappropriate because it reflects a cost from 1994.<sup>840</sup> NS contends that “DuPont provided no evidence of current costs for transporting ballast on [NS] or on third party railroads, and accordingly may not do so on rebuttal.”<sup>841</sup> NS contacted Vulcan Materials Company for a rate to transport ballast materials. Using this rate, NS determined that the per-car cost for transporting ballast is \$0.072 per ton mile indexed to 2009.<sup>842</sup> NS states that it adopts DuPont’s \$0.035 per ton-mile cost where transportation would be accomplished over DRR track.<sup>843</sup> NS states that this results in a weighted average of \$0.064 per-ton mile, which it applied to the total ballast transportation distance of 168.1 miles.<sup>844</sup>

DuPont states that its ballast costs were derived from averaging the costs of ballast from twelve sources provided in discovery.<sup>845</sup> DuPont states that it relied upon NS’s discovery information and that the two additional ballast suppliers were not identified in discovery.<sup>846</sup> DuPont argues that NS should be precluded from modifying that information since DuPont acted in reliance upon NS’s discovery materials.<sup>847</sup>

The Board will reject NS’s additional ballast sources and associated cost adjustments, because this material was not supplied in discovery and DuPont acted in reliance upon the

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<sup>837</sup> NS Reply III-F-129.

<sup>838</sup> NS Reply III-F-129.

<sup>839</sup> NS Reply III-F-129 to III-F-130.

<sup>840</sup> NS Reply III-F-130.

<sup>841</sup> NS Reply III-F-130 (citing General Procedures For Presenting Evidence in Stand-Alone Cost Rate Cases, 5 S.T.B. 441, 445-46 (2001)).

<sup>842</sup> NS Reply III-F-130 to III-F-131.

<sup>843</sup> NS Reply III-F-131.

<sup>844</sup> NS Reply III-F-131.

<sup>845</sup> DuPont Rebuttal III-F-76.

<sup>846</sup> DuPont Rebuttal III-F-76.

<sup>847</sup> DuPont Rebuttal III-F-76.

materials and information NS actually provided. Therefore, the Board will accept DuPont's ballast unit costs. The Board will also accept DuPont's 100 mile transport distance from the various quarries to the DRR railheads because we are rejecting the additional quarry sources which NS used to adjust the average distance between the quarries and the railheads.

On rebuttal, DuPont discovered two mistakes in its opening evidence: (1) the use of NS's 2010 average ballast costs instead of 2009, and (2) the use of the mainline price per track-foot instead of the yard set-out track price for ballast.<sup>848</sup> NS used the 2009 average costs, and therefore DuPont will use the 2009 price without modification.<sup>849</sup> DuPont does correct its overstatement of ballast costs for yard and set-out tracks.<sup>850</sup> The Board will accept DuPont's corrections, because the corrections do not prejudice NS.

DuPont rebuts NS's increase of the average haul distance for ballast from the quarry to the DRR railheads, which NS referred to as off-line transportation.<sup>851</sup> DuPont states that NS's inclusion of additional resources makes NS's figure unusable and that NS's average is not significantly higher than DuPont's average.<sup>852</sup> DuPont argues, under the theory of unconstrained resources, that it assumed sufficient ballast resources within an average of 100 miles of the DRR railheads and that this is no different than NS's assumption of sub-ballast suppliers at an average of 40 miles.<sup>853</sup> DuPont continues to rely upon its opening average haul of 100 miles for off-line transportation.<sup>854</sup> DuPont does agree with NS and has added 35.7 miles for on-line transportation to the 100 miles for off-line transportation, and the Board will accept the parties' agreement on this point.<sup>855</sup> As discussed above, the Board will accept DuPont's average haul of 100 miles for off-line transportation, and accept the parties' agreement with regards to the addition of 35.7 miles for on-line transportation.

DuPont contends that NS's reading of AEPCO is incorrect and that the \$0.035 cost used for off-line transportation was also the ballast transportation costs.<sup>856</sup> Furthermore, DuPont notes

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<sup>848</sup> DuPont Rebuttal III-F-76 to III-F-77.

<sup>849</sup> DuPont Rebuttal III-F-76.

<sup>850</sup> DuPont Rebuttal III-F-77.

<sup>851</sup> DuPont Rebuttal III-F-77.

<sup>852</sup> DuPont Rebuttal III-F-77.

<sup>853</sup> DuPont Rebuttal III-F-77.

<sup>854</sup> DuPont Rebuttal III-F-77.

<sup>855</sup> DuPont Rebuttal III-F-77.

<sup>856</sup> DuPont Rebuttal III-F-78.

that NS has accepted the use of \$0.035 per ton-mile for the transportation of culverts without any objection. DuPont maintains the use of \$0.035 per ton-mile transportation cost on rebuttal.<sup>857</sup>

The Board will accept NS's unit costs for off-line transportation and apply it to the 100 mile average in determining average unit transportation costs for off-line transportation, because NS's transportation cost quote from its ballast supplier is the only evidence of record. The Board will accept DuPont's unit costs for on-line transportation because NS has accepted DuPont's evidence for those costs. Moreover, as discussed above, DuPont agreed to NS's estimate for the addition of on-line transportation miles.

## 2. Cross Ties

On opening, DuPont states that the DRR will utilize wood ties and that the Board has accepted wood tie spacing of 20.5 inches for mainline track in previous SAC cases.<sup>858</sup> DuPont states, that for set-out yards they will use wood ties with spacing of 24 inches because of lighter traffic and slower speeds.<sup>859</sup> DuPont selected standard Grade 5 treated hardwood railroad ties, and based its unit costs on quotes received from Tangent Rail.<sup>860</sup> DuPont then added transportation costs of \$0.035 per ton-mile based on the average distance to railheads.<sup>861</sup>

NS accepts DuPont's proposed tie type and spacing specification, and the Board will accept the parties' agreement.<sup>862</sup>

NS argues that DuPont's weights for the cross ties are unsupported and incorrect.<sup>863</sup> NS states that DuPont submitted an estimate of 223.125 pounds for the weight of a single crosstie.<sup>864</sup> NS states that it contacted the Railroad Tie Association and that they estimated that an untreated tie weighs 218 pounds, and that the treatment process would add 25 pounds for creosote, and

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<sup>857</sup> DuPont Rebuttal III-F-79.

<sup>858</sup> DuPont Opening III-F-27.

<sup>859</sup> DuPont Opening III-F-27.

<sup>860</sup> DuPont Opening III-F-27.

<sup>861</sup> DuPont Opening III-F-27.

<sup>862</sup> NS Reply III-F-136.

<sup>863</sup> NS Reply III-F-136.

<sup>864</sup> NS Reply III-F-136.

average moisture content would add 12.5 pounds.<sup>865</sup> NS argues therefore, that the total average weight for a tie would be 255.5 pounds, which NS uses in calculating transportation costs.<sup>866</sup>

NS agrees with the methodology DuPont employs to arrive at a unit cost for ties.<sup>867</sup> NS argues, however, that DuPont made three errors in price, transportation miles, and transportation costs.<sup>868</sup> NS states that the Tangent Rail price quotes in DuPont's workpapers do not match the corresponding spreadsheet.<sup>869</sup> Rather than the \$40 figure used, NS states the workpapers show a Tangent Rail price quote of \$44.50 per tie.<sup>870</sup> NS therefore argues that the proffered cost is unsupported and should be rejected.<sup>871</sup> NS states, accepting the Tangent Rail quote and indexing it back to 2009 is more expensive than the next lowest price quote in DuPont's workpapers, \$41.89 per tie from McCord Tie and Timber. NS relies on the McCord Tie and Timber tie price.<sup>872</sup>

NS states, that while DuPont selects the tie price of one supplier, it also averages the distance from multiple suppliers to the DRR railheads.<sup>873</sup> NS argues that if DuPont wishes to use the lowest tie quote it must also account for transportation costs from the lowest tie manufacturer, which is located on a CSXT line.<sup>874</sup> NS states that it included appropriate calculations to account for this change.<sup>875</sup>

NS contends that DuPont's use of a \$0.035/per-ton mile cost for transportation is unreasonable for the same reasons detailed in the ballast argument, detailed above.<sup>876</sup> Using a quote from McCord Tie and Timber, NS calculated the costs of tie transportation at \$6,000 per

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<sup>865</sup> NS Reply III-F-136.

<sup>866</sup> NS Reply III-F-136.

<sup>867</sup> NS Reply III-F-136.

<sup>868</sup> NS Reply III-F-136.

<sup>869</sup> NS Reply III-F-137.

<sup>870</sup> NS Reply III-F-137.

<sup>871</sup> NS Reply III-F-137.

<sup>872</sup> NS Reply III-F-137.

<sup>873</sup> NS Reply III-F-137.

<sup>874</sup> NS Reply III-F-138.

<sup>875</sup> NS Reply III-F-138.

<sup>876</sup> NS Reply III-F-138.

specialized railcar for a 590-mile delivery.<sup>877</sup> Indexing this cost to 2009, NS calculates the crosstie transportation cost to be \$0.0874 per ton/mile.<sup>878</sup>

On rebuttal, DuPont accepts NS's costs for ties, and the Board will accept the parties' agreement.<sup>879</sup>

DuPont rejects NS's change to tie weights.<sup>880</sup> DuPont states that its weight was calculated using the publicly available AREMA specifications.<sup>881</sup> DuPont also argues that NS's use of only one crosstie supplier is a violation of the theory of unconstrained resources.<sup>882</sup> DuPont states that there is no reason to believe other suppliers would not match the tie price and that NS's argument is not consistent with its ballast or sub-ballast sourcing argument.<sup>883</sup> DuPont continues to rely on its opening evidence. DuPont also rejects NS's increase to the transportation costs for ties based on reasons previously discussed.<sup>884</sup>

The Board will accept NS's tie weight because it is the best supported evidence on record and the Rail Road Tie Association's information is more reliable than that provided by AREMA. The Board finds the Rail Road Tie Association's information more reliable because it is derived from actual manufacturers of rail road ties. The Board will accept NS's transportation costs because the selection of a single tie price will determine the manufacturer and thus the distance from the tie factory to the railhead.

### **3. Crossing Diamonds**

The parties agree on the costs and quantities for crossing diamonds, and the Board will accept the parties' agreement.

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<sup>877</sup> NS Reply III-F-138.

<sup>878</sup> NS Reply III-F-138.

<sup>879</sup> DuPont Rebuttal III-F-80.

<sup>880</sup> DuPont Rebuttal III-F-80.

<sup>881</sup> DuPont Rebuttal III-F-80.

<sup>882</sup> DuPont Rebuttal III-F-81.

<sup>883</sup> DuPont Rebuttal III-F-81.

<sup>884</sup> DuPont Rebuttal III-F-81.

**4. Derail and Wheel Stops**

The parties agree on the costs and quantities for derail and wheel stops, and the Board will accept the parties' agreement.

**5. Field Welds**

The parties agree on the costs and quantities of field welds, and the Board will accept the parties' agreement.

**6. Geotextiles**

On opening, DuPont states that it will utilize geotextile fabric under turnouts at at-grade crossings.<sup>885</sup> DuPont states that the cost for at-grade crossings already includes the cost for fabric, so the quantities it submitted concern the amounts required for turnouts.<sup>886</sup> DuPont asserts that the DRR requires a total of 1,985,028 SF (square feet) of geotextile fabric at a cost of \$2.4 million for turnouts.<sup>887</sup>

NS accepts DuPont's assertion that at-grade crossing costs already contain costs for geotextile fabric, and the Board accepts the parties' agreement.<sup>888</sup> NS, however, states that DuPont understates the costs of geotextile fabric for turnouts by failing to provide enough material to cover entire turnouts.<sup>889</sup> NS contends that DuPont wrongly assumes that fabric is only necessary from the frog area to the end of the turnout long ties, roughly half the required length of the turnouts.<sup>890</sup> NS accepts DuPont's geotextile price of \$1.20 per square yard and applies this material cost to its SF calculation for all of the turnouts, including the additional turnouts required by NS operating plan.<sup>891</sup> NS submits a total requirement of 4.0 million square yards of geotextile fabric at a total cost of \$24.8 million.<sup>892</sup>

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<sup>885</sup> DuPont Opening III-F-25.

<sup>886</sup> DuPont Opening III-F-25.

<sup>887</sup> DuPont Opening III-F-25.

<sup>888</sup> NS Reply III-F-118.

<sup>889</sup> NS Reply III-F-118.

<sup>890</sup> NS Reply III-F-118 to III-F-119.

<sup>891</sup> NS Reply III-F-119.

<sup>892</sup> NS Reply III-F-119.



On rebuttal, DuPont contends that it did not understate fabric quantities, as NS asserts, but rather that NS misunderstood DuPont's unit costs and its calculation methodology.<sup>893</sup> DuPont states that in reviewing NS's submissions it discovered a few errors in its quantity and cost calculations, and that it corrected this on rebuttal.<sup>894</sup> DuPont's unit cost was intended to be \$1.60 per track foot, which was applied to track feet quantities, but was inadvertently mislabeled as square yards.<sup>895</sup> DuPont states that correcting the error provides enough material for turnouts.<sup>896</sup> DuPont states that NS has applied geotextile fabric to the entire roadbed, and it is not necessary as the loads are transferred at a 1:1 slope from the edge of the tie.<sup>897</sup> DuPont corrects its quantity calculations and applies the agreed upon unit costs of \$1.20 per square yard.<sup>898</sup>

The parties agree on the costs per square yard for geotextile fabrics, and the Board will accept the parties' agreement. Roadbed construction requires that the entire roadbed be covered in geotextile fabric, as NS has provided for in its evidence. The Board will accept NS's geotextile quantities because NS has submitted quantities sufficient to cover the entire DRR roadbed. Moreover, the Board has accepted NS's system configuration, and hence NS's additional number of turnouts, which further necessitates the acceptance of NS's geotextile quantities to account for these additional items.

## **7. Material Transportation**

No general material transportation issue exists between the parties in this case. The parties have proposed transportation costs specific to each item, and we have addressed transportation costs in the relevant sections.

## **8. OTM/Spikes-Plates-Anchors**

DuPont states on opening that the DRR is using wood ties with cut spikes to hold the rail to the tie plate and the tie plate to the tie, and to provide lateral restraint to the gauge.<sup>899</sup> DuPont proposes to use two spikes per tie plate for track with less than 3 degrees of curve, four spikes

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<sup>893</sup> DuPont Rebuttal III-F-72.

<sup>894</sup> DuPont Rebuttal III-F-72.

<sup>895</sup> DuPont Rebuttal III-F-72.

<sup>896</sup> DuPont Rebuttal III-F-73.

<sup>897</sup> DuPont Rebuttal III-F-73.

<sup>898</sup> DuPont Rebuttal III-F-73.

<sup>899</sup> DuPont Opening III-F-30.

per plate for curves of 3 to 6 degrees, and five spikes for any curve above 6 degrees.<sup>900</sup> DuPont states that anchors are used on both sides of every other tie where curves do not exceed 3 degrees and on both sides of every tie where curves exceed 3 degrees, and for 200 feet on each end of grade crossings.<sup>901</sup> DuPont submits a total cost of \$855 million.<sup>902</sup>

NS accepts DuPont's basic specifications and unit costs for plates, spikes, and anchors.<sup>903</sup> The Board will accept the parties' agreement on basic specifications and unit costs for plates, spikes, and anchors.

NS argues, however, that DuPont has failed to properly calculate transportation costs by misstating the transportation distances using an unsupported transportation cost.<sup>904</sup> NS states that DuPont has ignored the transportation costs associated with moving the materials from the railhead to the construction location.<sup>905</sup> To correct this, NS states that it added an average on-DRR shipping distance for other track materials to obtain a total transportation distance.<sup>906</sup> NS argues that DuPont uses the unsupported \$0.035/ton-mile shipping cost for other track material, as discussed above.<sup>907</sup> NS argues that a real-world estimate of other track material delivery costs amounts to \$0.0906 per ton-mile, which NS applied to calculate transportation costs for other track materials.<sup>908</sup>

On rebuttal, DuPont accepts NS's additional transportation miles to account for transportation of the materials from the railhead to the construction site, while rejecting NS's increased transportation unit costs for reasons previously discussed.<sup>909</sup>

The Board will accept NS's transportation unit costs as the best evidence of record because it represents a current, and therefore, more accurate reflection of the transportation costs.

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<sup>900</sup> DuPont Opening III-F-30.

<sup>901</sup> DuPont Opening III-F-31.

<sup>902</sup> DuPont Opening III-F-31.

<sup>903</sup> NS Reply III-F-150.

<sup>904</sup> NS Reply III-F-150.

<sup>905</sup> NS Reply III-F-150.

<sup>906</sup> NS Reply III-F-150.

<sup>907</sup> NS Reply III-F-150.

<sup>908</sup> NS Reply III-F-150.

<sup>909</sup> DuPont Rebuttal III-F-84.

The Board will accept NS's total quantities of spikes, plates, and anchors because the Board is accepting the NS operating plan.

## 9. Rail (Track)

On opening, DuPont states that the DRR will utilize 136-pound continuous welded rail (CWR) for most of the DRR's main tracks and passing sidings, and premium rail for curves 3 degrees and greater.<sup>910</sup> For those areas of the DRR that are lighter in density, DuPont states the DRR will use 115-pound rail.<sup>911</sup> DuPont submits a total delivered cost of \$872 per ton for mainline rail.<sup>912</sup> DuPont states that the rail will be distributed by the rail installation contractor and distribution costs are included in the contract's labor charges.<sup>913</sup> DuPont's total cost for mainline rail is \$1,744 million.<sup>914</sup> DuPont states that it will use 115-pound CWR rail for yard, helper pocket tracks, and set out tracks with a total delivered cost of \$769 million.<sup>915</sup> Similar to DuPont's mainline track evidence, DuPont states that the price includes delivery to the DRR's railheads and installation by the contractor.<sup>916</sup>

NS accepts DuPont's rail specifications, and the Board will accept the parties' agreement.<sup>917</sup> NS states that DuPont obtained the cost of \$872 per ton from NS's 2009 R-1, which does not include sufficient transportation costs for haulage over NS's mainlines.<sup>918</sup> NS accepts this cost, but also adds a cost for transporting rail from the manufacturer to the railhead.<sup>919</sup> NS states that the DRR would not have its own tracks over which to transport the rails during the DRR's construction, and it would therefore have to pay additional costs to transport the materials from the supplier to the construction railheads.<sup>920</sup> NS obtained a quote from L.B. Foster for full trains of CWR. NS submits that a fully loaded 30-car rail train carrying

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<sup>910</sup> DuPont Opening III-F-28.

<sup>911</sup> DuPont Opening III-F-28.

<sup>912</sup> DuPont Opening III-F-28.

<sup>913</sup> DuPont Opening III-F-28.

<sup>914</sup> DuPont Opening III-F-28.

<sup>915</sup> DuPont Opening III-F-28.

<sup>916</sup> DuPont Opening III-F-28.

<sup>917</sup> NS Reply III-F-139.

<sup>918</sup> NS Reply III-F-139.

<sup>919</sup> NS Reply III-F-139.

<sup>920</sup> NS Reply III-F-139 to III-F-140.

80,000 linear feet of track will cost \$5,067 per car plus a fuel surcharge of \$0.41 per mile.<sup>921</sup> NS states that indexing this quote to 2009 results in a transportation cost of \$7.90 per track foot.<sup>922</sup>

NS also contends that “DuPont’s rail unloading costs are flawed because they omit the costs of locomotives and crews to operate rail trains.”<sup>923</sup> NS argues that the DRR would need specially outfitted trains in order to deliver rail from the supplier to the construction railhead.<sup>924</sup> NS calculates that a rail train carrying fifty-five 1,440 strings of CWR contains approximately 7.58 miles of rail.<sup>925</sup> NS then uses DuPont’s anticipated construction rate of 0.5 miles per day and its estimate that it would take 2.5 weeks working six days a week to unload a rail train.<sup>926</sup> NS further assumes that it would take one rail train approximately one month to make the complete cycle between the railhead and the welding plant.<sup>927</sup> NS obtained a third-party quote to rent a 30-car rail train at \$27,000 per month at a daily charge of \$1,700.<sup>928</sup> NS submits a total combined cost of rail train rental for transport and unloading at \$1.10 per track foot.<sup>929</sup> NS states that it used documents available to DuPont in discovery to estimate a work train crew cost of \$0.82 per track foot.<sup>930</sup> Taken together, NS states that the total additional cost per-track foot for rail handling is \$1.92.<sup>931</sup>

DuPont states on rebuttal that NS’s addition of transportation costs creates a double count by adding charges paid to foreign lines, which are already included in the costs of the rail.<sup>932</sup> DuPont argues that NS fails to identify any rail sources, their locations in relation to NS’s lines, and does not provide evidence of distance traveled over foreign lines.<sup>933</sup> DuPont states that absent supporting evidence it rejects what it considers the double-count of foreign line

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<sup>921</sup> NS Reply III-F-141.

<sup>922</sup> NS Reply III-F-141.

<sup>923</sup> NS Reply III-F-141.

<sup>924</sup> NS Reply III-F-141.

<sup>925</sup> NS Reply III-F-143.

<sup>926</sup> NS Reply III-F-143.

<sup>927</sup> NS Reply III-F-143.

<sup>928</sup> NS Reply III-F-143.

<sup>929</sup> NS Reply III-F-143.

<sup>930</sup> NS Reply III-F-144.

<sup>931</sup> NS Reply III-F-144.

<sup>932</sup> DuPont Rebuttal III-F-82.

<sup>933</sup> DuPont Rebuttal III-F-83.

transportation costs.<sup>934</sup> DuPont does accept the additional cost of \$1.92 per track-foot for unloading costs, and the Board will accept the parties' agreement.<sup>935</sup>

The Board will accept the parties' agreed to price for the rail, and will accept NS's total costs because we are accepting NS's system configuration and track mile estimates. Although the parties agree on the price of the rail, NS claims that DuPont failed to properly account for the cost of transporting the rail from the manufacturer to the railheads. However, we agree with DuPont that NS has not justified the inclusion of these additional transportation costs, and therefore, the costs are rejected.

#### **10. Rail Lubricators**

The parties agree to unit costs and quantities for rail lubricators, and the Board will accept the parties' agreement.

#### **11. Subballast**

DuPont developed unit costs and quantities for subballast from the Trestle Hollow Project, which includes costs for delivery, and placement on the roadbed.<sup>936</sup> DuPont proposes to use 6 inches of subballast on all mainline tracks and 4 inches on yard and set out tracks.<sup>937</sup> DuPont states that quantities were developed for all sections of track based on the lengths of track sections discussed above in the roadbed section and proposes a total cost of ballast and subballast of \$1,153 million.<sup>938</sup>

NS accepts DuPont's specifications for material and its design plan.<sup>939</sup> NS also accepts DuPont's subballast cross sections for mainline track, and corrects DuPont's yard and siding tracks to reflect DuPont's narrative statement that these areas will use four inches of subballast.<sup>940</sup> The Board accepts the parties' agreements. NS, however, rejects DuPont's assertion that subballast will be sourced from the same locations as ballast because it does not

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<sup>934</sup> DuPont Rebuttal III-F-83.

<sup>935</sup> DuPont Rebuttal III-F-83.

<sup>936</sup> DuPont Opening III-F-27.

<sup>937</sup> DuPont Opening III-F-25 to III-F-26.

<sup>938</sup> DuPont Opening III-F-27.

<sup>939</sup> NS Reply III-F-131.

<sup>940</sup> NS Reply III-F-132.

account for the need for subballast delivery by truck.<sup>941</sup> NS also states, as it did in the ballast section, that it changes the conversion factor to match the conversion factor used in DuPont's narrative of 1.50 tons per cubic yard.<sup>942</sup>

NS argues that DuPont's subballast unit price of \$13.00 per ton, derived from the Trestle Hollow Project is unreasonable given the size, complexity, and scope of the DRR.<sup>943</sup> NS states that it identified suppliers from various locations along the DRR route and obtained material and transportation price quotes from those suppliers.<sup>944</sup> NS assumes a 40 mile average delivery distance, which would allow for a supplier every 160 miles along the DRR.<sup>945</sup> NS states that the average price for subballast is \$12.28.<sup>946</sup> NS states that it would not be a reasonable assumption for the DRR to obtain subballast materials from the same suppliers providing ballast materials because it is not economical to transport subballast by rail.<sup>947</sup> Furthermore, NS states, shipment via rail can degrade subballast quality and thus delivery by truck is necessary.<sup>948</sup>

NS states that once the subballast materials are delivered to the construction site they must be dumped, shaped, and compacted on the finished roadbed.<sup>949</sup> NS argues that DuPont's evidence does not provide for this cost.<sup>950</sup> NS submits a cost of \$3.80 per ton to account this subballast work.<sup>951</sup>

As discussed above in the ballast section, DuPont relies upon its 1.35 tons per cubic yard workpaper conversion factor in its workpapers, but uses 1.50 tons per cubic yard conversion factor for subballast materials in its narrative discussion.<sup>952</sup> On rebuttal, DuPont argues that it overstated the amount of subballast needed and did not err in its calculations as NS contends

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<sup>941</sup> NS Reply III-F-131 to III-F-132.

<sup>942</sup> NS Reply III-F-132.

<sup>943</sup> NS Reply III-F-133.

<sup>944</sup> NS Reply III-F-133.

<sup>945</sup> NS Reply III-F-133.

<sup>946</sup> NS Reply III-F-133.

<sup>947</sup> NS Reply III-F-134.

<sup>948</sup> NS Reply III-F-134.

<sup>949</sup> NS Reply III-F-135.

<sup>950</sup> NS Reply III-F-135.

<sup>951</sup> NS Reply III-F-135.

<sup>952</sup> DuPont Rebuttal III-F-74.

because it built all sidings and side-by-side tracks as individuals tracks.<sup>953</sup> DuPont accepts NS correction to subballast calculations in order to account for a depth of 6 inches.<sup>954</sup>

DuPont maintains that the Trestle Hollow Project is representative of subballast unit costs.<sup>955</sup> DuPont argues that NS's unit costs are overstated because it did not submit costs from an actual project but instead obtained price quotes from various suppliers and utilized Means.<sup>956</sup> DuPont argues further that because subballast material requirements are less stringent than ballast requirements its \$13.00 per ton unit cost is conservative.<sup>957</sup>

As discussed above, the Board will use DuPont's narrative conversion factor of 1.50 tons per cubic yard because this is the number DuPont stated in its narrative and NS acted in reliance upon the number. The Board will also accept NS's costs and quantities for subballast because, as discussed above, the Board is rejecting the use of Trestle Hollow Project. As such, NS's price quotes from various suppliers and its use of Means represent the best evidence of record.

## 12. Switch Heaters

On opening, DuPont did not discuss switch heaters in its narrative evidence but submitted workpaper evidence with the costs hardcoded into the spreadsheets. DuPont places switch heaters on two thirds (14/20) of its estimated total number of turnouts.

NS accepts the costs for switch heaters contained in DuPont's workpapers, and the Board will accept the parties' agreement.<sup>958</sup> NS disagrees with DuPont's transportation costs for switch heaters based on the \$0.035/ton-mile as discussed above.<sup>959</sup>

On rebuttal, DuPont continues to use the previously submitted transportation cost of \$0.035/ton-mile.<sup>960</sup> DuPont argues that the "differences in total costs are also caused by NS's

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<sup>953</sup> DuPont Rebuttal III-F-75.

<sup>954</sup> DuPont Rebuttal III-F-75.

<sup>955</sup> DuPont Rebuttal III-F-79.

<sup>956</sup> DuPont Rebuttal III-F-80.

<sup>957</sup> DuPont Rebuttal III-F-80.

<sup>958</sup> NS Reply III-F-148.

<sup>959</sup> NS Reply III-F-147.

<sup>960</sup> DuPont Rebuttal III-F-83.

inflated turnout count caused by overstatements in route miles, yard tracks, work sidings, set-out tracks and interchange tracks as discussed in Part III-B.”<sup>961</sup>

The Board will accept NS’s switch heater quantities because the Board is accepting NS’s system configuration. The Board will also accept NS’s switch heater transportation costs because they are based on recent real world quotes rather than an outdated transportation rate from a previous rate case, and therefore they represent the best evidence of record.

### **13. Track Labor and Equipment**

DuPont states that it obtained labor quotes for track construction from Queen City Railroad Construction and RailWorks and that it obtained bid prices from several NS construction projects.<sup>962</sup> DuPont states that it has used the lowest quote or bid for track construction in various material categories.<sup>963</sup> DuPont submits a total cost for track labor of \$1,562 million.<sup>964</sup>

NS states that DuPont’s quotes from Queen City Railroad Construction and RailWorks assumes the size of the individual rail construction project is 50 miles, and that NS agrees with this assumption.<sup>965</sup> The parties also agree on labor costs, and the Board will accept the parties’ agreements. NS states that it has added the necessary transportation costs to account for the transportation of track material from the construction railheads to their place on the construction site.<sup>966</sup> As DuPont notes, however, these transportation costs are addressed in each of the foregoing individual sections and therefore need not be included here as well.<sup>967</sup>

### **14. Switches (Turnouts)**

DuPont states that it has estimated the number and size of turnouts based upon its DRR stick diagrams, and that turnouts were included for the yards and connections to DRR served

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<sup>961</sup> DuPont Rebuttal III-F-83.

<sup>962</sup> DuPont Opening III-F-32.

<sup>963</sup> DuPont Opening III-F-32.

<sup>964</sup> DuPont Opening III-F-32.

<sup>965</sup> NS Reply III-F-156.

<sup>966</sup> NS Reply III-F-156.

<sup>967</sup> DuPont Rebuttal III-F-85.



customers.<sup>968</sup> DuPont states that it developed unit costs by obtaining quotes from vendors for all materials necessary for turnout construction.<sup>969</sup>

NS states that it generally accepts DuPont's approach to switches and that it has obtained quotes for all of the materials required for turnouts.<sup>970</sup> NS argues that DuPont has made numerous mistakes for individual turnouts and in its calculation of shipping costs.<sup>971</sup> NS states that DuPont has purchased panelized turnouts, which can only be delivered by rail.<sup>972</sup> NS argues that DuPont has not provided correct shipping weights for panelized turnouts.<sup>973</sup> NS states that it developed shipping weights from publicly available UP/BNSF turnout standards, which only contained panel weights for No. 9, No. 11, and No. 15 turnouts.<sup>974</sup> To develop weight for a No. 10 turnout, NS averages the weight of No. 9 and No. 11 turnouts.<sup>975</sup> For the No. 14 turnout, NS proportionally decreases the weight of the No. 15 turnout.<sup>976</sup> To develop a weight estimate for the No. 20 turnout, NS proportionally increases the weight of the No. 15 turnout.<sup>977</sup> For each turnout, NS adds an additional 500 lbs. to account for the stand which is required for shipping.<sup>978</sup>

NS rejects DuPont's transportation costs of \$0.035/ton-mile.<sup>979</sup> NS obtained a quote from A&K Railroad Materials of \$4,000 per car for a 500 mile delivery.<sup>980</sup> NS indexes this cost to 2009 and submits a transportation cost of \$0.082 per ton-mile.<sup>981</sup>

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<sup>968</sup> DuPont Opening III-F-29.

<sup>969</sup> DuPont Opening III-F-29.

<sup>970</sup> NS Reply III-F-144 to III-F-145.

<sup>971</sup> NS Reply III-F-145.

<sup>972</sup> NS Reply III-F-145.

<sup>973</sup> NS Reply III-F-146.

<sup>974</sup> NS Reply III-F-146.

<sup>975</sup> NS Reply III-F-147.

<sup>976</sup> NS Reply III-F-147.

<sup>977</sup> NS Reply III-F-147.

<sup>978</sup> NS Reply III-F-147.

<sup>979</sup> NS Reply III-F-147.

<sup>980</sup> NS Reply III-F-147.

<sup>981</sup> NS Reply III-F-147.

DuPont accepts NS's turnout weights on rebuttal.<sup>982</sup> DuPont states that it rejects NS's transportation costs because they are inflated by overstatements in route miles, yard tracks, work siding, set-out tracks, and interchange tracks.<sup>983</sup>

The parties agree on unit costs and weights for turnouts, and the Board will accept the parties' agreement. The Board will accept NS's turnout quantities because it is accepting NS's system configuration. The Board will also accept NS's transportation costs because they are based on recent quotes from market providers and therefore are the best evidence of record.

#### **D. Tunnels**

TABLE B-11

| Tunnels     |                 |                 |                 |
|-------------|-----------------|-----------------|-----------------|
| Tunnel Type | DuPont          | NS              | STB             |
| 5           | \$320,933,727   | \$320,933,727   | \$320,933,727   |
| 4           | \$116,283,809   | \$116,283,809   | \$116,283,809   |
| 3           | \$107,847,716   | \$107,847,716   | \$107,847,716   |
| 2           | \$242,098,051   | \$242,098,051   | \$242,098,051   |
| 1           | \$294,027,005   | \$298,828,959   | \$294,027,005   |
| TOTAL       | \$1,081,190,307 | \$1,085,992,262 | \$1,081,190,307 |

DuPont states that the DRR's tunnel inventory and tunnel lengths were developed from materials supplied by NS in discovery.<sup>984</sup> DuPont states that its methodology for developing tunnel costs is consistent with previous Board precedent.<sup>985</sup> DuPont uses a base unit cost of \$2,561 per linear foot and indexes the cost to 2009, which produces a unit cost of \$7,280 per linear foot.<sup>986</sup> DuPont then multiplied this unit cost by the total feet of tunnels and submits a total tunnel cost of \$444 million.<sup>987</sup>

<sup>982</sup> DuPont Rebuttal III-F-83.

<sup>983</sup> DuPont Rebuttal III-F-83.

<sup>984</sup> DuPont Opening III-F-32.

<sup>985</sup> DuPont Opening III-F-32 to III-F-33.

<sup>986</sup> DuPont Opening III-F-32 to III-F-33.

<sup>987</sup> DuPont Opening III-F-33.

NS accepts the tunnel inventory and tunnel lengths that it provided to DuPont in discovery.<sup>988</sup> NS rejects DuPont's evidence that all except one of the tunnels would be single track, and it converts five of these tunnels from single to double track.<sup>989</sup> NS also adds a tunnel to the DRR's inventory, one which it states was open cut.<sup>990</sup> NS adds the original costs of constructing this additional tunnel to the DRR's tunnel costs, because the tunnel existed prior to the cut.<sup>991</sup>

NS also rejects the DuPont tunnel cost per linear foot as "unsupported . . . and contrary to Board precedent."<sup>992</sup> NS argues that its tunnel costs methodology is tailored specifically to the size of the tunnels on the DRR system.<sup>993</sup> Rather than develop a cost per linear foot as DuPont did, NS states that it used a tunnel construction cost per foot taken from a 1980 ICC decision in Coal Trading Corp. v. Baltimore & Ohio Railroad, 6 I.C.C. 2d 361, 422 (1990), and indexed that cost to 2009 using Means.<sup>994</sup> NS argues that DuPont has not attempted to show that the tunnels developed upon the 1980 cost resemble those on the DRR.<sup>995</sup> NS contends that DuPont has failed to meet its burden that those costs are for steel and concrete lining.<sup>996</sup> NS contends that DuPont is using costs for timber-lined tunnels and that they are more costly and less efficient over time.<sup>997</sup>

NS contends that tunnel construction costs have both a fixed and variable component neither of which is proportional to the length of the tunnel.<sup>998</sup> NS states the fixed costs consist of constructing the entrance to each end of the tunnel, while variable costs consist of excavation and

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<sup>988</sup> NS Reply III-F-156.

<sup>989</sup> NS Reply III-F-156.

<sup>990</sup> NS Reply III-F-157.

<sup>991</sup> NS Reply III-F-157.

<sup>992</sup> NS Reply III-F-157.

<sup>993</sup> NS Reply III-F-157.

<sup>994</sup> NS Reply III-F-157.

<sup>995</sup> NS Reply III-F-157 to III-F-158.

<sup>996</sup> NS Reply III-F-158.

<sup>997</sup> NS Reply III-F-158.

<sup>998</sup> NS Reply III-F-159.

tunnel support.<sup>999</sup> NS contends that three primary issues drive variable costs, the length of the tunnel, the number of tracks, and the tunnel lining.<sup>1000</sup>

NS divided the DRR tunnels into five separate groups based primarily on overall length to more accurately reflect the variable and fixed costs of tunnel construction.<sup>1001</sup> NS then separates the tunnels within each group to reflect single or double track and lined and unlined tunnels.<sup>1002</sup> NS states that it then used the characteristics of the tunnels within each group to create a hypothetical composite tunnel which is representative of each group to develop bottom-up costs estimates.<sup>1003</sup> NS submits the following table illustrating its tunnel categories.

TABLE B-12

| Length Classification Category | Number of Tunnels | Number of Tracks |        | Lining  |                    |
|--------------------------------|-------------------|------------------|--------|---------|--------------------|
|                                |                   | Single           | Double | Unlined | Lined              |
| 5000                           | 6                 | 5                | 1      | 0       | 6                  |
| 2500                           | 4                 | 4                | 0      | 0       | 4                  |
| 1500                           | 5                 | 5                | 0      | 0       | 5                  |
| 1000                           | 16                | 12               | 4      | 1       | 15                 |
| 650                            | 32                | 31               | 1      | 12      | 20                 |
| TOTAL                          | 63                | 57               | 6      | 13      | 50 <sup>1004</sup> |

NS states that it investigated the type of liners used in the tunnels replicated by the DRR and found that 12 tunnels were unlined, and that for costing purposes it assumed the open cut tunnel it added to the DRR's tunnel inventory was also unlined.<sup>1005</sup> For all other tunnels, NS states that it assumed an initial liner support and a final liner support of steel bar or steel set reinforced cast-in-place concrete lining.<sup>1006</sup> NS states that it determined the type of lining needed for the DRR's tunnels based on a sample of 22 tunnels from its recent Heartland Corridor

<sup>999</sup> NS Reply III-F-159.

<sup>1000</sup> NS Reply III-F-159.

<sup>1001</sup> NS Reply III-F-160.

<sup>1002</sup> NS Reply III-F-160.

<sup>1003</sup> NS Reply III-F-160.

<sup>1004</sup> NS Reply III-F-161.

<sup>1005</sup> NS Reply III-F-163.

<sup>1006</sup> NS Reply III-F-163.

Project that are similar to the lined tunnels found on the DRR.<sup>1007</sup> NS states that ground categories are typically used to establish both the quality of the ground and the type of lining support method the tunnel will require.<sup>1008</sup> NS divided the sample tunnels into three categories A, B, and C.<sup>1009</sup> NS states in category A the ground has higher strength than ground in category C, the lowest quality ground, with category B designating the quality in between.<sup>1010</sup> NS argues that typical tunnels will generally have 50% of category A, 32% of category B, and 18% of category C ground types.<sup>1011</sup> For tunnels with only categories A and B ground types, NS has assumed an initial support lining of less costly shotcrete and rock dowel, while assuming steel set support liners for tunnels with category C ground.<sup>1012</sup>

Having categorized the DRR's tunnels, NS developed detailed unit costs for each tunnel subcategory.<sup>1013</sup> NS also developed a Tunnel Cycle Time for each tunnel and provided costs estimates for the different types of tunnels outlined in the table below.

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<sup>1007</sup> NS Reply III-F-163.

<sup>1008</sup> NS Reply III-F-163 to III-F-164.

<sup>1009</sup> NS Reply III-F-164.

<sup>1010</sup> NS Reply III-F-164.

<sup>1011</sup> NS Reply III-F-164.

<sup>1012</sup> NS Reply III-F-164.

<sup>1013</sup> NS Reply III-F-164.

TABLE B-13

Summary of NS Reply Tunnel Cost by Category and Sub-Category (\$ thousands)<sup>1014</sup>

| Length<br>Classification<br>Category | Single Track |          | Double Track |             |
|--------------------------------------|--------------|----------|--------------|-------------|
|                                      | Lined        | Unlined  | Lined        | Unlined     |
| 5000                                 | \$251,180    | N/A      | \$69,755     | N/A         |
| 2500                                 | \$116,284    | N/A      | N/A          | N/A         |
| 1500                                 | \$107,850    | N/A      | N/A          | N/A         |
| 1000                                 | \$140,305    | \$8,994  | \$92,796     | N/A         |
| 650                                  | \$211,300    | \$73,491 | \$14,042     | N/A         |
| Subtotal                             | \$826,919    | \$82,485 | \$176,593    | —           |
| TOTAL                                |              |          |              | \$1,085,997 |

On rebuttal, DuPont notes that NS agreed with DuPont's tunnel inventory with the exception of one open cut tunnel, which DuPont argues was not identified in discovery.<sup>1015</sup> DuPont states that its opening evidence was dependent upon the information NS provided in discovery and that it would be unfair to require it to add the previously undisclosed tunnel to its tunnel inventory on rebuttal.<sup>1016</sup> DuPont agrees with NS's identification of double-track tunnels and accepts its unit costs for tunnel construction.<sup>1017</sup> DuPont also accepts NS's total costs for tunnel construction minus the cost for the open cut tunnel, for a total tunnel cost of \$1,081 million.<sup>1018</sup> DuPont stated that NS also added \$10 million to account for tunnel construction during winter months, a cost which DuPont argues is unnecessary.<sup>1019</sup>

The parties have agreed on the tunnel inventory and unit costs for tunnel construction, but disagree as to the addition of the open cut tunnel NS added on reply. The Board will reject the inclusion of the open cut tunnel from the tunnel inventory and from the total tunnel construction costs because NS failed to disclose the tunnel in discovery, and NS has not provided a valid justification for this oversight. The Board will accept DuPont's tunnel inventory provided on

<sup>1014</sup> NS Reply III-F-167.

<sup>1015</sup> DuPont Rebuttal III-F-86.

<sup>1016</sup> DuPont Rebuttal III-F-86.

<sup>1017</sup> DuPont Rebuttal III-F-86.

<sup>1018</sup> DuPont Rebuttal III-F-86.

<sup>1019</sup> DuPont Rebuttal III-F-86.

opening and its total tunnel construction cost of \$1,081 million provided on rebuttal as the best evidence of record.

## E. Bridges

TABLE B-14

| Bridges                   |                 |                 |                 |
|---------------------------|-----------------|-----------------|-----------------|
|                           | DuPont          | NS              | STB             |
| Railroad Bridges          | \$2,273,067,514 | \$4,082,575,690 | \$3,627,493,855 |
| Partially Owned Lines     | \$0             | \$187,437,013   | \$37,336,383    |
| Highway Overpasses        | \$12,024,919    | \$12,689,920    | \$12,689,920    |
| Weather Related Additions | \$0             | \$65,411,053    | \$0             |
| TOTAL                     | \$2,285,092,433 | \$4,348,113,677 | \$3,677,520,158 |

### 1. Highway Overpasses

DuPont includes grade separated crossings in the DRR's bridge calculations.<sup>1020</sup> DuPont states that it is constructing 151 overpasses and that the NS lines being replicated predate the construction of roads in the DRR's territory and, therefore, it has included 10% of the costs for such bridges to be consistent with Board precedent.<sup>1021</sup> DuPont states that unit costs for highway overpass construction were developed from a composite list of costs tracked by various state Departments of Transportation.<sup>1022</sup> DuPont states costs for each overpass are developed separately based both on the number of tracks being crossed and the state in which it is located.<sup>1023</sup> DuPont submits a total cost for highway overpass construction of \$9 million.<sup>1024</sup>

NS accepts DuPont's unit costs for highway overpasses expressed in cost per square foot of bridge deck area, but it does not accept the manner in which those unit costs are applied to the DRR's highway overpasses.<sup>1025</sup> NS argues that DuPont attempted to assign a bridge deck area of each bridge based upon the application of a generic formula.<sup>1026</sup> NS states that a generic

<sup>1020</sup> DuPont Opening III-F-38.

<sup>1021</sup> DuPont Opening III-F-38.

<sup>1022</sup> DuPont Opening III-F-38.

<sup>1023</sup> DuPont Opening III-F-38.

<sup>1024</sup> DuPont Opening III-F-38.

<sup>1025</sup> NS Reply III-F-218.

<sup>1026</sup> NS Reply III-F-218.

formulation is not necessary in this case because the actual bridge deck areas are public information.<sup>1027</sup> NS states that it applied DuPont's unit cost to the actual deck area for each highway overpass in order to develop an individual cost.<sup>1028</sup> NS also states that it accepts DuPont's 10% cost share for each of these bridges.<sup>1029</sup>

DuPont accepts NS's bridge deck area adjustments, but rejects NS application of Means location factor to non-Means costs.<sup>1030</sup> The Board will accept the agreement between the parties as to unit costs, bridge deck area, and a 10% cost share factor. The Board will accept NS's inclusion of Means cost location factors in the calculation of highway overpass costs because a review of DuPont's evidence reveals that it developed costs based solely upon projects from the Florida Department of Transportation. Given the wide geographical area the DRR traverses, the application of average location costs is the best evidence of record.

## 2. Railroad Bridges

DuPont states that it developed the DRR's bridge quantities from NS's bridge inventory supplied in discovery.<sup>1031</sup> DuPont states that any bridges spanning 20 feet or less and crossing natural barriers have been built as culverts.<sup>1032</sup> DuPont argues that a variety of bridge types and lengths have been used on the lines the DRR is replicating.<sup>1033</sup> DuPont states that the DRR's bridges have the same lengths as those NS bridges being replicated, but it has designed those bridges using more efficient spans while using several standard bridge designs where possible.<sup>1034</sup> DuPont states that NS's bridge inventory provided in discovery did not include complete bridge information because it did not include detailed bridge heights, only maximum heights.<sup>1035</sup> In order to develop the necessary heights for each bridge, DuPont utilized the following methodology based on what the bridge is crossing:

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<sup>1027</sup> NS Reply III-F-218.

<sup>1028</sup> NS Reply III-F-218 to III-F-219.

<sup>1029</sup> NS Reply III-F-219.

<sup>1030</sup> DuPont Rebuttal III-F-107 to III-F-108.

<sup>1031</sup> DuPont Opening III-F-33.

<sup>1032</sup> DuPont Opening III-F-33.

<sup>1033</sup> DuPont Opening III-F-33.

<sup>1034</sup> DuPont Opening III-F-34.

<sup>1035</sup> DuPont Opening III-F-34.



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|------------------------|---------------------------------------|
| 1. Highway/Interstate  | 16.5' (AASHTO-Interstate Requirement) |
| 2. Other roads         | 14.5' (AASHTO-Other Highways)         |
| 3. Navigable waterways | USCG clearance requirements           |
| 4. Other waterways     | 11', <sup>1036</sup>                  |

To develop a cost formula for each category of bridges, DuPont uses a composite of costs from Crouch Engineering's historical data of successful bidders on similar railroad bridge construction projects.<sup>1037</sup> DuPont argues that the historical data includes cost quotes from successful bidders on bridge projects in rural Tennessee and Alabama, with terrain similar to the terrain the DRR will be crossing.<sup>1038</sup> DuPont states that each bridge is costed separately under the formula it developed.<sup>1039</sup> DuPont submits that the following generic formula was applied to each bridge, but the specific inputs were developed for each bridge type:

$$\text{Bridge Cost} = [(\text{Abutment cost} \times \text{number of Abutments}) + (\text{Pier cost} \times \text{number of Piers}) + (\text{Per Linear Foot Cost} \times \text{Length of Bridge})].^{1040}$$

DuPont states that this formula also reflects other components such as piling, handrail, elastomeric pads, base plates, and PVC deck drains.<sup>1041</sup> Using this formula, DuPont submits a total investment cost of \$1,926 million for railroad bridges.<sup>1042</sup>

NS argues that the DRR bridges proposed by DuPont bear little, if any, resemblance to the real bridges they are intended to replicate.<sup>1043</sup> NS asserts that several changes must be made, which are not matters of cost, but rather are necessary to ensure that the bridges will fit into the real world topography they would traverse on the DRR.<sup>1044</sup> Making these corrections, NS submits a DRR railroad investment cost of approximately \$4,283 billion, as detailed in the following table.<sup>1045</sup>

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<sup>1036</sup> DuPont Opening III-F-34.

<sup>1037</sup> DuPont Opening III-F-35.

<sup>1038</sup> DuPont Opening III-F-35.

<sup>1039</sup> DuPont Opening III-F-35.

<sup>1040</sup> DuPont Opening III-F-35.

<sup>1041</sup> DuPont Opening III-F-35.

<sup>1042</sup> DuPont Opening III-F-35.

<sup>1043</sup> NS Reply III-F-167.

<sup>1044</sup> NS Reply III-F-167 to III-F-168.

<sup>1045</sup> NS Reply III-F-169.

TABLE B-15

| NS Reply DRR Bridge Cost—100% Owned                   |                                 |             |               |
|-------------------------------------------------------|---------------------------------|-------------|---------------|
| Bridges Less than 20 Feet                             | \$15,656,263                    |             |               |
| Bridges with Only Type I Spans                        | \$135,393,282                   |             |               |
| Bridges with Only Type II Spans                       | \$67,168,398                    |             |               |
| Bridges with Only Type III Spans                      | \$1,559,645,844                 |             |               |
| Bridges with Only Type IV Spans                       | \$4,380,263                     |             |               |
| Bridges with Mixed Span Types                         | \$185,909,381                   |             |               |
| Movable Bridges                                       | \$1,042,319,961                 |             |               |
| Major Non-Movable Structures over Navigable Waterways | \$228,736,234                   |             |               |
| Major “Tall” Structures                               | \$843,366,065                   |             |               |
| Highway Overpasses                                    | \$12,689,920                    |             |               |
| Total—100% Ownership                                  | \$4,095,265,611                 |             |               |
|                                                       |                                 |             |               |
| NS Reply DRR Bridge Cost—Partially Owned              |                                 |             |               |
| Railroad                                              | Full Cost                       | Ownership % | DRR Cost      |
| BRCC Bridges                                          | \$118,110,843                   | 25%         | \$29,527,711  |
| TRRA Bridges                                          | \$54,644,314                    | 14%         | \$7,808,672   |
| IHB Bridges                                           | \$141,857,769                   | 25%         | \$35,464,442  |
| Conrail Shared Asset Bridges                          | \$197,648,600                   | 58%         | \$114,636,188 |
| Total—Fractional Ownership                            | \$512,261,526                   |             | \$187,437,013 |
|                                                       |                                 |             |               |
| Total—NS Reply DRR Bridge Cost                        | \$4,282,702,624 <sup>1046</sup> |             |               |

NS states that while the bridge inventory submitted by DuPont is fairly accurate, it does not take into account other parameters and attributes.<sup>1047</sup> NS states that the most notable error is that the bridge heights provided by DuPont bear no resemblance to the bridges’ actual required height, a problem that affects a majority of the bridge inventory.<sup>1048</sup> NS argues that this design flaw has a significant impact on the construction costs of every structure on the DRR.<sup>1049</sup> NS argues that this design flaw was avoidable because it provided DuPont with the necessary

<sup>1046</sup> NS Reply III-F-170.

<sup>1047</sup> NS Reply III-F-171.

<sup>1048</sup> NS Reply III-F-171.

<sup>1049</sup> NS Reply III-F-171.

information on discovery.<sup>1050</sup> NS argues that because this information was provided to DuPont in discovery, DuPont should be estopped from fabricating bridge heights.<sup>1051</sup>

In addition, NS argues that DuPont's evidence incorrectly states bridge lengths.<sup>1052</sup> NS contends that DuPont's use of erroneous bridge lengths results in a substantial overstatement of bridge lengths where multiple spans are utilized.<sup>1053</sup> NS states that DuPont has made errors such as this to its own detriment, and that while NS would benefit from such errors it has chosen to correct them on reply.<sup>1054</sup> NS also argues that DuPont has frequently assigned incorrect and inconsistent numbers of track to various bridges on the DRR, which NS states that it corrects on reply.<sup>1055</sup>

NS argues that DuPont errs when it assumes that all bridges of less than 20 feet in length can be replaced by culverts.<sup>1056</sup> NS states this is only feasible if the culvert would maintain the functionality of the bridge it replaces.<sup>1057</sup> NS argues that a great number of short bridges span a feature other than a waterway where a culvert would not perform the same functionality of a bridge.<sup>1058</sup>

NS argues that DuPont's opening evidence substantially underestimated the costs of DRR bridges because it did not account for three movable bridges.<sup>1059</sup> NS argues further that DuPont also failed to account for exceptionally tall structures and major river crossings.<sup>1060</sup> NS states that it corrects these errors on reply.<sup>1061</sup>

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<sup>1050</sup> NS Reply III-F-171.

<sup>1051</sup> NS Reply III-F-172.

<sup>1052</sup> NS Reply III-F-177.

<sup>1053</sup> NS Reply III-F-177.

<sup>1054</sup> NS Reply III-F-178.

<sup>1055</sup> NS Reply III-F-178 to III-F-179.

<sup>1056</sup> NS Reply III-F-179.

<sup>1057</sup> NS Reply III-F-179.

<sup>1058</sup> NS Reply III-F-179.

<sup>1059</sup> NS Reply III-F-181.

<sup>1060</sup> NS Reply III-F-182.

<sup>1061</sup> NS Reply III-F-182.

NS states that it accepts the base unit prices DuPont used for bridge components on the DRR with the exception of movable bridges.<sup>1062</sup> NS clarifies that by “base” unit costs it means region-specific unit cost values that DuPont obtained from specific sources.<sup>1063</sup> NS notes that all of the unit costs submitted by DuPont were based on bids in Tennessee and that DuPont did not submit evidence as to how this was representative of costs the DRR would realize throughout the 20 states in which it would undertake construction.<sup>1064</sup> NS states that it corrected this problem by applying a Means location factor to each bridge’s construction costs.<sup>1065</sup>

NS rejects the quantities DuPont uses to estimate DRR bridge costs, because DuPont failed to take into account actual bridge heights.<sup>1066</sup> For movable bridges, NS rejects unit costs and also the cost share DuPont has submitted.<sup>1067</sup> NS argues that DuPont has underestimated the total cost of constructing bridges because it failed to develop feasible substructure designs, which has led to inaccurate quantity estimates.<sup>1068</sup>

NS states that DuPont’s use of bridge type requires the development of a superstructure and corresponding abutments and piers associated with each bridge type.<sup>1069</sup> NS argues that DuPont merely developed costs for each bridge by combining its uniform costs for each component with each bridge.<sup>1070</sup> NS states the outcome of such a methodology is that bridges crossing over non-navigable waterways will always have the same 11 foot high piers and the same abutments regardless of span length. NS argues that this results in mismatches between superstructures and substructures, which will make the DRR’s bridges unfeasible and unsafe.<sup>1071</sup> NS states, that to correct DuPont’s bridge error it separated the DRR’s bridges into multiple categories, which allow it to match substructure parameters with a specific superstructure.<sup>1072</sup>

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<sup>1062</sup> NS Reply III-F-183.

<sup>1063</sup> NS Reply III-F-183.

<sup>1064</sup> NS Reply III-F-183.

<sup>1065</sup> NS Reply III-F-183.

<sup>1066</sup> NS Reply III-F-184.

<sup>1067</sup> NS Reply III-F-184.

<sup>1068</sup> NS Reply III-F-185.

<sup>1069</sup> NS Reply III-F-186.

<sup>1070</sup> NS Reply III-F-186.

<sup>1071</sup> NS Reply III-F-186.

<sup>1072</sup> NS Reply III-F-186 to III-F-187.

NS states that while it rejects DuPont's bridge assembly methodology and its combination of substructures and superstructures it accepts the superstructure designs proposed by DuPont for all Type I, Type II, Type III, and Type IV bridges.<sup>1073</sup> NS states that it does not object "to an approach that matches individual span types with different standard substructure units within individual bridges."<sup>1074</sup> NS argues that such a method, however, requires proper execution to ensure that each substructure has the load capacity necessary for the bridge, and that each of superstructures must fit geometrically onto the substructure, which DuPont has failed to ensure.<sup>1075</sup>

NS argues that DuPont's bridge designs omit spans used over major waterways and navigable waterways for which the span must satisfy USCG horizontal and vertical clearance requirements.<sup>1076</sup> NS states that DuPont incorrectly assumes that a combination of its spans would be used to cross USCG regulated waterways.<sup>1077</sup> To correct these issues, NS states that it estimates quantities for long span trusses that could be used to cross navigable waterways, uses pier designs sufficient to support the span, and then assigns costs based upon DuPont's unit prices.<sup>1078</sup>

NS argues that DuPont substructure designs are infeasible as applied to the DRR bridge inventory.<sup>1079</sup> NS states that DuPont's approach has two errors: one is that the standard piers used by DuPont do not account for bridge height; and that these standard piers do not account for bridge length.<sup>1080</sup> NS states that these flaws have a profound impact on the construction costs of bridges.<sup>1081</sup> NS accepts DuPont's use of 11-foot, 14.5 foot, and 16.5 foot standard piers on Type I and Type II spans only.<sup>1082</sup> NS states that it had to design additional piers for use on Type I and II bridges with spans that exceed 16.5-feet in height.<sup>1083</sup> NS also states that it concludes DuPont's pier designs for Type III and IV spans are inadequate and that it designed entirely new

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<sup>1073</sup> NS Reply III-F-187.

<sup>1074</sup> NS Reply III-F-187.

<sup>1075</sup> NS Reply III-F-187 to III-F-188.

<sup>1076</sup> NS Reply III-F-188.

<sup>1077</sup> NS Reply III-F-189.

<sup>1078</sup> NS Reply III-F-189.

<sup>1079</sup> NS Reply III-F-189.

<sup>1080</sup> NS Reply III-F-189.

<sup>1081</sup> NS Reply III-F-190.

<sup>1082</sup> NS Reply III-F-191

<sup>1083</sup> NS Reply III-F-191.

piers for use on the DRR bridge inventory.<sup>1084</sup> NS also rejects DuPont's use of a single standard abutment.<sup>1085</sup> NS states that it developed costs for abutments tailored to the specific superstructure characteristics for each DRR bridge.<sup>1086</sup>

On rebuttal, DuPont accepts NS's inclusion of bridges less than 20 feet in length over roads as Type I bridges, and it has also added a few other bridges that were inadvertently omitted in opening.<sup>1087</sup> DuPont also accepts NS's classification of three additional moveable bridges, and the removal of two bridges not owned by NS.<sup>1088</sup> The Board will accept the parties' agreement on these issues. DuPont rejects the inclusion of bridges on partially owned lines.<sup>1089</sup> DuPont states that on rebuttal it has included a total of 5,806 bridges at the same locations as NS and that the differences between the parties arise due to the differences in number of tracks at some locations and the differences in the parties' facility plans.<sup>1090</sup>

DuPont argues that NS's primary criticism pertains to DuPont's opening bridge heights.<sup>1091</sup> DuPont states it "used estimated bridge and pier heights because NS provided only maximum bridge height for the majority of bridges instead of the actual height requested by DuPont in discovery."<sup>1092</sup> DuPont argues that NS assumed the maximum bridge height equaled the maximum pier height.<sup>1093</sup> DuPont maintains their opening approach of using an average pier height for DRR bridges is appropriate and asserts that NS's use of maximum bridge height to develop pier height significantly overstates the required height of each pier.<sup>1094</sup> DuPont argues that to correct this overstatement, at a minimum, the maximum height would need to be reduced by the distance from the top of the rail to the bottom of the bridge superstructure.<sup>1095</sup> DuPont

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<sup>1084</sup> NS Reply III-F-191.

<sup>1085</sup> NS Reply III-F-192.

<sup>1086</sup> NS Reply III-F-192.

<sup>1087</sup> DuPont Rebuttal III-F-87.

<sup>1088</sup> DuPont Rebuttal III-F-87.

<sup>1089</sup> DuPont Rebuttal III-F-87.

<sup>1090</sup> DuPont Rebuttal III-F-88.

<sup>1091</sup> DuPont Rebuttal III-F-88.

<sup>1092</sup> DuPont Rebuttal III-F-88 (emphasis in original).

<sup>1093</sup> DuPont Rebuttal III-F-88.

<sup>1094</sup> DuPont Rebuttal III-F-88.

<sup>1095</sup> DuPont Rebuttal III-F-88 to III-F-89.

states that subtracting this distance from Type I, II, and III bridges results in pier heights well within the 11-foot to 16.5-foot pier height range submitted on opening.<sup>1096</sup>

TABLE B-16

| Bridge Type | Average Maximum Bridge Height | Distance from Rail to Bottom Chord | Average Maximum Pier Height |
|-------------|-------------------------------|------------------------------------|-----------------------------|
| Type I      | 16.25                         | 5.69                               | 10.56                       |
| Type II     | 17.1                          | 5.98                               | 11.12                       |
| Type III    | 21.12                         | 9.23                               | 11.89 <sup>1097</sup>       |

DuPont states that with some modifications it will accept NS's pier height for exceptionally tall bridges.<sup>1098</sup> DuPont argues that NS has provided contradictory evidence of pier heights.<sup>1099</sup> To correct this problem, DuPont submits evidence that for exceptionally tall bridges of three or more piers, 25% of the piers are assumed to be the maximum height of the bridge and the remaining 75% are 25% of the maximum height.<sup>1100</sup> On rebuttal, DuPont has also corrected its bridge lengths and numbers of tracks in response to NS's criticisms made on reply.<sup>1101</sup>

DuPont argues that NS has accepted DuPont's base unit costs for bridge components, but erroneously applied the Means location factor.<sup>1102</sup> DuPont argues that the application of Means is inappropriate for three reasons.<sup>1103</sup> First, DuPont's unit costs are not national averages taken from Means.<sup>1104</sup> Second, DuPont's unit costs are based on actual project costs.<sup>1105</sup> Third, NS has provided no evidence that the unit costs would be different from similar projects in other locations.<sup>1106</sup>

<sup>1096</sup> DuPont Rebuttal III-F-89.

<sup>1097</sup> DuPont Rebuttal III-F-89.

<sup>1098</sup> DuPont Rebuttal III-F-89.

<sup>1099</sup> DuPont Rebuttal III-F-90.

<sup>1100</sup> DuPont Rebuttal III-F-90.

<sup>1101</sup> DuPont Rebuttal III-F-90.

<sup>1102</sup> DuPont Rebuttal III-F-91.

<sup>1103</sup> DuPont Rebuttal III-F-91.

<sup>1104</sup> DuPont Rebuttal III-F-91.

<sup>1105</sup> DuPont Rebuttal III-F-91.

<sup>1106</sup> DuPont Rebuttal III-F-91.

DuPont states that it has provided bridge designs on opening which are based on real-world bridge designs that are still in use today.<sup>1107</sup> DuPont states that despite NS's criticisms, it did not do anything different than DuPont, other than separate the bridges into different tabs on its spreadsheets.<sup>1108</sup> DuPont does accept the longer spans and costs for spans over major waterways to meet USCG horizontal and vertical requirements.<sup>1109</sup> The Board will accept the parties' agreement on this issue.

DuPont states that on opening its substructures were designed for the industry standard, 286,000 lbs. gross car weights.<sup>1110</sup> DuPont argues that NS has failed to demonstrate that its bridge designs were not adequate and that it has proposed unnecessarily large and over-designed piers on reply.<sup>1111</sup>

The Board will require DuPont to construct the bridges owned by partially owned switching companies proportional to NS's ownership in those companies. The Board will also accept NS's bridge count because we are accepting NS's system configuration, which requires specific track configurations on the DRR's bridges. We will accept the agreed to base bridge costs, but will add NS cost adjustments based on location because, as noted in reference to highway overpasses, such adjustments reflect the correct location and associated costs to be applied to local construction. Again, NS's inclusion of a Means cost location factor represents the best evidence of record for accounting for geographical construction costs when compared with DuPont's methodology for development of location costs. The Board will also accept NS's modification to abutment designs and associated costs because it is the best evidence of record. This modification is appropriate because the DRR's bridges must be able to fit geographically into the system they are replacing, and this includes the area between the span and the topographical feature from which the bridge will extend. For the same reasons (e.g., geographic and system fit), the Board accepts NS's evidence on the designs and costs for Types I, II, III, IV, and multiple span bridges.

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<sup>1107</sup> DuPont Rebuttal III-F-92.

<sup>1108</sup> DuPont Rebuttal III-F-92.

<sup>1109</sup> DuPont Rebuttal III-F-93.

<sup>1110</sup> DuPont Rebuttal III-F-93.

<sup>1111</sup> DuPont Rebuttal III-F-93 to III-F-94.



**a. Special Bridges**

NS states that a number of bridges from the DRR's inventory do not fall into the criteria set forth for the bridges discussed above, and that they have classified them into three subcategories of special bridges discussed below.<sup>1112</sup>

**i. Moveable Bridges**

NS argues that DuPont's replication of moveable structures on the DRR is flawed.<sup>1113</sup> NS states that the list of movable structures was inaccurate and that moveable bridges were included as part of the general bridge inventory rather than as an independent calculation.<sup>1114</sup> NS also argues that DuPont's unit costs for moveable bridges are unsupported and understated.<sup>1115</sup> NS states that DuPont did not provide any evidence to support its unit costs and its workpapers referenced a rebuttal narrative from a different rate case.<sup>1116</sup> NS states that because of these shortcomings it was required to develop its own movable bridge cost evidence.<sup>1117</sup>

NS states that modern movable bridges are typically built offsite and floated into position because the USCG requires navigation channels to remain clear throughout bridge construction, and this has the positive benefit of reducing construction costs.<sup>1118</sup> NS excluded the costs of demolition, removal of the old structure, modifications to the existing structure, and similar tasks from real world movable bridge construction for the DRR's movable bridge unit costs.<sup>1119</sup> NS states that for vertical lift bridges it took data from a Value Engineering report to develop unit costs, which displayed moveable bridge line item bids separate from non-moveable bridge line items.<sup>1120</sup> NS accepts those costs submitted by DuPont for bascule span unit costs, but not the 10% cost share DuPont assumes.<sup>1121</sup>

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<sup>1112</sup> NS Reply III-F-203.

<sup>1113</sup> NS Reply III-F-203.

<sup>1114</sup> NS Reply III-F-203.

<sup>1115</sup> NS Reply III-F-203.

<sup>1116</sup> NS Reply III-F-203 to III-F-204.

<sup>1117</sup> NS Reply III-F-204.

<sup>1118</sup> NS Reply III-F-204.

<sup>1119</sup> NS Reply III-F-205.

<sup>1120</sup> NS Reply III-F-205.

<sup>1121</sup> NS Reply III-F-206.

NS rejects DuPont's 10% railroad cost share for all movable bridges, and notes that DuPont submitted no evidence to justify such an arrangement for the DRR.<sup>1122</sup> NS states that because DuPont has not submitted evidence on opening to support its 10% cost sharing arrangement for moveable bridges it should be prevented from doing so on rebuttal.<sup>1123</sup> NS speculates that DuPont may attempt to rely on the Truman-Hobbs Act, 33 U.S.C. §§ 512-516, 523.<sup>1124</sup> NS argues that there is no cost sharing arrangement implicit in the Truman-Hobbs Act and that it has only been used to fund 27 bridges since 1940.<sup>1125</sup> Furthermore NS states, the Truman Hobbs Act is only available for the replacement of existing structures.<sup>1126</sup> NS argues that, absent any evidence to the contrary, a SAC analysis must assume that a railroad owner bore the full costs of construction of a moveable bridge when that structure was built.<sup>1127</sup>

NS states that for every movable span there is also some length of fixed approach span that leads up to the movable structure.<sup>1128</sup> NS developed a methodology where the fixed span pier heights tapered from the highest pier adjacent to the moveable structure to the fixed span abutments.<sup>1129</sup> NS states that in making this determination it took into account actual water depth when it was publicly available and made reasonable and conservative assumptions when it was not.<sup>1130</sup>

DuPont accepts NS's changes to the list of moveable bridges, and the Board will accept the parties' agreement.<sup>1131</sup> DuPont maintains that its opening evidence is sufficient to determine the costs of movable bridges, and it rejects NS's use of a CSXT Railroad lift bridge and the use of a 2006 Value Engineer report for the development of movable bridge costs.<sup>1132</sup>

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<sup>1122</sup> NS Reply III-F-206.

<sup>1123</sup> NS Reply III-F-207 to III-F-208.

<sup>1124</sup> NS Reply III-F-208.

<sup>1125</sup> NS Reply III-F-208.

<sup>1126</sup> NS Reply III-F-209.

<sup>1127</sup> NS Reply III-F-209.

<sup>1128</sup> NS Reply III-F-211.

<sup>1129</sup> NS Reply III-F-212.

<sup>1130</sup> NS Reply III-F-212.

<sup>1131</sup> DuPont Rebuttal III-F-98.

<sup>1132</sup> DuPont Rebuttal III-F-98.

DuPont agrees with NS that the Truman-Hobbs Act is the only source of federal funding that would support a 10% cost share arrangement.<sup>1133</sup> DuPont contends that in 2009, the year the DRR would commence operations, the American Recovery and Reinvestment Act of 2009 provided \$142 million to fund moveable bridge replacement under Section 6 of the Truman-Hobbs Act.<sup>1134</sup> DuPont states that other Class I railroads were able to take advantage of this federal funding, and so too would the DRR.<sup>1135</sup> DuPont argues that to prevent the DRR from taking advantage of this funding stream would represent a barrier to entry.<sup>1136</sup> DuPont continues to assert on rebuttal that it is eligible for federal funding for 90% of the replacement costs of moveable bridges.<sup>1137</sup>

The Board will accept the parties' agreements with respect to the inclusion of three movable bridges. The Board will accept DuPont's costs for movable bridges because NS failed to demonstrate that DuPont's methodology for cost development was not sufficient for constructing the requisite structures. The Board rejects DuPont's claim for cost reduction via the Truman-Hobbs Act and the American Recovery and Reinvestment Act of 2009 because the Truman-Hobbs Act applies only to the modification or relocation of bridges which are already in existence. The Truman-Hobbs Act does not provide funding assistance for the construction of brand new bridges such as the DRR would be constructing. Therefore, DuPont will be responsible for the full cost of moveable bridges with no cost sharing arrangement.

## **ii. Exceptionally Tall Bridges**

NS states that DuPont's opening evidence on bridge construction is inadequate to address the construction of "exceptionally tall bridges" the DRR would need to replicate because the standard pier heights that DuPont submitted on opening would not support exceptionally tall bridges.<sup>1138</sup> NS states that bridges in this category have heights that exceed 65 feet.<sup>1139</sup> NS argues that through experience it has learned that when pier heights approach 60 feet the applicability of standard design assumptions and construction methods diminishes.<sup>1140</sup> NS

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<sup>1133</sup> DuPont Rebuttal III-F-101.

<sup>1134</sup> DuPont Rebuttal III-F-101.

<sup>1135</sup> DuPont Rebuttal III-F-101.

<sup>1136</sup> DuPont Rebuttal III-F-102.

<sup>1137</sup> DuPont Rebuttal III-F-106.

<sup>1138</sup> NS Reply III-F-213.

<sup>1139</sup> NS Reply III-F-213.

<sup>1140</sup> NS Reply III-F-213.

assigns bridges in this category to one of seven additional pier design groups.<sup>1141</sup> NS maintains the superstructure span type used for exceptionally tall bridges, but revises the cost of substructure design based on its own revisions.<sup>1142</sup> NS states that some of the piers taper in height and it therefore applied a reduction factor to the pier costs for any bridge in this group that used three or more piers.<sup>1143</sup>

DuPont accepts NS's pier heights for exceptionally tall bridges.<sup>1144</sup> The Board will accept NS's designs and costs for exceptionally tall bridges because it is the best evidence of record. Again, the DRR's bridges must be able to fit geographically into the system they are replacing and this includes the area between the span and the topographical feature from which the bridge will extend.

### **iii. Non-Movable Bridges over Navigable Waters**

NS argues that the DRR could not replicate this category of bridges based upon DuPont's use of standard piers and spans.<sup>1145</sup> NS states that to remedy the issue of horizontal clearance it proposes to replicate one of the long truss spans for each of the bridges in this category.<sup>1146</sup> NS argues that this solution ensures that each bridge has the same clearance that exists today and would preserve their functionality.<sup>1147</sup> NS develops steel quantities for these long truss spans by estimating the required steel weight based upon span length.<sup>1148</sup> NS argues that this approach is valid because it produced results within 9.6% of the actual steel used on a representative bridge.<sup>1149</sup> NS develops cost for approach spans in the same manner as moveable bridges discussed above.<sup>1150</sup> NS uses DuPont's unit costs except for structural steel, which it states is not

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<sup>1141</sup> NS Reply III-F-213.

<sup>1142</sup> NS Reply III-F-213 to III-F-214.

<sup>1143</sup> NS Reply III-F-214.

<sup>1144</sup> DuPont Rebuttal III-F-106.

<sup>1145</sup> NS Reply III-F-214.

<sup>1146</sup> NS Reply III-F-216.

<sup>1147</sup> NS Reply III-F-216.

<sup>1148</sup> NS Reply III-F-217.

<sup>1149</sup> NS Reply III-F-217.

<sup>1150</sup> NS Reply III-F-217.

located in the workpapers.<sup>1151</sup> For this cost, NS states it uses the lowest unit cost for “Truss Steel” in the value engineering report discussed above.<sup>1152</sup>

DuPont accepts NS’s truss span length, pier heights, and costs for the portions of these bridges which span waterways.<sup>1153</sup> The Board will accept the parties’ agreement. DuPont continues to rely upon its opening methodology for abutment, approach span pier heights, span lengths, and costs.<sup>1154</sup> The Board will accept NS’s designs and costs for non-movable bridges over navigable waters because it is the best evidence of record. As we have stated, the DRR’s bridges must be able to fit geographically into the system they are replacing.

## F. Signals and Communication

TABLE B-17

| Signals & Communications |                 |                 |                 |
|--------------------------|-----------------|-----------------|-----------------|
|                          | DuPont          | NS              | STB             |
| Signals                  | \$1,036,280,765 | \$1,558,751,965 | \$1,528,174,916 |
| Communications           | \$243,726,222   | \$254,813,841   | \$243,726,222   |
| PTC                      | \$94,017,984    | \$94,017,984    | \$94,017,984    |
| Locomotive PTC Costs     | \$46,477,431    | \$93,527,469    | \$93,527,469    |
| PTC Development Costs    | \$68,739,387    | \$153,800,665   | \$90,309,321    |
| TOTAL                    | \$1,489,241,789 | \$2,154,911,924 | \$2,049,755,911 |

### 1. Centralized Traffic Control System

The question of whether the DRR will install a Centralized Traffic Control System is addressed in the PTC section below.

### 2. Communication Systems

The parties agree on materials and costs for Communication Systems, and the Board will accept the parties’ agreement.

<sup>1151</sup> NS Reply III-F-217.

<sup>1152</sup> NS Reply III-F-217.

<sup>1153</sup> DuPont Opening III-F-107.

<sup>1154</sup> DuPont Opening III-F-107.

### 3. Crossing Signals and Equipment

The parties agree on materials and costs for Crossing Signals and Equipment, and the Board will accept the parties' agreement.

### 4. Detectors

DuPont states on opening that automatic roll-by failed equipment detectors (FEDs) are included along the DRR mainlines located approximately every 35 miles, which is consistent with the current industry standards.<sup>1155</sup> DuPont states that bad order setout tracks have been provided within two miles of the FEDs to allow for the removal of bad order cars.<sup>1156</sup> DuPont states that all set out tracks are single-ended, 735 feet in length and provide 600 feet in clear past the switch.<sup>1157</sup>

NS asserts on reply that DuPont detector evidence is flawed because it substantially underestimates the need for FEDs and omits slide fences.<sup>1158</sup> NS argues that spacing FEDs 35 miles apart is too great a distance and that it is not consistent with the current industry standard.<sup>1159</sup> NS claims that the current AREMA manual suggests a number of factors to be considered when spacing FEDs.<sup>1160</sup> NS states that its current spacing standard is 15 miles and that is based upon its experience with FEDs and derailments.<sup>1161</sup> NS submits its actual FED placement data, and corrects the FED inventory to reflect this change.<sup>1162</sup>

NS also states that DuPont did not account for the cost of slide fences on opening and that they are essential equipment in mountainous areas.<sup>1163</sup> NS examined the route of the DRR and its own lines and argues that the DRR would require 112,084 feet of slide fences.<sup>1164</sup>

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<sup>1155</sup> DuPont Opening III-F-40.

<sup>1156</sup> DuPont Opening III-F-40.

<sup>1157</sup> DuPont Opening III-F-40.

<sup>1158</sup> NS Reply III-F-246.

<sup>1159</sup> NS Reply III-F-246.

<sup>1160</sup> NS Reply III-F-247.

<sup>1161</sup> NS Reply III-F-247.

<sup>1162</sup> NS Reply III-F-248.

<sup>1163</sup> NS Reply III-F-246.

<sup>1164</sup> NS Reply III-F-246.

DuPont rejects NS FED placement and continues to rely upon its opening evidence, but increases the total count by three due to increases in double track.<sup>1165</sup> DuPont argues that NS overstates the need for Dragging Equipment Detectors (DED), and notes that NS has included nearly three times as many DEDs as FEDs.<sup>1166</sup> DuPont continues to rely on its opening evidence of one DED for every FED.<sup>1167</sup>

The Board will accept DuPont's DED and FED quantities and costs because NS has failed to demonstrate why its count is superior to the count put forward by DuPont. The mere fact that NS has installed a certain number of FEDs on its railroad does not dictate that the new entrant needs the same number to comply with industry standards. Because DuPont has produced evidence and NS has failed to explain why its evidence is better, we will accept DuPont's DED and FED count.

DuPont includes costs for slide fences on rebuttal, but rejects the inclusion of slide fences where NS did not identify them on discovery.<sup>1168</sup> In addition, DuPont argues that NS failed to explain a 20% increase in the average height of slide fences.<sup>1169</sup> The Board will accept DuPont's slide fence costs and quantities because NS failed to identify all slide fence locations during discovery, and because its height increase is unnecessary.

## **5. Integrated Switching and Hump Yard Control**

DuPont did not include hump yard costs on opening. On reply, NS states that the eight hump yards it located on the DRR will require integrated switching and control to properly function within the system.<sup>1170</sup> NS states that it developed integrated switching and hump yard control costs based on the costs expended on a fully operational hump yard system at Bellevue, OH, which it then scaled to the various sizes of the eight DRR hump yards.<sup>1171</sup> NS submits a total cost of \$213 million.

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<sup>1165</sup> DuPont Rebuttal III-F-119.

<sup>1166</sup> DuPont Rebuttal III-F-119.

<sup>1167</sup> DuPont Rebuttal III-F-119.

<sup>1168</sup> DuPont Rebuttal III-F-118 to III-F-119.

<sup>1169</sup> DuPont Rebuttal III-F-118 to III-F-119.

<sup>1170</sup> NS Reply III-F-253.

<sup>1171</sup> NS Reply III-F-253.

DuPont argues on rebuttal that hump yards are not necessary and it has not included NS's costs.<sup>1172</sup> The Board will accept NS's integrated switching and control hump yard costs because we are accepting NS's system configuration and its inclusion of 8 hump yards, and such costs are necessary for the DRR's operation.

## 6. PTC

On opening, DuPont states that the DRR relies upon a "PTC system for all train control and communications on the entirety of its constructed track network."<sup>1173</sup> DuPont notes that, unlike current Class I carriers, the DRR will install a PTC system at the time of construction rather than convert an existing communication system to a PTC system.<sup>1174</sup> DuPont argues that this will result in lower investment expenditures than an existing Class I carrier to install the same system.<sup>1175</sup> DuPont states that PTC investment costs are accounted for in three components: wayside, information technology systems, and locomotive communications.<sup>1176</sup>

On reply, NS states that the DRR would first need to install a CTC system to begin operations and then overlay a PTC system by December 31, 2015 to comply with the Rail Safety Improvement Act.<sup>1177</sup> NS asserts that this is necessary because the critical components of a PTC system do not currently exist.<sup>1178</sup> NS argues that the construction of a CTC system with a PTC overlay is consistent with real world railroad operations and the Board's holding in AEPCO.<sup>1179</sup> NS relies upon a recent FRA report to Congress, which cited significant technical and programmatic issues in implementing a PTC system prior to the December 2015 deadline.<sup>1180</sup> NS also cites a GAO report, which identified several essential elements of a PTC system which had yet to be developed.<sup>1181</sup> NS states that the inability to implement a PTC system at the outset

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<sup>1172</sup> DuPont Rebuttal III-F-120.

<sup>1173</sup> DuPont Opening III-F-39.

<sup>1174</sup> DuPont Opening III-F-39.

<sup>1175</sup> DuPont Opening III-F-39.

<sup>1176</sup> DuPont Opening III-F-39.

<sup>1177</sup> NS Reply III-F-236.

<sup>1178</sup> NS Reply III-F-220.

<sup>1179</sup> NS Reply III-F-221 (citing AEPCO, slip op. at 33).

<sup>1180</sup> NS Reply III-F-221. See also Federal Railroad Administration, Report to Congress on Positive Train Control Implementation Status, Issues and Impacts at 1 (August 2012).

<sup>1181</sup> NS Reply III-F-222. See also GAO Report: Rail Safety: Federal Railroad Administration Should Report on Risks to the Successful Implementation of Mandated Safety Technology, at 21 (December 2010).



of operations is not a barrier to entry, rather it is a real world limitation faced by all existing railroads.<sup>1182</sup>

On rebuttal, DuPont rejects NS's argument that it would be required to install a CTC system with a PTC overlay.<sup>1183</sup> DuPont argues that it is not bound by the capital and operational approaches of NS because it is a stand-alone entity.<sup>1184</sup> DuPont asserts that PTC is not a new concept and that it has been around for several years.<sup>1185</sup> DuPont notes that the Advanced Civil Speed Enforcement System has been in service on Amtrak's Northeast Corridor since 2002.<sup>1186</sup> Similarly, DuPont states, NS has been working on a PTC system since 2005 with field testing scheduled for 2009.<sup>1187</sup> DuPont maintains that NS's failure to implement a PTC system on its own system should not limit the DRR's ability to employ PTC technology in 2009.<sup>1188</sup>

It is true, as NS argues, that the DRR would not be able to implement a PTC system in 2009 that complies with the RSIA's 2015 standard, including interoperability. As NS points out, the overwhelming weight of evidence from the railroad industry demonstrates that implementing a PTC system compliant with the RSIA's 2015 standard is currently infeasible. However, the same evidence shows that, even starting with a CTC system and overlaying PTC, the path to a RSIA-compliant PTC system is extremely uncertain. DuPont has made the point that PTC systems existed in 2009—for example, on parts of BNSF's system<sup>1189</sup>—and NS has not demonstrated that starting with such a system and then upgrading it for interoperability and compliance with the 2015 standard would be any more uncertain than starting with CTC.<sup>1190</sup> Therefore, we will accept DuPont's position that the DRR can install an initial PTC system in 2009.<sup>1191</sup> However, because the DRR would first install a PTC system and then upgrade it to

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<sup>1182</sup> NS Reply III-F-224.

<sup>1183</sup> DuPont Rebuttal III-F-109.

<sup>1184</sup> DuPont Rebuttal III-F-109.

<sup>1185</sup> DuPont Rebuttal III-F-109.

<sup>1186</sup> DuPont Rebuttal III-F-110.

<sup>1187</sup> DuPont Rebuttal III-F-110.

<sup>1188</sup> DuPont Rebuttal III-F-110.

<sup>1189</sup> See DuPont Rebuttal III-F-110; DuPont Rebuttal WP "WABTEC Management Discusses Q3 2012 Results.pdf;" DuPont Final Brief 71.

<sup>1190</sup> See DuPont Rebuttal III-F-112 (costs included for PTC development); DuPont Final Brief 71 (recognizing that there are costs associated with making PTC interoperable across railroads by 2016).

<sup>1191</sup> Because we are accepting NS's operating plan, the performance statistics used in the RTC model will not reflect the initial installation of a PTC system. As discussed above,

(continued . . . )

meet RSIA requirements, upgrade costs must be spread over the 2010 through 2015 time period,<sup>1192</sup> rather than being incurred together with the initial costs of installing the system in 2009 or before.<sup>1193</sup>

### G. Buildings and Facilities

TABLE B-18

| Buildings & Facilities                                        |                 |                 |                 |
|---------------------------------------------------------------|-----------------|-----------------|-----------------|
|                                                               | DuPont          | NS              | STB             |
| Headquarters Building                                         | \$11,212,906    | \$33,122,085    | \$33,122,085    |
| Fueling Facilities                                            | \$91,620,788    | \$202,067,953   | \$202,067,953   |
| Locomotive Shops                                              | \$186,302,766   | \$279,454,149   | \$310,504,610   |
| Car Repair Shop                                               | \$0             | \$37,831,620    | \$0             |
| Crew Facilities                                               | \$18,306,554    | \$31,685,640    | \$31,685,640    |
| MoW & Signal Maintainer Facilities                            | \$13,565,391    | \$76,670,455    | \$39,938,735    |
| Major Yards                                                   | \$209,612,345   | \$12,260,382    | \$12,260,382    |
| Minor Yards                                                   | \$79,653,833    | \$13,506,673    | \$13,506,673    |
| Non-automotive Observation Towers                             | \$0             | \$10,783,649    | \$10,783,649    |
| Auto Yards                                                    | \$125,832,676   | \$127,934,070   | \$136,091,820   |
| Intermodal Yards                                              | \$303,768,908   | \$792,762,789   | \$457,319,716   |
| Bulk Transfer Yards                                           | \$3,888,312     | \$33,922,000    | \$7,083,442     |
| Mechanical Offices                                            | \$0             | \$4,520,435     | \$0             |
| Warehouses (and other miscellaneous buildings and site costs) | \$0             | \$979,725,191   | \$362,699,231   |
| TOTAL                                                         | \$1,043,764,479 | \$2,636,247,091 | \$1,617,063,936 |

( . . . continued)

however, the DRR will not be required to incur the cost of installing a CTC system and then overlaying a PTC system.

<sup>1192</sup> See DuPont Rebuttal III-F-112 (specifying certain costs for PTC development, including costs for interoperability integration). 2010 is the correct starting point for these costs because the Federal Railroad Administration issued its initial rules implementing the RSIA in January of 2010. See Positive Train Control Systems, 75 Fed. Reg. 2598 (Jan. 15, 2010).

<sup>1193</sup> Thus, we do not accept DuPont's position that the DRR could incur all of its PTC implementation costs at or before the beginning of operations in 2009. See DuPont Rebuttal III-F-118.

## 1. Car Repair

DuPont states on opening, that the DRR will acquire railcars via full service leases, and because of that, the lessor, and not the DRR, will provide all necessary car repairs and shops.<sup>1194</sup> DuPont states that because of this arrangement, DuPont has not included any costs for car repair facilities, but they have provided space and tracks for such a facility at the DRR's Conway and Atlanta Yards.<sup>1195</sup>

NS argues that DuPont's full service lease arrangement fails to take into account the DRR's responsibility to repair cars owned by foreign carriers that go bad on DRR-owned lines.<sup>1196</sup> NS notes that in previous SAC cases the Board has declined to include costs for car repair facilities on the grounds asserted by DuPont.<sup>1197</sup> NS argues, however, that in those cases the SARRs were exclusively coal-only carriers and that the DRR's size and scope precludes such a finding here.<sup>1198</sup> NS states that an unprecedented number of foreign cars will be operating on the DRR, and car repair shops are essential for the DRR to discharge its interchange agreement responsibilities.<sup>1199</sup> NS argues that the DRR will require major freight car repair facilities at Chattanooga and Elkhart.<sup>1200</sup> NS states that its Shaffer's Crossing car repair facility would be representative of what the DRR would require and uses that facility as a benchmark to develop facility requirements and associated costs.<sup>1201</sup>

NS states that it included repair-in-place track based upon the location, length, and needs of the operating plan.<sup>1202</sup> NS argues that while DuPont made a blanket assumption for repair-in-place tracks and included costs for the tracks, it did not account for other necessary repair facility items.<sup>1203</sup> NS includes costs for these items and facilities on reply.<sup>1204</sup>

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<sup>1194</sup> DuPont Opening III-F-46.

<sup>1195</sup> DuPont Opening III-F-46.

<sup>1196</sup> NS Reply III-F-263.

<sup>1197</sup> NS Reply III-F-263.

<sup>1198</sup> NS Reply III-F-263.

<sup>1199</sup> NS Reply III-F-263.

<sup>1200</sup> NS Reply III-F-263.

<sup>1201</sup> NS Reply III-F-264.

<sup>1202</sup> NS Reply III-F-264.

<sup>1203</sup> NS Reply III-F-264 to III-F-265.

<sup>1204</sup> NS Reply III-F-265.

DuPont argues on rebuttal that its use of full service leases and inclusion of space and track for contractor repair shops is consistent with prior Board decisions.<sup>1205</sup> DuPont argues that it can meet its interchange agreement obligations because the DRR will be reimbursed for all repairs on foreign-owned cars and as such it would pass on those payments to the contractor for repairs to those foreign-owned cars.<sup>1206</sup> DuPont argues further, that NS has shown no evidence as to why car repair facilities will be required in Chattanooga and Elkhart.<sup>1207</sup>

DuPont rejects NS's addition of items at repair-in-place track locations.<sup>1208</sup> DuPont argues that it has already provided for lighting, compressed air, power and paved roadways and that the costs for additional items are the responsibility of the car repair contractor under the terms of the lease.<sup>1209</sup> With respect to repairing foreign cars, DuPont argues, the DRR would be reimbursed and would pass along the revenue to the contractor performing the repairs.<sup>1210</sup> DuPont states that it maintains its opening position.<sup>1211</sup>

We accept DuPont's plan for car repair shops because DuPont has entered into full service leases for its cars, its car repair costs are accounted for in operating expenses and it would be a double count of those costs to include them here. NS has not adequately explained why it believes DuPont's approach is unrealistic or infeasible, and we will accept DuPont's plan for car repair activities and the associated facilities.

## **2. Crew Change Facilities and Yard Offices**

DuPont provides for 67 crew change facilities and 42 yard offices on the DRR.<sup>1212</sup> DuPont states that at the six major yards the crew change facilities are sized 35' by 64', while the other crew change facilities and yard offices measure 25' by 56'.<sup>1213</sup> DuPont states the unit costs

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<sup>1205</sup> DuPont Rebuttal III-F-126.

<sup>1206</sup> DuPont Rebuttal III-F-126.

<sup>1207</sup> DuPont Rebuttal III-F-126.

<sup>1208</sup> DuPont Rebuttal III-F-126.

<sup>1209</sup> DuPont Rebuttal III-F-126.

<sup>1210</sup> DuPont Rebuttal III-F-126; see also DuPont Rebuttal III-C-32 to III-C-33 & DuPont Rebuttal WP "AAR Interchange Rule 1.2.a.(6).pdf."

<sup>1211</sup> DuPont Rebuttal III-F-126.

<sup>1212</sup> DuPont Opening III-F-46 to III-F-47.

<sup>1213</sup> DuPont Opening III-F-46 to III-F-47.

were based on actual buildings designed by Crouch Engineering and submits a total cost for crew change facilities of \$7.2 million and \$1.5 million for yard offices.<sup>1214</sup>

NS rejects the number of crew change facilities and yard offices.<sup>1215</sup> NS modifies the number of crew change facilities to reflect its changes to the DRR operating plan.<sup>1216</sup> NS also rejects DuPont's costing assumptions and calculations for the crew change facilities and yard offices.<sup>1217</sup> NS argues that costs for these building are based simply on the shell of the building and do not account for interior features or furnishings.<sup>1218</sup> NS states that to develop costs for these facilities it uses Means costs for M.455 "Commercial/Industrial/Institutional – Office, 1 Story."<sup>1219</sup> NS also rejects the size of DuPont's yard offices and submits yard office sizes based upon its existing facilities.<sup>1220</sup>

DuPont accepts NS's costs for the small and large crew change facilities, but rejects NS's facility count.<sup>1221</sup> DuPont argues that NS has not explained its changes to facility locations or the need to increase the number of facilities.<sup>1222</sup> DuPont argues that it places crew change facilities at the end points of DRR crew districts and at major yards.<sup>1223</sup> DuPont argues that NS has also provided no explanation as to why the size of DuPont's yard office buildings was not sufficient.<sup>1224</sup> DuPont argues further that the DRR is under no obligation to replicate NS's current yard office configuration.<sup>1225</sup>

The parties agree on costs for crew change facilities and yard offices, and the Board will accept the parties' agreement. The Board will accept NS's quantities and locations of crew change facilities and yard offices because we are accepting NS's operating plan and system

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<sup>1214</sup> DuPont Opening III-F-46 to III-F-47.

<sup>1215</sup> NS Reply III-F-265 to III-F-267.

<sup>1216</sup> NS Reply III-F-265.

<sup>1217</sup> NS Reply III-F-265 to III-F-267.

<sup>1218</sup> NS Reply III-F-265 to III-F-267.

<sup>1219</sup> NS Reply III-F-266.

<sup>1220</sup> NS Reply III-F-267.

<sup>1221</sup> DuPont Rebuttal III-F-127 to III-F-128.

<sup>1222</sup> DuPont Rebuttal III-F-127.

<sup>1223</sup> DuPont Rebuttal III-F-127.

<sup>1224</sup> DuPont Rebuttal III-F-128.

<sup>1225</sup> DuPont Rebuttal III-F-128.

configuration, which are the determining factors in establishing the number and location of these facilities.

### 3. Fueling Facilities

DuPont states that it has provided fueling platforms at the six major DRR yards and track side truck fueling for locomotives at all other yards.<sup>1226</sup> DuPont submits costs for fueling facilities of \$16.9 million.<sup>1227</sup>

On reply, NS argues that the DRR would require twelve fueling stations at each DRR hump yard and each large flat switching yard, and six fueling stations per yard at all other yards.<sup>1228</sup> NS states that it accepts DuPont's base cost for each locomotive fueling station as a starting point, but specific costs must be added to account for missing components.<sup>1229</sup> NS states that it developed these costs from locomotive fueling projects in Stockton, Cal., San Bernardino, Cal., and Tacoma, Wash.<sup>1230</sup> NS accepts DuPont's approach to the use of trucks where locomotive fueling facilities are not available, but it adds costs where trucking fueling is being used.<sup>1231</sup>

On rebuttal, DuPont argues that NS has not criticized the location and number of its fueling facilities, and it has not demonstrated that they are insufficient for the DRR.<sup>1232</sup> Similarly, DuPont argues that NS has not explained why fixed fueling stations are needed in place of direct-to-locomotive fueling.<sup>1233</sup> DuPont argues that NS has positioned fixed fueling facilities where it currently has them on NS lines and that the DRR is not under an obligation to replicate NS fueling facilities.<sup>1234</sup> DuPont adds costs on rebuttal for overhead service platforms, platform mounted fuel cranes, and fuel management systems.<sup>1235</sup> DuPont does not accept NS's yard configuration, as previously discussed, and continues to include fueling by truck and the

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<sup>1226</sup> DuPont Opening III-F-44.

<sup>1227</sup> DuPont Opening III-F-45.

<sup>1228</sup> NS Reply III-F-258.

<sup>1229</sup> NS Reply III-F-258.

<sup>1230</sup> NS Reply III-F-258.

<sup>1231</sup> NS Reply III-F-259.

<sup>1232</sup> DuPont Rebuttal III-F-123.

<sup>1233</sup> DuPont Rebuttal III-F-123.

<sup>1234</sup> DuPont Rebuttal III-F-123.

<sup>1235</sup> DuPont Rebuttal III-F-123.

locomotive servicing facilities it submitted on opening.<sup>1236</sup> DuPont does include costs for facilities needed at direct-to-locomotive facility locations.<sup>1237</sup>

Both parties agree that all yards should be equipped with fueling facilities, but they disagree on both the number of yards and the number and type of fueling stations each of those facilities should contain. The Board will accept NS's evidence as the best of record. We have accepted NS's operating plan, and fueling operations are a key component of that plan. Therefore, we accept the design and layout of NS's fueling stations. Furthermore, because we are accepting NS's system configuration, we will accept NS's higher number of yards as well.

#### 4. Headquarters Building

DuPont has located the DRR's headquarters at the Roanoke Yard.<sup>1238</sup> DuPont states that the headquarters building is approximately 20,000 square feet.<sup>1239</sup> DuPont states that it used a Means online costs calculator for designing structures and submits a cost of \$3.1 million.<sup>1240</sup>

NS rejects DuPont's design and costs for its headquarters building.<sup>1241</sup> NS argues that DuPont's workpapers reveal that the headquarters building is 31,803 square feet and not 20,000 square feet.<sup>1242</sup> NS also argues that DuPont has grossly underestimated the number of employees the headquarters building would need to accommodate, and states 1,233 would be needed at the DRR headquarters.<sup>1243</sup> NS calculated the required square feet for the headquarters building using the average square feet per employee DuPont used on opening.<sup>1244</sup> NS argues that using this methodology the DRR headquarters would need to be 276,192 square feet.<sup>1245</sup>

NS states that it used Means "M.470 Commercial/Industrial Institutional Office, 5-10 story" and the associated costs per square foot of floor area table to determine the cost data for

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<sup>1236</sup> DuPont Rebuttal III-F-124.

<sup>1237</sup> DuPont Rebuttal III-F-124.

<sup>1238</sup> DuPont Opening III-F-44.

<sup>1239</sup> DuPont Opening III-F-44.

<sup>1240</sup> DuPont Opening III-F-44.

<sup>1241</sup> NS Reply III-F-255.

<sup>1242</sup> NS Reply III-F-255.

<sup>1243</sup> NS Reply III-F-255 to III-F-256.

<sup>1244</sup> NS Reply III-F-256.

<sup>1245</sup> NS Reply III-F-256.

the DRR headquarters.<sup>1246</sup> NS states that it generally accepts DuPont site construction unit costs, but that it understated or omitted the costs of certain construction items.<sup>1247</sup> NS states that it corrects these problems on reply and submits a total cost of \$33.1 million for the DRR headquarters building.<sup>1248</sup>

On rebuttal, DuPont states that NS's headquarters personnel count is overstated.<sup>1249</sup> DuPont argues that 429 employees would require 93,500 square feet and could be contained in a two story building.<sup>1250</sup> DuPont accepts NS's average costs of \$120 per square foot and applies it to the total square feet of the headquarters building in order to submit a total cost of \$11.2 million for the DRR headquarters.<sup>1251</sup>

The parties have agreed upon costs for the construction of the headquarters building, and the Board will accept the parties' agreement. The Board will accept NS's headquarters building design because it is necessitated by our acceptance of NS's operating plan. The operating plan requires a specific number of employees to perform the functions outlined in that plan and a facility sized to match the personnel necessary to operate the headquarters facility and thus the DRR.

## 5. Locomotive Shops

DuPont proposes to locate locomotive shops at the Elkhart, Conway, Roanoke, and Chattanooga yards.<sup>1252</sup> DuPont states that each shop contains a two-track facility capable of handling overhaul work and 92-day inspection, including minor running repairs.<sup>1253</sup> DuPont states that unit costs were developed based on actual locomotive shop facilities designed and constructed by Crouch Engineering.<sup>1254</sup> DuPont submits a total cost of \$12.4 million for locomotive shops.<sup>1255</sup>

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<sup>1246</sup> NS Reply III-F-257.

<sup>1247</sup> NS Reply III-F-257.

<sup>1248</sup> NS Reply III-F-258.

<sup>1249</sup> DuPont Rebuttal III-F-122.

<sup>1250</sup> DuPont Rebuttal III-F-122.

<sup>1251</sup> DuPont Rebuttal III-F-122.

<sup>1252</sup> DuPont Opening III-F-45.

<sup>1253</sup> DuPont Opening III-F-45.

<sup>1254</sup> DuPont Opening III-F-45.

<sup>1255</sup> DuPont Opening III-F-45.



NS rejects both the number of locomotive repair facilities and the designs and costs of those facilities.<sup>1256</sup> NS accepts the location of DuPont's four locomotive repair facilities, but adds six additional facilities to the DRR.<sup>1257</sup> NS argues that the facilities and equipment specified by DuPont would not be sufficient to service the DRR's locomotives.<sup>1258</sup> NS states that locomotive facilities typically cost between \$300 and \$400 per square foot rather than the \$12.03 per square foot submitted by DuPont on opening.<sup>1259</sup> NS argues that it developed the size and design of locomotive repair facilities based on the requirements of the operating plan and also from industry standards.<sup>1260</sup> NS contends that these facilities were outfitted with the necessary equipment to create a fully functional shop, and that costs were developed from actual costs realized at a number of facilities.<sup>1261</sup>

On rebuttal, DuPont states that it does not agree with NS's total of 10 major locomotive repair facilities.<sup>1262</sup> DuPont argues that NS has failed to explain why four facilities would not be sufficient for the DRR's operations.<sup>1263</sup> DuPont states that NS overstates the need for locomotive repair facilities because it has overstated its locomotive count.<sup>1264</sup> DuPont states that it has increased its locomotive count on rebuttal and therefore it will include two additional locomotive repair facilities on rebuttal as well.<sup>1265</sup> DuPont also accepts NS's facility size and cost per facility on rebuttal.<sup>1266</sup> DuPont submits a total cost of \$186 million for six DRR locomotive repair facilities.<sup>1267</sup>

The parties agree on facility size and costs, and the Board will accept the parties' agreement. The quantities and costs of the locomotive shops are determined by the choice of

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<sup>1256</sup> NS Reply III-F-259.

<sup>1257</sup> NS Reply III-F-259 to III-F-260.

<sup>1258</sup> NS Reply III-F-260.

<sup>1259</sup> NS Reply III-F-260.

<sup>1260</sup> NS Reply III-F-260.

<sup>1261</sup> NS Reply III-F-260.

<sup>1262</sup> DuPont Rebuttal III-F-125.

<sup>1263</sup> DuPont Rebuttal III-F-125.

<sup>1264</sup> DuPont Rebuttal III-F-125.

<sup>1265</sup> DuPont Rebuttal III-F-125.

<sup>1266</sup> DuPont Rebuttal III-F-125.

<sup>1267</sup> DuPont Rebuttal III-F-125.

operating plan and the size of the locomotive fleet. The Board will accept NS's quantities and costs as the best evidence of record because we are accepting NS's operating plan and locomotive fleet.

## 6. MOW Buildings

On opening, DuPont states that the DRR will have 36 MOW buildings and that each building is similar in design to crew change facilities, but that the interior is smaller as there are fewer employees.<sup>1268</sup> DuPont states that unit costs and specifications were developed from actual MOW buildings designed by Crouch Engineering.<sup>1269</sup> DuPont submits a total cost of \$3.8 million for MOW buildings.<sup>1270</sup>

On reply, NS states that DuPont uses the same design and cost assumption it uses for crew change facilities and yard office buildings, and that its critiques from those sections, discussed above, apply here as well.<sup>1271</sup> NS argues that DuPont's MOW buildings are too small to house all of the necessary equipment and crews and therefore its sizing is infeasible.<sup>1272</sup> NS argues that MOW buildings would have to be between 3,000 to 3,500 square feet.<sup>1273</sup> NS revises DuPont's costs and MOW facilities, and then adds two additional types of buildings: mechanical facilities and equipment warehouses.<sup>1274</sup> NS states that it conservatively assumes a MOW building of 2,240 square feet, the same size as a major crew change facility and it therefore submits the same Means based cost per square foot, discussed above.<sup>1275</sup>

NS argues that some MOW buildings are located on yards where site costs are incorporated into yard estimate, but that some MOW buildings are stand-alone facilities that require the development of their own site cost estimates.<sup>1276</sup> NS argues that DuPont failed to submit these site costs, and that NS developed a site estimate devised from DuPont's headquarters site cost estimate.<sup>1277</sup>

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<sup>1268</sup> DuPont Opening III-F-47.

<sup>1269</sup> DuPont Opening III-F-47.

<sup>1270</sup> DuPont Opening III-F-47.

<sup>1271</sup> NS Reply III-F-267.

<sup>1272</sup> NS Reply III-F-268.

<sup>1273</sup> NS Reply III-F-268.

<sup>1274</sup> NS Reply III-F-268.

<sup>1275</sup> NS Reply III-F-269.

<sup>1276</sup> NS Reply III-F-269.

<sup>1277</sup> NS Reply III-F-269.

NS also argues that DuPont failed to submit separate mechanic facilities to service high-rail MOW vehicles.<sup>1278</sup> NS provides costs for these facilities based upon Means M.290 "Garage, Repair" and includes the associated costs per square foot of floor area.<sup>1279</sup> NS submits site costs, which are developed on the same basis as the site costs for MOW buildings.<sup>1280</sup>

NS also includes costs for the secure storage of equipment, which it contends are typically stored in a fenced enclosure adjacent to MOW buildings.<sup>1281</sup> NS states that in snowy climates or areas with security issues these pieces of equipment require a warehouse and that based upon its own Operating Plan determined the number of MOW warehouses the DRR would require.<sup>1282</sup>

On rebuttal, DuPont rejects NS's increase in the size of MOW buildings as arbitrary, because NS has not shown that its own MOW facilities have extra garage and outdoor storage.<sup>1283</sup> DuPont states that it has adjusted the MOW facility cost to reflect the rebuttal costs of the small crew change facility.<sup>1284</sup> DuPont argues that NS has grossly increased the number of MOW facilities, by including 91 facilities.<sup>1285</sup> DuPont states that it has included one MOW facility at each Roadmaster location, for a total of 36 facilities on rebuttal.<sup>1286</sup>

DuPont notes that NS has included costs for thirteen MOW mechanic facilities to service high-rail MOW vehicles at each of NS's eight hump yards and five large flat yards.<sup>1287</sup> DuPont argues that this is a cost which has not been included in prior SAC cases.<sup>1288</sup> DuPont states that these facilities are not necessary and it has not included them on rebuttal.<sup>1289</sup>

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<sup>1278</sup> NS Reply III-F-270.

<sup>1279</sup> NS Reply III-F-270.

<sup>1280</sup> NS Reply III-F-270.

<sup>1281</sup> NS Reply III-F-270.

<sup>1282</sup> NS Reply III-F-270.

<sup>1283</sup> DuPont Rebuttal III-F-129.

<sup>1284</sup> DuPont Rebuttal III-F-130.

<sup>1285</sup> DuPont Rebuttal III-F-130.

<sup>1286</sup> DuPont Rebuttal III-F-130.

<sup>1287</sup> DuPont Rebuttal III-F-130.

<sup>1288</sup> DuPont Rebuttal III-F-130.

<sup>1289</sup> DuPont Rebuttal III-F-130.

The Board will accept NS's MOW buildings size and costs as the best evidence of record because we are accepting NS's operating plan and system configuration. For the same reasons, the Board is accepting NS's MOW building count with an adjustment to the number of buildings located at yards to reflect the correct number of yards. The Board will reject NS's inclusion of MOW warehouse and maintenance facilities because NS has failed to demonstrate that they have used these facilities at actual MOW locations and that they are necessary for the operation of the DRR.

## **7. Other Facilities and Site Costs**

DuPont has included costs for other facilities and site preparation costs.<sup>1290</sup> DuPont submits a total of \$182 million for these costs, which include an automobile handling facility, locomotive service areas in certain DRR yards, yard lighting, yard drainage, and other assorted site preparation costs.<sup>1291</sup>

### **a. Paving**

NS states that DuPont has underestimated the amount of paving that would be required for the DRR facilities, because it assumed that the DRR would only pave the access to the yard leads and public ways.<sup>1292</sup> NS argues that DuPont has failed to provide for paving of parking lots for yard, shop, and transportation employees.<sup>1293</sup> NS states it used aerial photos of template yards and facilities to develop paving requirements and then developed material volumes using average soil types and anticipates average volumes of traffic.<sup>1294</sup>

On rebuttal, DuPont accepts the paving requirement identified by NS and its sizes for these facilities.<sup>1295</sup> DuPont does not accept NS's paving unit costs, because NS has not justified them.<sup>1296</sup> DuPont continues to rely on its opening paving unit costs, except that it accepts NS paving costs for a portion of intermodal facilities where containers are stored.<sup>1297</sup>

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<sup>1290</sup> DuPont Opening III-F-48.

<sup>1291</sup> DuPont Opening III-F-48.

<sup>1292</sup> NS Reply III-F-272.

<sup>1293</sup> NS Reply III-F-272.

<sup>1294</sup> NS Reply III-F-273.

<sup>1295</sup> DuPont Rebuttal III-F-131.

<sup>1296</sup> DuPont Rebuttal III-F-131.

<sup>1297</sup> DuPont Rebuttal III-F-131.

The Board will accept the parties' agreements on the volume of required paving for the DRR facilities and the costs of paving that portion of intermodal facilities where containers are stored. The Board will accept NS's quantities for additional areas requiring paving because we have accepted NS's facilities which require paving. The Board will accept DuPont's unit costs, except for those portions of intermodal facilities where the parties have reached an agreement, because DuPont's unit costs are feasible.

**b. Lighting**

NS states that it used the aerial photos to quantify approximate yard lighting needs.<sup>1298</sup> NS argues that DuPont provided no details supporting its lighting costs or the infrastructure it would require.<sup>1299</sup> NS states that it developed a lighting system based on "480 volt, three-phase power to optimize the balance between conductor size and voltage drop."<sup>1300</sup> NS states that its costs for this system included concrete foundations to support 100-foot light poles.<sup>1301</sup>

DuPont argues that NS's additional lighting requirements do not match those light locations at its current facilities, and that it has unnecessarily doubled the lighting requirements at each facility.<sup>1302</sup> DuPont submits the following quantities on rebuttal:

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<sup>1298</sup> NS Reply III-F-273.

<sup>1299</sup> NS Reply III-F-274.

<sup>1300</sup> NS Reply III-F-274.

<sup>1301</sup> NS Reply III-F-274.

<sup>1302</sup> DuPont Rebuttal III-F-132.

TABLE B-19

| NS Template     | High Mast Existing | High Masts Proposed by NS | Yard Type         | DuPont Rebuttal Mast Additions |
|-----------------|--------------------|---------------------------|-------------------|--------------------------------|
| Moraine, OH     | 0                  | 11                        | Small Class Yard  | Opening Quantity               |
| Fort Wayne, IN  | 0                  | 12                        | Medium Class      | Opening Quantity               |
| Sheffield, AL   | 6                  | 44                        | Large Class       | Opening Quantity               |
| Greensboro, NC  | 0                  | 8                         | Small Intermodal  | Opening Quantity               |
| Charlotte, NC   | 2                  | 10                        | Medium Intermodal | 2 w/Opening Quantity           |
| Unidentified    | 25                 | 50                        | Large Intermodal  | 25 w/Opening Quantity          |
| Unidentified    | –                  | 10                        | Small Automotive  | 3 w/Opening Quantity           |
| Petersburg, VA  | 8                  | 12                        | Medium Automotive | 8 w/Opening Quantity           |
| Shelbyville, KY | 16                 | 63                        | Large Automotive  | 16 w/Opening Quantity          |
| Harrisburg, PA  | 0                  | –                         | –                 | Opening Quantity               |

The Board will accept DuPont's rebuttal quantities and costs for lighting because it is adopting NS's current lighting infrastructure, which we conclude is appropriate and feasible for the DRR. We note that NS has provided no justification for the deviation from its current lighting infrastructure, which DuPont has adopted.

**c. Main Switch Gear**

NS argues that DuPont also failed to include costs for main electrical switchgear for large yard and locomotive shops.<sup>1303</sup> NS asserts that this is necessary to provide site power and would cost approximately \$800,000 for a large yard or locomotive shop.<sup>1304</sup> NS developed costs and quantities for power and communication duct banks for this equipment.<sup>1305</sup>

DuPont states that it inadvertently omitted the costs for main electrical switch gear on opening.<sup>1306</sup> The parties' workpapers reveal that they agree on quantities and costs for main electrical switch gear, and the Board will accept the parties' agreement.

<sup>1303</sup> NS Reply III-F-274.

<sup>1304</sup> NS Reply III-F-274.

<sup>1305</sup> NS Reply III-F-274 to III-F-275.

<sup>1306</sup> DuPont Rebuttal III-F-134.

**d. Bollards**

NS states that DuPont provided for 25 bollards in major yards and six bollards in minor yards.<sup>1307</sup> NS argues that a conservative estimate is 200 bollards per yard based on the average number of features per yard requiring bollards.<sup>1308</sup>

On rebuttal, DuPont argues that NS's addition of 175 bollards is unrealistic and unsupported.<sup>1309</sup> DuPont states that they are only used to protect overhead doors of a shop or transformers on the ground.<sup>1310</sup> DuPont maintains its opening quantity.<sup>1311</sup>

The Board will accept DuPont's opening quantities and costs for bollards because, for the reasons DuPont states, we believe they are a feasible and realistic approach to protecting DRR facilities.

**e. Guard Booths**

NS states that DuPont did not provide for guard booths on opening.<sup>1312</sup> NS states that it provides for guard booths at the entrance of every automotive and intermodal facility.<sup>1313</sup> At certain larger intermodal and automotive facilities, NS provides for two booths while providing for one booth at smaller facilities.<sup>1314</sup> NS states that it developed costs from a supplier, FS industries, which includes delivery, sales tax, and a general contractor markup of 10%.<sup>1315</sup>

DuPont argues that it did provide guard booths on opening, one at each automobile yard based on its yard building cost.<sup>1316</sup> DuPont argues that NS failed to explain why two guard

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<sup>1307</sup> NS Reply III-F-275.

<sup>1308</sup> NS Reply III-F-275.

<sup>1309</sup> DuPont Rebuttal III-F-134.

<sup>1310</sup> DuPont Rebuttal III-F-134.

<sup>1311</sup> DuPont Rebuttal III-F-134.

<sup>1312</sup> NS Reply III-F-275 to III-F-276.

<sup>1313</sup> NS Reply III-F-275.

<sup>1314</sup> NS Reply III-F-275 to III-F-276.

<sup>1315</sup> NS Reply III-F-276.

<sup>1316</sup> DuPont Rebuttal III-F-135.

booths were necessary at all automotive yards.<sup>1317</sup> DuPont accepts NS's costs for a guard booth.<sup>1318</sup>

The parties agree on costs for guard booths, and the Board will accept the parties' agreement. The Board will accept DuPont's guard booth quantities, because we conclude its placement of guard booths is realistic and feasible for the operations of the DRR and NS has failed to provide evidence to convince us otherwise.

**f. Mechanic Repair Shops**

NS states that DuPont did not provide mechanic repair shops and that they are necessary for the DRR to maintain and repair yard hostlers and forklifts.<sup>1319</sup> NS argues that it included these facilities to meet the needs of its Operating Plan.<sup>1320</sup> NS states that it used Means M.290 "Garage, Repair" and the associate costs per square foot to determine the costs of these facilities.<sup>1321</sup>

DuPont states that NS included 12 mechanic repair shops and argues that shops of this nature have never been included in a prior SAC proceeding.<sup>1322</sup> DuPont disagrees with the need for these shops and notes that NS has failed to justify their need or their location on the DRR.<sup>1323</sup> DuPont rejects their inclusion on rebuttal.<sup>1324</sup>

DuPont notes that while NS did not discuss it on reply, NS included the costs for 26 mechanical offices and provided no explanation for the purpose of these facilities.<sup>1325</sup> DuPont argues that it has included yard offices at all yard locations and these buildings are sufficient.<sup>1326</sup>

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<sup>1317</sup> DuPont Rebuttal III-F-135.

<sup>1318</sup> DuPont Rebuttal III-F-135.

<sup>1319</sup> NS Reply III-F-276.

<sup>1320</sup> NS Reply III-F-277.

<sup>1321</sup> NS Reply III-F-277.

<sup>1322</sup> DuPont Rebuttal III-F-135.

<sup>1323</sup> DuPont Rebuttal III-F-135.

<sup>1324</sup> DuPont Rebuttal III-F-136.

<sup>1325</sup> DuPont Rebuttal III-F-136.

<sup>1326</sup> DuPont Rebuttal III-F-136.



The Board will reject NS's inclusion of costs and quantities for these mechanical repair shops and the mechanical offices identified by DuPont above because NS has not demonstrated their use or necessity for the DRR's operations.

**g. Observation/Yard Master Tower**

NS states that DuPont did not include observation buildings or yard master towers on opening.<sup>1327</sup> NS provides for the construction of these facilities in accordance with its Operating Plan.<sup>1328</sup> NS states that it developed the costs for these towers by integrating them into crew change facilities at applicable yards.<sup>1329</sup>

DuPont states that observation towers have not been included in previous SAC cases and that they are not necessary.<sup>1330</sup> DuPont argues that the presence of towers in two NS yards does not justify their need on the DRR.<sup>1331</sup>

The Board has accepted NS's system and yard configuration. That configuration is not compatible with DuPont's observation building and yard tower choices. Therefore, the Board will accept NS's quantities and costs for observation/yard master towers.

**h. Storage & Warehouse Buildings**

NS states that DuPont did not provide for any storage or warehouse buildings along the route of the DRR.<sup>1332</sup> NS argues that these facilities are necessary to store spare parts, equipment, and various materials.<sup>1333</sup> NS states that it developed quantities based on its Operating Plan and costs from Means M.700 "Warehouse, Mini."<sup>1334</sup>

DuPont states that NS has not supported the need for these additional buildings.<sup>1335</sup> DuPont argues that the mere existence of these buildings at two NS locations does not justify

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<sup>1327</sup> NS Reply III-F-277.

<sup>1328</sup> NS Reply III-F-277.

<sup>1329</sup> NS Reply III-F-278.

<sup>1330</sup> DuPont Rebuttal III-F-136.

<sup>1331</sup> DuPont Rebuttal III-F-136.

<sup>1332</sup> NS Reply III-F-278.

<sup>1333</sup> NS Reply III-F-278.

<sup>1334</sup> NS Reply III-F-278.

<sup>1335</sup> DuPont Rebuttal III-F-137.

their necessity to the DRR.<sup>1336</sup> DuPont relies upon its engineering witness to state that warehouses are not normally included at MOW facilities.<sup>1337</sup> DuPont does not include these buildings on rebuttal.<sup>1338</sup>

DuPont argues that NS included the costs for 42 miscellaneous buildings on reply but did not discuss them in its narrative.<sup>1339</sup> DuPont states that NS provided no justification for these buildings and rejects their inclusion on rebuttal.<sup>1340</sup>

The Board will reject NS's inclusion of storage, warehouse, and miscellaneous buildings, because we find that their inclusion is not necessary to support the operations or configuration of the DRR.

**i. Foundation Designs**

NS states that DuPont did not include piles and caissons that are necessary to support some buildings.<sup>1341</sup> NS states that piles increase construction costs significantly and that it has conservatively determined that piles would only be required at the headquarters building and major warehouses.<sup>1342</sup>

As discussed above, DuPont accepts NS's costs per square foot for the headquarters building but rejects the major warehouse buildings included by NS.<sup>1343</sup> The Board will accept the parties' agreement as to foundation designs and costs. The Board will reject NS's foundation designs and costs for warehouse facilities because we excluded these facilities, as previously discussed.

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<sup>1336</sup> DuPont Rebuttal III-F-137.

<sup>1337</sup> DuPont Rebuttal III-F-137.

<sup>1338</sup> DuPont Rebuttal III-F-137.

<sup>1339</sup> DuPont Rebuttal III-F-138.

<sup>1340</sup> DuPont Rebuttal III-F-138.

<sup>1341</sup> NS Reply III-F-279.

<sup>1342</sup> NS Reply III-F-279.

<sup>1343</sup> DuPont Rebuttal III-F-138.

**j. Two-Person Signal Maintainers Building**

NS states that DuPont did not provide for the housing of signal maintainers on opening.<sup>1344</sup> NS argues that its Operating Plan requires that signal maintainers be stationed throughout the DRR system and, therefore, provided a small building at 150 separate locations.<sup>1345</sup>

DuPont argues on rebuttal that it did provide space for signal maintainers in its MOW buildings.<sup>1346</sup> DuPont rejects NS's argument that signal maintainers must be separately housed from MOW equipment and personnel.<sup>1347</sup> DuPont argues that NS has failed to show that it currently has such facilities.<sup>1348</sup> DuPont also argues that separate buildings for this purpose have not been included in previous SAC proceedings.<sup>1349</sup>

The Board will reject NS's inclusion of costs and quantities for signal maintainer buildings because DuPont has demonstrated that its plan for housing signal maintainers in MOW buildings is adequate for these purposes.

**k. Intermodal Terminals**

As discussed above, DuPont agrees that intermodal yard facilities are required at 29 of 31 locations identified by NS and it has accepted NS sizes for the intermodal terminals.<sup>1350</sup> DuPont states that NS's paving and lighting costs are grossly overstated for these facilities and have been adjusted by DuPont on rebuttal.<sup>1351</sup>

The parties agree on 29 of 31 intermodal yard facilities, and the Board will accept the parties' agreement. The Board will accept NS's inclusion of two additional yard facilities because we are accepting NS's system configuration and operating plan, which necessitates the inclusion of these additional facilities.

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<sup>1344</sup> NS Reply III-F-279.

<sup>1345</sup> NS Reply III-F-279.

<sup>1346</sup> DuPont Rebuttal III-F-138.

<sup>1347</sup> DuPont Rebuttal III-F-138.

<sup>1348</sup> DuPont Rebuttal III-F-138.

<sup>1349</sup> DuPont Rebuttal III-F-139.

<sup>1350</sup> DuPont Rebuttal III-F-139.

<sup>1351</sup> DuPont Rebuttal III-F-139.

**I. Bulk Transfer Facilities**

DuPont states that it did not include bulk transfer facilities, but it agrees that small bulk transfer facilities are required at 11 of 14 locations identified by NS and that it accepts NS's sizes for the facilities.<sup>1352</sup> DuPont states that it does not include costs for fencing these facilities.<sup>1353</sup>

The Board will accept NS's inclusion of bulk transfer facilities because we are accepting its operating plan and system configuration, and a railroad of this size and complexity, with its volume of carload traffic, will require such facilities for its operations. The Board will reject NS's inclusion of fencing at these locations because it has not demonstrated that fencing is necessary for bulk transfer facilities.

**m. Automotive Facilities**

The Board will accept the parties' agreements with regards to automotive facilities.

**8. Water Treatment**

The parties agree on wastewater treatment systems, and the Board will accept the parties' agreement.

**H. Public Improvements**

TABLE B-20

| Public Improvements                            |               |               |               |
|------------------------------------------------|---------------|---------------|---------------|
|                                                | DuPont        | NS            | STB           |
| Construct Grade Crossing                       | \$149,169,300 | \$149,169,300 | \$149,169,300 |
| Crossing Detour Costs                          | \$0           | \$58,077,000  | \$0           |
| Furnish and Install CrossBucks and Support     | \$12,042,000  | \$12,042,000  | \$12,042,000  |
| Furnish and Install Mileposts                  | \$991,115     | \$939,590     | \$939,590     |
| Furnish and Install Yard Limit Signs           | \$660         | \$660         | \$660         |
| Furnish and Install Whistle Posts              | \$1,484,747   | \$1,484,747   | \$1,484,747   |
| Furnish and Install ENS Signs                  | \$1,784,340   | \$1,784,340   | \$1,784,340   |
| Vegetation Clearing Costs (at-grade crossings) | \$0           | \$19,839,330  | \$0           |
| TOTAL                                          | \$165,472,162 | \$243,336,967 | \$165,420,637 |

<sup>1352</sup> DuPont Rebuttal III-F-139.

<sup>1353</sup> DuPont Rebuttal III-F-140.

**1. Fencing**

The parties agree to yard and automotive facility fencing costs and quantities, and the Board will accept the parties' agreements.

**2. Signs, Highway Crossings and Road Crossing Devices**

DuPont states that the DRR is building all at-grade crossings and paying 100% of the materials for those crossings.<sup>1354</sup> DuPont states that it has included \$105 million for at-grade crossings and consistent with prior Board decisions it has also included 10% of the costs for crossing protection.<sup>1355</sup> For grade-separated crossings, DuPont states it is paying for 10% of the total investment costs in those structures for a total cost of \$9 million.<sup>1356</sup>

**a. Signs and Road Crossing Devices**

NS states that DuPont's support for sign costs was developed from the Tennessee Department of Transportation's estimates for railroad advance warning highway signage.<sup>1357</sup> NS argues that DuPont did not take into account additional costs required to install signage on DRR right-of-ways and at-grade crossings.<sup>1358</sup> NS developed its costs from actual NS projects produced in discovery. NS submits \$2.655 million to install crossbucks at all crossings.<sup>1359</sup>

On rebuttal, DuPont states that the parties agree on the signs and costs to be included for the DRR.<sup>1360</sup> The Board will accept the parties' agreement.

**b. ENS**

NS states the Emergency Notification Signs are now a requirement for all railroads, per Section 205 of the Rail Safety Improvement Act of 2008.<sup>1361</sup> NS states that the DRR has a total

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<sup>1354</sup> DuPont Opening III-F-49.

<sup>1355</sup> DuPont Opening III-F-49.

<sup>1356</sup> DuPont Opening III-F-49.

<sup>1357</sup> NS Reply III-F-281.

<sup>1358</sup> NS Reply III-F-281.

<sup>1359</sup> NS Reply III-F-281.

<sup>1360</sup> DuPont Rebuttal III-F-141.

<sup>1361</sup> NS Reply III-F-281.

of 9,000 at-grade crossings and would therefore require 18,000 ENS signs.<sup>1362</sup> NS submits a cost of \$1.78 million.<sup>1363</sup> On rebuttal, DuPont accepts the inclusion of ENS signs. The Board will accept the parties' agreement.

**c. Grade-Separated and At-Grade Crossings**

**i. Grade Separations**

Grade separations were discussed above in the highway overpass section.

**ii. At-Grade Crossings**

On reply, NS accepts the number of DRR at-grade crossings and the crossing surface configuration submitted by DuPont.<sup>1364</sup> DuPont accepts NS's unit costs per track-foot of crossing.<sup>1365</sup> The Board will accept the parties' agreements.

**iii. At-Grade Crossing Detours**

The parties agree on at-grade cross costs and quantities, and the Board will accept the parties' agreement.

**iv. At-Grade Crossing Vegetation Removal**

NS argues that both the Federal Highway Administration and the Federal Railroad Administration have requirements for establishing and maintaining the Sight Triangle at highway-rail crossings.<sup>1366</sup> NS states that these requirements necessitate vegetation removal for at-grade crossings.<sup>1367</sup> NS includes additional costs for vegetation clearing at each at-grade crossing.<sup>1368</sup> NS submits a total public improvement cost of \$256 million.<sup>1369</sup>

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<sup>1362</sup> NS Reply III-F-282.

<sup>1363</sup> NS Reply III-F-282.

<sup>1364</sup> NS Reply III-F-282 to III-F-283.

<sup>1365</sup> DuPont Rebuttal III-F-142.

<sup>1366</sup> NS Reply III-F-284.

<sup>1367</sup> NS Reply III-F-284.

<sup>1368</sup> NS Reply III-F-285.

<sup>1369</sup> NS Reply III-F-285.

DuPont states that NS's additional costs for vegetation removal are a double-count and should be rejected.<sup>1370</sup> DuPont argues that both parties have submitted costs for clearing and grubbing in their respective Roadbed Preparation costs and for annual vegetation removal in their respective maintenance-of-way costs.<sup>1371</sup>

The Board will reject NS's inclusion of costs for at-grade crossing vegetation removal because this is a maintenance expense, and not a capital investment expense.

#### **I. Mobilization**

The parties agree on a mobilization factor of 2.7%, and the Board accepts the parties' agreement.

#### **J. Engineering**

The parties agree on the application of a 10% engineering additive to the total construction cost, and the Board will accept the parties' agreement.

#### **K. Contingencies**

The parties agree on the application of a 10% contingency factor to the total construction cost and the Board will accept the parties' agreement.

#### **L. Construction Schedule**

The parties agree on a 30 month construction schedule, and the Board will accept the parties' agreement. The parties do not agree on NS's inclusion of construction costs to account for the lost production due to winter cold and rainfall during the construction period.

NS states that the DRR covers a majority of the eastern seaboard and that the DRR will encounter different degrees of seasonal weather year round.<sup>1372</sup> NS argues that Means and its associated production rates are based on good weather and good site conditions.<sup>1373</sup> NS states that it has experienced numerous setbacks due to weather and the DRR can be expected to experience similar weather-related issues which will slow construction.<sup>1374</sup> NS states that it

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<sup>1370</sup> DuPont Rebuttal III-F-142.

<sup>1371</sup> DuPont Rebuttal III-F-142.

<sup>1372</sup> NS Reply III-F-290.

<sup>1373</sup> NS Reply III-F-291.

<sup>1374</sup> NS Reply III-F-291 to 292.

looked at two factors which will have an impact on construction: (1) snow fall and cold winter weather; and (2) days lost to rain.

On rebuttal, DuPont argues that NS's additional costs for weather effects are unnecessary and a barrier to entry.<sup>1375</sup> DuPont states that under the theory of unconstrained resources the DRR would be able to accelerate the construction process agreed to by the parties to complete that process during the non-winter months.<sup>1376</sup>

The Board will reject NS's additional costs for weather-related effects because they are speculative and unnecessary. Moreover, as noted in the previous section, the parties have agreed to a 10% contingency factor for the construction of the DRR, which would account for any weather-related delays and additional labor costs to account for those lost construction days.

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<sup>1375</sup> DuPont Rebuttal III-F-146.

<sup>1376</sup> DuPont Rebuttal III-F-146.



**APPENDIX C—TRAFFIC VOLUMES AND REVENUES**

In this appendix, we examine the amount of traffic that the DRR would transport and the revenues that traffic group is expected to generate for NS over the 10-year SAC analysis period (2009-2019). The parties have agreed on the composition of the DRR's traffic group, with one exception, the inclusion of leapfrog, cross-over traffic (traffic that would move over multiple, physically discreet segments of the DRR, requiring multiple interchanges with the residual incumbent). As we state in the body of this decision, the Board need not make a determination on that dispute here.

The parties dispute other, narrower matters that affect traffic volumes and associated revenues. With respect to traffic volumes, the parties disagree on: (1) DuPont's use of NS's internal forecasts for coal volumes for the 2011 through 2015 time period; (2) whether coal volumes should be developed using region-specific growth rates or a single national growth rate ; (3) whether DuPont properly reallocated coal traffic growth from plants that have reached their capacity limits to uncapped plants; and (4) DuPont's use of a compound annual growth rate to estimate both coal and non-coal traffic volumes for 2016 through 2019. We address these four matters in section A below. With respect to the revenues that NS is expected to earn from the traffic group, we have already resolved in the body of this decision the parties' dispute over which methodology to use in allocating cross-over traffic revenues and whether revenues from NS subsidiaries Triple Crown Services and Thoroughbred Direct Intermodal Services are properly attributable to NS. In section B below, we discuss the remaining disputed revenue-related issues: (1) the proper approach to forecasting the cost and price of fuel for purposes of calculating NS's fuel surcharge revenues; and (2) the proper mileage calculations to be used in allocating cross-over traffic revenues.

**A. Tonnage**

For the period from June 2009 through 2010, DuPont used historical evidence of traffic volumes. For 2011-2015, DuPont adjusted NS's actual 2010 traffic volumes using NS's 2010 internal forecasts for volume growth in each of NS's major commodity groups (coal, agriculture, chemicals, etc.). For the remainder of the analysis period (2016 to May 2019), DuPont could not adjust traffic volumes using that internal forecast because that forecast did not extend beyond 2015. Instead, DuPont developed and used a compound annual growth rate (CAGR) using two years of NS actual data and five years of NS internal forecast data representing the 2009 to 2015 time period.

## 1. Use of NS's Internal Forecast for Coal Volumes

NS accepts DuPont's use of NS's 2010 internal forecasts to project traffic volumes through 2015 for all commodities except coal.<sup>1377</sup> As to coal, NS argues that significant, unforeseen developments and coal market changes that occurred after 2010 have rendered its 2010 forecast outdated, inaccurate, and unreliable.<sup>1378</sup> NS states that its 2010 projections for volumes of coal shipments did not anticipate the precipitous decline in coal shipments that occurred over the course of 2011 and 2012 due to the confluence of several factors affecting coal usage, including historically low natural gas prices, new environmental regulations, retirement of coal-fired power plants, and unusual weather.<sup>1379</sup> NS, therefore, states that it adjusted DuPont's SARR traffic projections by using the federal Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2012 coal data and projections to calculate DRR coal traffic volumes for 2011-2019.<sup>1380</sup> NS argues that this approach is consistent with the Board's established practice of using EIA forecasts where accurate carrier coal volume forecasts are not available.<sup>1381</sup> According to NS, its 2010 forecast was based on data and assumptions that, while reasonable when made, proved to be inaccurate and, as a result, overstated substantially NS coal transportation volumes through the end of the SAC analysis period.<sup>1382</sup> Citing Carolina Power & Light Co. v. Norfolk Southern Railway (CP&L), 7 S.T.B. 235, 250-51 (2003), NS states that the Board has substituted EIA forecast data for carrier forecast data when the carrier's coal traffic forecasts, developed during the normal course of business, proved to be inaccurate.<sup>1383</sup> Thus, NS asserts that the Board should determine here, as it did in CP&L, that using the carrier's inaccurate forecast would distort the SAC analysis,<sup>1384</sup> and that, consistent with the Board's general preference for reliance on official, neutral governmental forecasts, the Board should adopt NS's approach of applying coal-region-specific AEO forecasts to project DRR coal volumes for 2011 through May 31, 2019.<sup>1385</sup>

On rebuttal, DuPont acknowledges that, although NS's internal forecast projected a certain percentage of growth in coal volumes between 2010 and 2012, the actual change during

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<sup>1377</sup> NS Reply III-A-2.

<sup>1378</sup> NS Reply III-A-2.

<sup>1379</sup> NS Reply III-A-2 to III-A-3.

<sup>1380</sup> NS Reply III-A-3.

<sup>1381</sup> NS Reply III-A-42.

<sup>1382</sup> NS Reply III-A-42.

<sup>1383</sup> NS Reply III-A-42.

<sup>1384</sup> NS Reply III-A-42.

<sup>1385</sup> NS Reply III-A-42.

this time period in NS coal traffic showed a decline of 9%.<sup>1386</sup> Thus, DuPont states that it accepts NS's position that its internal coal forecast missed the mark for 2010 through 2012, and that the use of EIA data as a surrogate forecast to measure the rate of change between 2011 and 2012 is preferable.<sup>1387</sup> DuPont, however, states that it does not accept NS's abandonment of the remainder of its internal forecast. According to DuPont, the 2013 through 2015 portion of NS's coal forecast shows growth which DuPont asserts is reasonable given recent information concerning the resurgence of the coal market and the increased cost of natural gas.<sup>1388</sup>

We find that use of EIA forecasts for the entire period is more appropriate here. The Board has repeatedly endorsed the use of official EIA forecasts to project SARR coal volumes. See, e.g., CP&L, 7 S.T.B. at 249-51; Duke Energy Corp. v. Norfolk S. Ry., 7 S.T.B. 89, 103 (2003). EIA is an independent, statistical arm of the U.S. Department of Energy that exists for the specific purpose of providing policy-neutral forecasts and data, and is the Board's preferred authoritative source for coal volume forecasts. See CP&L, 7 S.T.B. at 251; Duke Energy Corp. v. Norfolk S. Ry., NOR 42069, slip op. at 4-5 (STB served Feb. 3, 2004). With respect to DuPont's argument that the latter part of NS' internal forecast is reasonable, and should be applied, given the recent changes in the coal and natural gas markets, we are not convinced that the evidence is strong enough to deviate from our preferred method of using party-neutral projections, such as the EIA. Further, because we find EIA forecasts to be more appropriate, there is no need for the parties to project coal volumes for 2016 through 2019, as EIA forecasts are projected through that time.

## **2. Application of Region-Specific Forecasts for Coal Versus a Single, Undifferentiated Aggregated Growth Rate for All Coal**

On reply, NS rejects DuPont's approach of using a single aggregated growth factor for coal from all regions. Instead, NS states that it has developed DRR coal volumes by region of origin, using the EIA's 2012 AEO for each of the last 8½ years of the analysis period (2011-2019).<sup>1389</sup> NS argues that this approach more accurately reflects market conditions and changes over the last two years, and projections of changes in coal volumes in the future, based on new market conditions and other relevant factors.<sup>1390</sup>

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<sup>1386</sup> DuPont Rebuttal III-A-30.

<sup>1387</sup> DuPont Rebuttal III-A-30.

<sup>1388</sup> DuPont Rebuttal III-A-31.

<sup>1389</sup> NS Reply III-A-49 to III-A-50.

<sup>1390</sup> NS Reply III-A-50.

According to NS, DuPont combined the NS origin-specific coal volume forecasts to create an “aggregate” forecast that it applied as a single amalgamated growth factor across all DRR mine origins and coal-producing regions, without regard to the origin-specific factors and circumstances that cause variation in the projected growth or decline in coal shipments from the mines originating the coal traffic selected for the DRR.<sup>1391</sup> NS states that DuPont’s approach is inconsistent with the methodology used to develop the NS forecast, and that application of such an approach would misallocate volumes among different regions and DRR line segments.<sup>1392</sup> NS argues that, under DuPont’s aggregated growth approach, all coal volumes are assumed to change at the same rate, regardless of their coal origin region.<sup>1393</sup> Thus NS concludes that DuPont’s approach would result in a distortion of projected coal volumes and would assume coal is both homogenous and fungible, when it is not.<sup>1394</sup> NS argues that different shippers require different types of coal and DuPont’s approach would obliterate that distinction thereby distorting the varying coal demand projections for different coal regions and different shippers.<sup>1395</sup> Further, according to NS, EIA forecasts indicate that coal volumes from different regions are projected to grow or decline at different rates.<sup>1396</sup> For these reasons, NS states that DuPont’s nationwide aggregated volume change factor should be rejected, and instead, the EIA’s region-specific forecast for each region from which the DRR coal shipments would originate, should be applied.

In its rebuttal evidence, DuPont states that it accepts NS’s use of the EIA actual and projected coal production volumes by region for the 2011 and 2012 time periods, but not NS’s region-specific application.<sup>1397</sup> DuPont asserts that it applies the EIA’s most recently available AEO 2013 Preliminary forecast to NS’s Coal Forecast workpaper which designated EIA coal production regions to the corresponding DRR traffic group.<sup>1398</sup> Using the NS spreadsheet, and the same NS regional weights, DuPont states that it developed a weighted average coal index for 2011 and 2012.<sup>1399</sup> According to DuPont, it then incorporated this rate of change into the DRR forecast model along with NS’s internal forecast rates of change for coal for the 2013 to 2015

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<sup>1391</sup> NS Reply III-A-4 n.2.

<sup>1392</sup> NS Reply III-A-4 n.2.

<sup>1393</sup> NS Reply III-A-43.

<sup>1394</sup> NS Reply III-A-49.

<sup>1395</sup> NS Reply III-A-49.

<sup>1396</sup> NS Reply III-A-43.

<sup>1397</sup> DuPont Rebuttal III-A-32.

<sup>1398</sup> DuPont Rebuttal III-A-32.

<sup>1399</sup> DuPont Rebuttal III-A-32.

time period. DuPont states that it used a single composite growth index for coal, as DuPont and NS did for all other commodities.<sup>1400</sup>

DuPont rejects NS's argument that, for coal, NS's coal region-specific application is more accurate than an aggregate growth rate for all coal traffic. DuPont states that the DRR's 2010 coal volumes found in DuPont's opening statement and NS's reply make up approximately 75% of NS's total system coal traffic for 2010 and are therefore representative of NS's system and are also the basis for NS's internal marketing forecasts.<sup>1401</sup> DuPont further asserts that the DRR is representative of the NS system as demonstrated by the weighting implicit in the composite growth factor.

According to DuPont, the table below indicates that the DRR 2010 coal traffic group mix is comparable to the mix of coal included in NS's internal forecasts when NS's regional designations are applied.<sup>1402</sup> DuPont states that the EIA forecast shows PRB origins with the greatest rate of growth, thereby indicating that the DRR traffic growth may be understated (by using the single coal growth rate) since it is made up of 21% PRB traffic versus the NS internal forecast of 15%.<sup>1403</sup>

DuPont's Rebuttal Table III-A-9

| Percent Distribution of Coal Tonnage by Region—2010 |                      |                  |
|-----------------------------------------------------|----------------------|------------------|
| EIA Region                                          | NS Internal Forecast | DRR 2010 Traffic |
| (1)                                                 | (2)                  | (3)              |
| 1. CAPP/NAPP                                        | 68%                  | 68%              |
| 2. PRB                                              | 15%                  | 21%              |
| 3. Eastern                                          | 10%                  | 9%               |
| 4. Total                                            | 93%                  | 98%              |

We find that use of the region-specific EIA forecast is preferable, due to the differing projections between regions. DuPont's Rebuttal Table III-A-9 tries to show that the coal traffic mix in the NS forecast is comparable to the DRR traffic mix. However, as NS notes, this table

<sup>1400</sup> DuPont Rebuttal III-A-32.

<sup>1401</sup> DuPont Rebuttal III-A-32.

<sup>1402</sup> DuPont Rebuttal III-A-33.

<sup>1403</sup> DuPont Rebuttal III-A-33.

combines the Central Appalachian (CAPP) and Northern Appalachian (NAPP) regional coal volumes, neglecting the fact that the primary difference between the two is their respective proportions of coal traffic from those two separate regions. Because the DRR would carry a significantly higher percentage of CAPP origin coal than NS does in the real world, failure to apply the EIA's region-specific forecast overstates future DRR coal volumes. This is due to the differing regional projections, which show NAPP volumes increasing substantially and CAPP volumes decreasing substantially. The CAPP region accounts for a higher percentage of coal on the DRR than on the real-world NS system (44.4% of DRR coal vs. 37.7% in the internal NS forecasts). Because the EIA forecasts CAPP coal volumes to decline by 45% between 2010 and 2019, while projecting a 30% growth in NAPP volumes during that same period, it is critical to an accurate forecast of the DRR's traffic to apply the EIA volume projections by region. For these reasons, the Board will adopt the more precise approach presented by NS and accept the DRR coal volumes set forth in NS's reply evidence.

### 3. Shifting Tonnage from Capped Plants

Because electric generating plants do not normally operate at full capacity at all times, the Board has established a rule of thumb that each coal-fired generating plant's coal needs are limited by an 85% plant capacity factor. *See, e.g., W. Tex. Utils. Co. v. Burlington N. R.R.*, 1 S.T.B. 638, 661 n.47 (1996). On opening, DuPont assumed that, for generating plants that reached this 85% limit, additional traffic growth that otherwise would have occurred at that plant would be absorbed by some other plant that had not reached its 85% capacity limit.

NS rejects DuPont's attempt to reallocate coal shipment volumes in this way.<sup>1404</sup> NS states that DuPont's attempt to shift projected tons from capped plants to an entirely different plant that has not reached its capacity level is unprecedented and has never been allowed by the Board.<sup>1405</sup> According to NS, in cases such as this, where the SARR moves coal that originates in many different coal regions, the effect of such an approach would be to shift coal volumes between regions.<sup>1406</sup> NS argues that, despite the fact that an 85% capacity factor assumption very likely overstates the consumption of coal by plants whose coal the DRR would move, it conservatively applies the 85% capacity factor that the Board has applied for more than 15 years.<sup>1407</sup> NS states that, because coal volumes are projected to decline significantly during the

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<sup>1404</sup> NS Reply III-A-50 n.45.

<sup>1405</sup> NS Reply III-A-50 n.45.

<sup>1406</sup> NS Reply III-A-50 n.45.

<sup>1407</sup> NS Reply III-A-50 n.45; see also NS Reply WP "2010 Coal 80-Chem 40-Auto 60 Reply.xlsx."

SAC analysis period, application of an 85% capacity factor has relatively limited effect in this case.<sup>1408</sup>

DuPont disputes NS's assertion that shifting projected tons from a capped plant to an uncapped plant is unprecedented and has never been allowed by the Board. DuPont asserts that the concept of shifting tonnage is valid and requires no justification.<sup>1409</sup> However, DuPont argues that the DRR includes 75% of the NS system coal traffic and is therefore representative of the NS internal forecast.<sup>1410</sup> Thus, DuPont states that it assumes that, implicit in NS's internal forecasts, are adjustments for anticipated plant closures and capacity issues.<sup>1411</sup> DuPont further argues that it applied the NS forecasted coal growth rate, capped plants that had limitations, and applied an adjusted rate to non-capped volumes to tie back to NS's internal forecasted growth.<sup>1412</sup>

Although NS claims that shifting projected tons from capped plants to uncapped plants is unprecedented and has never been allowed by the Board, we disagree, although the practice has never been contested. The idea of shifting tonnage is quite logical. Implicit in the EIA forecasts are adjustments for anticipated plant closures and capacity issues. See EIA 2014 AEO Early Release Overview at 14 ("After 2020, generation from coal flattens out and remains lower than projected in AEO2013, because more coal-fired capacity is retired and fewer new coal plants are built."). We are not persuaded that the sort of shifting of traffic between plants that DuPont has projected would necessarily result in the shifting of coal volumes between regions, as NS claims. If, for example, a plant in Georgia that uses PRB coal reaches its capacity limit, that does not necessarily mean that the additional PRB coal that the Georgia plant would have otherwise used would be shifted to a plant that uses CAPP coal. The DRR would serve many power plants using many different types of coal. To achieve the overall coal growth rate in the EIA forecast—which incorporates anticipated plant closures, plant openings, and plants capacity limitations—capped plants that have no growth must be offset by adjusting the growth rate at non-capped plants. Thus, we find that DuPont's method is preferable.

#### **4. Compound Annual Growth Rate**

As noted above, for the 2016 through May 2019 time period, DuPont could not adjust traffic volumes using NS's internal forecasts because that forecast did not extend beyond 2015.

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<sup>1408</sup> NS Reply III-A-50 n.45.

<sup>1409</sup> DuPont Rebuttal III-A-33.

<sup>1410</sup> DuPont Rebuttal III-A-33.

<sup>1411</sup> DuPont Rebuttal III-A-33.

<sup>1412</sup> DuPont Rebuttal III-A-33 to III-A-34.

As such, DuPont applied a CAGR to estimate longer-term coal traffic volumes by averaging the hypothetical annual change in NS coal volumes from 2009-2015 and applied that growth rate approach to each subsequent year.<sup>1413</sup> On reply, NS rejects this CAGR approach. According to NS, DuPont's methodology would distort SARR coal traffic volumes by projecting steady 4.4% annual increases in 2016-2019, while EIA, at the same time, would project decreases in each of those years.<sup>1414</sup> Because we have already accepted the EIA as the appropriate forecast for coal, and because the EIA projects coal volumes through 2019, the parties arguments noted above are moot.

For non-coal traffic, with a few exceptions, NS states that it generally accepts DuPont's approach for determining DRR volumes through 2015, using NS's actual volumes for selected traffic for 2009 and 2010, and applying volume change indices based on NS forecasts to project traffic volumes for 2011 through 2015.<sup>1415</sup> However, NS states that DuPont's use of an amalgamated CAGR for projecting SARR traffic from 2016 through 2019, including peak year traffic, is an error that would artificially inflate projected DRR traffic volumes during those years.<sup>1416</sup> NS states that DuPont projected volumes of all other DRR traffic using a CAGR commencing in 2009. NS asserts that DuPont's use of the 2009 low traffic watermark as the baseline for developing mean growth rate for longer-term non-coal traffic overstates the likely growth rate in future years because it assumes that the rate of growth in traffic during the rebound from the recession will continue at the same rate from 2016 to 2019.<sup>1417</sup> NS argues that there is no reason to anticipate that traffic growth would continue at the pace it followed coming out of the recession and DuPont proffers none in its evidence.<sup>1418</sup> To correct what it argues is a distorting approach, NS states that it has derived from its 2010 forecast a year-over-year 2014-2015 growth rate for each category of traffic and applied that rate as the projected annual growth rate for each of those types of traffic for the subsequent years 2016 to mid-2019.<sup>1419</sup> According to NS, this approach of using the final year growth rate in the forecast for the remaining years of the SAC analysis period has been accepted in prior cases. NS further argues that applying these growth rates to the 2015 volumes for each of the corresponding traffic types is a more reasonable and accurate projection of DRR non-coal traffic volumes.<sup>1420</sup>

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<sup>1413</sup> DuPont Opening III-A-9.

<sup>1414</sup> NS Reply III-A-38.

<sup>1415</sup> NS Reply III-A-51.

<sup>1416</sup> NS Reply III-A-51.

<sup>1417</sup> NS Reply III-A-52.

<sup>1418</sup> NS Reply III-A-52.

<sup>1419</sup> NS Reply III-A-53; see NS Reply WP "DRR Traffic Revenue Forecast Reply.xlsx."

<sup>1420</sup> NS Reply III-A-53.



On rebuttal, DuPont states that, for non-coal traffic, its use of an average growth rate based on six years of historical data produces more reliable and accurate results than NS's use of a single year-over-year change applied to 2016 through 2019.<sup>1421</sup> According to DuPont, though NS rejects DuPont's use of 2009 as the base year (because 2009 incorporates recovery level growth rates into the future), DuPont states that it included 2009 in its CAGR because that is when the DRR would have commenced operations. Further, DuPont argues that the CAGR is used by DuPont to forecast the last three plus years of DRR operations based on seven years of NS's own data. DuPont asserts that this data is representative of how NS has performed (historic data) and how NS anticipates its business will perform in the future (NS's internal forecasts). According to DuPont, utilization of multiple years of data effectively evens out varying annual changes.

With respect to the approach the parties have proffered for projecting non-coal SARR traffic for 2016 through 2019, we will accept DuPont's methodology. NS argues that DuPont's CAGR includes an unusual year at the beginning of its 2009-2015 analysis, due to recovery from the recession, leading to what NS believes is too high a projected annual growth rate. However, the benefit of the DuPont CAGR's six-year time span—a combination of actual and forecasted data—is to mitigate the likelihood that a single, extraordinary year may skew the result. As we state elsewhere in this decision, Board practice encourages the use of multi-year data for most estimates. See Appendix A (addressing insurance costs and travel expense); Appendix D (addressing inflation of land values); see also Ariz. Elec. Power Coop. v. BNSF Ry. (AEPCO), NOR 42113, slip op. at 139 (STB served Nov. 22, 2011), appeal docketed sub nom. Ariz. Elec. Power Coop. v. STB, No. 12-1246 (D.C. Cir. June 8, 2012). Indeed, the Board favors use of an average of multiple years because using data from a single year—as NS has done here, in relying on its 2010 forecast for a year-over-year 2014-2015 growth rate—can increase the risk of an aberrational result.

NS argues that its approach of using the final year growth rate in the forecast for the remaining years of the SAC analysis period was accepted by the Board in AEPCO. In that case, however, there was no dispute between the parties over the use of such a procedure, much less a comparison between this single-year approach and a multi-year analysis such as the one DuPont presents here. See AEPCO, slip op. at 22 (parties agreed to rely on final year growth rate). DuPont's approach is more consistent with the Board's general preference for multi-year analysis designed to improve the accuracy of estimates, and thus is the best evidence of record.

Table C-1 sets forth the total tonnage figures of the parties, for both coal and non-coal traffic, and the Board's findings here.

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<sup>1421</sup> DuPont Rebuttal III-A-35.

TABLE C-1

| Tonnage Forecasts<br>(millions) |  |        |       |       |
|---------------------------------|--|--------|-------|-------|
| Year                            |  | DuPont | NS    | STB   |
| 2009                            |  | 181.3  | 181.3 | 181.3 |
| 2010                            |  | 340.5  | 340.5 | 340.5 |
| 2011                            |  | 350.7  | 351.7 | 351.8 |
| 2012                            |  | 351.7  | 353.6 | 353.6 |
| 2013                            |  | 361.6  | 364.2 | 364.2 |
| 2014                            |  | 373.6  | 369.3 | 369.3 |
| 2015                            |  | 381.3  | 370.6 | 370.6 |
| 2016                            |  | 397.7  | 376.1 | 383.4 |
| 2017                            |  | 415.2  | 381.7 | 396.9 |
| 2018                            |  | 433.7  | 388.9 | 412.9 |
| 2019                            |  | 453.3  | 396.9 | 430.4 |

## B. Revenues

### 1. Fuel Surcharge

The parties dispute the revenues NS is expected to receive from the traffic group under its fuel surcharge program and the incremental fuel costs the DRR would incur over the 10-year analysis period. NS challenges DuPont's use of two different indices to project the changes in the price of diesel fuel. NS states that, consistent with Board precedent, DuPont used a hybrid Adjusted and Unadjusted Rail Cost Adjustment Factor (RCAF-A/ RCAF-U) index for projecting fuel costs as a component of SARR operating expenses, which predicted that the price of diesel fuel would be flat or decreasing through 2015.<sup>1422</sup> However, NS asserts that rather than adopting the same diesel fuel price assumptions for purposes of forecasting NS fuel surcharge revenues,<sup>1423</sup> DuPont used an EIA forecast of West Texas Intermediate (WTI) which predicted that the price of that same fuel would increase significantly over the same time period.<sup>1424</sup> According to NS, DuPont significantly overinflates NS's fuel surcharge revenues by using these

<sup>1422</sup> NS Reply III-A-69.

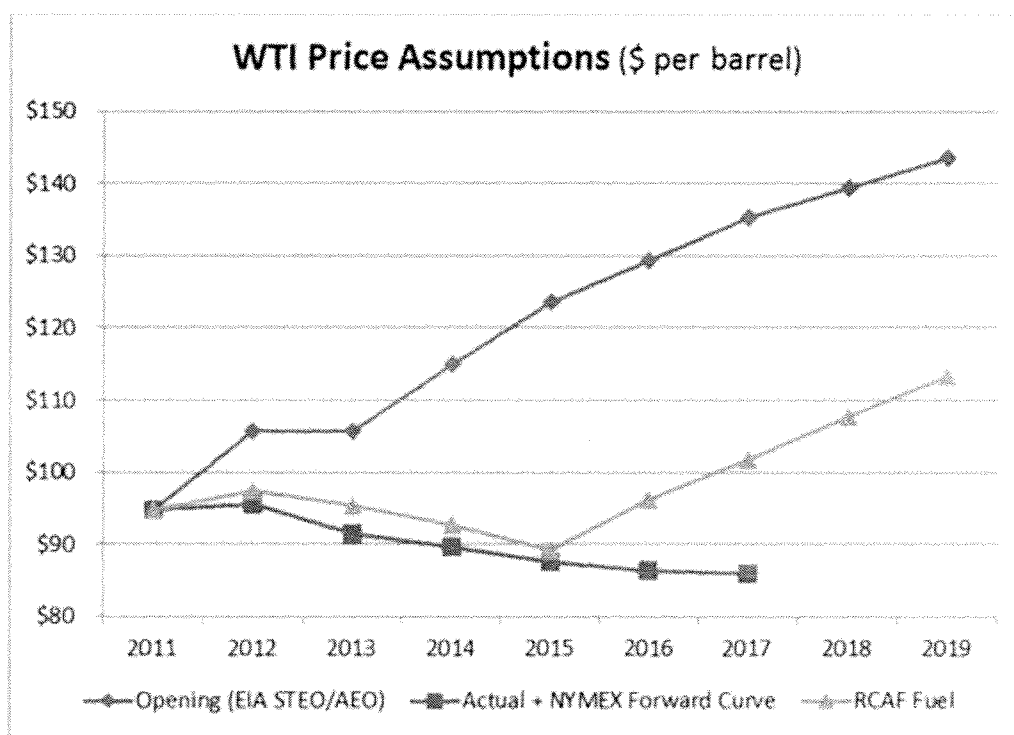
<sup>1423</sup> NS incorrectly refers to "the DRR's" fuel surcharge revenues. A SAC analysis involves comparing the costs to build and operate the SARR with the revenues (including any fuel surcharge revenues) that the defendant carrier is expected to earn from the traffic group. See Major Issues in Rail Rate Cases (Major Issues), EP 657 (Sub-No. 1), slip op. at 8 (STB served Oct. 30, 2006), aff'd sub nom. BNSF Ry. v. STB 526 F.3d 770 (D.C. Cir. 2008).

<sup>1424</sup> NS Reply III-A-69.

different indices. NS argues that the fundamental problem with DuPont's approach is that it uses the EIA forecast to predict NS fuel surcharge revenues while using a different forecast predicated on lower fuel prices to predict DRR fuel expenses.<sup>1425</sup> NS asserts that DuPont is relying on one set of fuel price assumptions for fuel surcharge revenue projections and another substantially different set of assumptions for fuel expense projections.<sup>1426</sup> According to NS, DuPont seeks to have it both ways by assuming that rising fuel prices would allow NS to generate additional fuel surcharge revenues, while the prices the DRR actually would pay for such fuel remains flat.<sup>1427</sup>

Graph III-A-16<sup>1428</sup>

EIA, Global Insight, and NYMEX Fuel Price Projections



NS states that its reply evidence corrects the mismatch in DuPont's projections by using, for any given period, the same fuel price index for both fuel surcharge revenue and fuel

<sup>1425</sup> NS Reply III-A-70 to III-A-71.

<sup>1426</sup> NS Reply III-A-71.

<sup>1427</sup> NS Reply III-A-71.

<sup>1428</sup> NS Reply WP "WTI & FSC Calc Reply.xlsx."

expenses.<sup>1429</sup> Specifically, NS states that, to develop fuel surcharge revenues for 2009 through 2012, it uses the actual WTI prices available from the EIA, and for the remaining years uses Global Insight's RCAF Fuel component forecast.<sup>1430</sup> According to NS, Global Insight's RCAF Fuel forecast is based on its Diesel PPI forecast, and although NS's fuel surcharge is based on WTI rather than diesel, WTI prices and diesel prices are highly and closely correlated.<sup>1431</sup> NS asserts that use of Global Insight's forecast for both fuel costs and fuel surcharges is the only way to correct the mismatching issue consistent with the Board's rules and regulations.<sup>1432</sup>

On rebuttal, DuPont states that NS admits that both the indices and the procedures used by DuPont in its opening evidence to develop fuel costs and fuel surcharge revenue were adopted by the Board in AEPSCO.<sup>1433</sup> DuPont further asserts that NS's reply attempts to argue that the change in operating "cost" associated with burning railroad diesel fuel in locomotives is the same as EIA's projected change in the "price" of intermediate crude oil at trading hubs that are used as a surrogate benchmark in NS's fuel surcharge mechanism.<sup>1434</sup> According to DuPont, the cost of fuel measures not only the acquisition of fuel but also how efficiently that fuel is used to transport products.<sup>1435</sup> By contrast, DuPont argues that the price of fuel only measures the price per gallon or barrel to purchase fuel at an intermediate point in the supply chain. DuPont asserts that price does not equal cost.<sup>1436</sup> It further argues that the same mismatch that NS accuses DuPont of exploiting in its SAC analysis actually does exist and is exploited by NS in the real-world, on a daily basis.<sup>1437</sup> DuPont states that it is merely stepping into NS's shoes and applying the same fuel surcharge program parameters as NS for its DRR movements.<sup>1438</sup>

We are not persuaded by DuPont's rebuttal evidence, which attempts to justify the inconsistency of using two divergent price forecasts for revenues and costs. The two forecasts used by DuPont are not reconcilable. If the Global Insight forecast is correct, fuel prices will initially decline through 2015 and only increase thereafter, and both fuel surcharge revenues and

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<sup>1429</sup> NS Reply III-A-71.

<sup>1430</sup> NS Reply III-A-71.

<sup>1431</sup> NS Reply III-A-71 to III-A-72.

<sup>1432</sup> NS Reply III-A-72.

<sup>1433</sup> DuPont Rebuttal III-A-71.

<sup>1434</sup> DuPont Rebuttal III-A-71.

<sup>1435</sup> DuPont Rebuttal III-A-72.

<sup>1436</sup> DuPont Rebuttal III-A-72.

<sup>1437</sup> DuPont Rebuttal III-A-72.

<sup>1438</sup> DuPont Rebuttal III-A-72.

fuel expenses will follow that pattern. On the other hand, if the EIA forecast is correct, fuel prices will increase immediately and continue to rise, and both fuel surcharge revenues and fuel expenses will follow that pattern.

We are also not persuaded by DuPont's "[p]rice does not equal cost" argument. DuPont argues that "[t]he 'price' of fuel . . . measures the price per gallon or barrel to purchase fuel at an intermediate point in the supply chain,"<sup>1439</sup> whereas the cost of fuel "measures not only the acquisition price of fuel but also how efficiently that fuel is used to transport products."<sup>1440</sup> Although there is a difference between price and cost (although not for the "efficiency" reason that DuPont posits), that difference does not justify DuPont's approach. A fuel surcharge program is ostensibly intended to allow the railroad to recoup changes in its fuel costs as fuel prices change. The critical issue, then, is not whether fuel price equal fuel cost, but rather whether there is a high correlation between changes in fuel price and changes in fuel cost. We find that there is.<sup>1441</sup> Here, DuPont has failed to explain why this historically tight correlation would not exist between changes in the market price of fuel and changes in the DRR's cost of acquiring fuel. Nor does DuPont present anything to support its claim that this same tight correlation does not exist between changes in NS's fuel surcharge revenues and changes in NS's cost of fuel. Thus, we agree with NS that consistency and logic require the use of the same forecast (or consistent forecasts) for both fuel costs and fuel surcharge revenues. DuPont argues that the Board's decision in AEPCO adopted the use of both indices, as well as the procedures DuPont used in the opening evidence to develop fuel costs and fuel surcharge revenue. However, we note that, while these forecasts were applied in AEPCO, the parties did not raise the issue under discussion here, and the Board's decision did not address it.

Finally, we do not agree with DuPont's argument that it is only taking advantage of a mismatch that NS takes advantage of in the real world. In the real world, the two indices report the same phenomenon—the price of fuel—and even if they do not match, they move in conjunction with each other as the price of fuel changes. The difference here is that DuPont is adopting a divergence between two forecasts of fuel price indices, rather than a mismatch between the actual, real-world indices. Because both indices track the price of fuel, two forecasts going in opposite directions cannot both be correct. Thus, while the real-world NS might gain or lose money as the two indices fluctuate in relation to one another, the correlation between the two indices means that NS will never encounter the total divergence shown in the forecasts here, with one index increasing steadily and the other decreasing steadily over several years.

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<sup>1439</sup> DuPont Rebuttal III-A-72.

<sup>1440</sup> DuPont Rebuttal III-A-71 to III-A-72.

<sup>1441</sup> See NS Reply WP "Fuel Surcharge Indices.xlsx."

This brings us to the question of which index to use. Although NS argues that the Board should use the RCAF-U Fuel index to project fuel surcharge revenues, the better index to use is the EIA forecast of WTI prices. Just as we look to policy-neutral, independent EIA forecasts for coal volumes, we prefer the EIA forecast for fuel prices. DuPont used this index to forecast fuel surcharge revenues and we will also apply it to forecast the fuel portion of its operating expenses as well.<sup>1442</sup>

## 2. Average Total Cost—Structured Query Language Coding Error

NS generally accepts DuPont's procedures for determining cross-over traffic revenue allocations, including DuPont's calculation of on-SARR and off-SARR mileages used to develop both variable costs and fixed costs. NS, however, argues that DuPont's opening statement contained technical mileage errors that resulted in a substantial understatement of off-SARR miles for cross-over traffic.<sup>1443</sup> According to NS, this error has, in turn, caused an over-allocation of cross-over traffic revenues to the DRR and an under-allocation of cross-over traffic revenues to the residual incumbent NS.<sup>1444</sup>

Specifically, NS argues that DuPont, in an effort to develop its URCS variable costs calculations for use in applying its cross-over traffic revenue allocation approach, calculated on-SARR and off-SARR mileages for each DRR waybill.<sup>1445</sup> NS further states that DuPont, in an attempt to calculate DRR and residual NS miles, matched the event records for each waybill with data generated from PC Miler<sup>1446</sup> to determine the distance between Standard Point Location Code<sup>1447</sup> pairs along the NS system. NS contends that DuPont's erroneous implementation of

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<sup>1442</sup> NS claims that Major Issues mandated the use of a hybrid RCAF-A/RCAF-U index for projecting SARR operating expenses. NS Reply III-A-72 (citing Major Issues, slip op. at 39-47). But the discussion in Major Issues on which NS relies dealt with how the Board would account for the SARR's productivity gains over the SAC analysis period. The choice of which index to use to measure fuel surcharge revenues and fuel costs is not related to this productivity issue. While using differing, contradictory indices might indeed be a "collateral attack" on Major Issues, using just the EIA index to support fuel cost and surcharge projections is consistent with Major Issues. For the reasons discussed above, EIA's forecast is the best option here.

<sup>1443</sup> NS Reply III-A-79.

<sup>1444</sup> NS Reply III-A-79.

<sup>1445</sup> NS Reply III-A-79.

<sup>1446</sup> PC Miler is a routing, mileage, and mapping software for the transportation and logistics industry.

<sup>1447</sup> The Standard Point Location Code is designed to provide each point of originating freight and each point of receiving freight in North America with a unique code number so

(continued . . . )

this attempted procedure caused significant understatement of off-SARR miles for cross-over traffic.<sup>1448</sup> Additionally, NS argues that DuPont incorrectly joined two sequence tables which resulted in the elimination, from DuPont's total mile calculations, of line segments that did not include DRR mileages.<sup>1449</sup> According to NS, this pervasive error affected the mileage calculation for nearly every cross-over movement.<sup>1450</sup> NS states in its reply that it has corrected the off-SARR mileage algorithm.

DuPont concedes that the technical error noted by NS was caused by an improper filter included in the Structured Query Language (SQL) coding for the shipment mileage algorithm, but DuPont disagrees with the approach supplied by NS on reply to correct such error.<sup>1451</sup> According to DuPont, NS's technical correction is inadequate.<sup>1452</sup> DuPont asserts that its opening statement described a 15-step process used to develop detailed NS shipment routes, locations, and segment miles for each individual shipment included in the DRR traffic group.<sup>1453</sup> DuPont argues that rather than revising the SQL code used by DuPont on opening, and duplicating the individual steps that were affected by the revised data, NS appears to have revised the SQL code and modified DuPont's spreadsheets to by-pass other steps that were affected in the ATC process.<sup>1454</sup>

Further, DuPont argues that NS failed to explain whether it followed DuPont's methodology, or instead developed another approach,<sup>1455</sup> and DuPont alleges that it identified a number of areas in NS's workpapers that were either incorrect or deficient.<sup>1456</sup>

According to DuPont, NS improperly adjusted the mileage calculations that were used as inputs to the variable cost calculations to reflect the rerouted mileage of the route of movement,

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( . . . continued)

constructed as to identify the point with its geographic location, using two digits to identify State, County and City and three digits to identify Sub-Code.

<sup>1448</sup> NS Reply III-A-79.

<sup>1449</sup> NS Reply III-A-79.

<sup>1450</sup> NS Reply III-A-79.

<sup>1451</sup> DuPont Rebuttal III-A-39.

<sup>1452</sup> DuPont Rebuttal III-A-39.

<sup>1453</sup> DuPont Rebuttal III-A-39.

<sup>1454</sup> DuPont Rebuttal III-A-39.

<sup>1455</sup> DuPont Rebuttal III-A-39.

<sup>1456</sup> DuPont Rebuttal III-A-40.

rather than the actual mileage of the route of movement.<sup>1457</sup> In addition to miscalculating the actual mileages, DuPont states that NS calculated “updated” DRR and non-DRR ton-miles in its reply ATC model by implementing a formulaic short-cut based on utilization of average DRR and non-DRR miles, rather than summing the actual miles for each segment from NS’s own data.<sup>1458</sup> DuPont also argues that NS calculated “corrected” fixed costs for DRR and non-DRR segments by implementing a formulaic short-cut based on application of average fixed cost per ton mile instead of the actual fixed cost per ton and the actual miles from NS’s own data.<sup>1459</sup> DuPont also states that, although NS criticizes DuPont’s claim on opening that intermodal and auto traffic included in the DRR traffic group is not subject to a reroute between Bannan, Ohio, and Kellysville, W. Va., because, as NS argues, DuPont flagged intermodal and auto traffic as rerouted in its ATC workpapers, NS’s criticism is unfounded.<sup>1460</sup> According to DuPont, such a statement suggests that either NS is misleading the Board or NS has failed to understand the operation of DuPont’s ATC model.<sup>1461</sup> DuPont states that intermodal and auto traffic records were flagged because they were eligible for a reroute, not because they were actually rerouted in the ATC model.<sup>1462</sup> Finally, DuPont asserts that NS appears to have made a number of minor, non-mileage related adjustments to the URCS Phase III variable cost inputs to apparently address the fact that NS produced incomplete electronic data in this proceeding.<sup>1463</sup>

DuPont argues that, had NS chosen to utilize the methodology developed by DuPont on opening, none of NS’s adjustments to the “corrected” mileage-based calculations would have been necessary.<sup>1464</sup> DuPont further states that NS has not shown that DuPont’s evidence is deficient or that NS’s changes have resulted in a more accurate outcome.<sup>1465</sup> As such, DuPont maintains that its rebuttal statement corrects the erroneous filter included in its SQL code by closely following the appropriate steps DuPont relied upon to develop the ATC inputs utilized on opening.<sup>1466</sup>

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<sup>1457</sup> DuPont Rebuttal III-A-40.

<sup>1458</sup> DuPont Rebuttal III-A-41.

<sup>1459</sup> DuPont Rebuttal III-A-41.

<sup>1460</sup> DuPont Rebuttal III-A-41.

<sup>1461</sup> DuPont Rebuttal III-A-41.

<sup>1462</sup> DuPont Rebuttal III-A-41.

<sup>1463</sup> DuPont Rebuttal III-A-42.

<sup>1464</sup> DuPont Rebuttal III-A-42.

<sup>1465</sup> DuPont Rebuttal III-A-42.

<sup>1466</sup> DuPont Rebuttal III-A-43.



Although DuPont raises some criticisms in its rebuttal, we will accept NS's data submitted in its reply. DuPont is correct that NS made the mileage adjustments described above. However, NS did not make mileage adjustments for all movements. As NS states, it corrected two primary errors in DuPont's allocation of revenues from cross-over traffic. For re-routes, NS appears to have shifted miles from off-SARR to on-SARR in the URCS input spreadsheets so that URCS could more accurately reflect the mileages over the DRR. In cases where waybill data for tons, miles, or fixed costs were missing, NS used averages for similar moves so that each move could be costed in URCS. Further, for revenue empty shipments and delivered railcars with zero lading weights, NS set the tons per car to one. While NS's methodology contains simplifying estimates, it seems that the adjustments made were in response to problems with the data supplied by DuPont. Further, on rebuttal, DuPont concedes the propriety of an adjustment of \$275 million—roughly two-thirds of NS's proposed \$415.8 million adjustment—to correct DuPont's acknowledged SQL coding error. But the amended methodology that DuPont used to arrive at its lower figure is improper rebuttal. In its opening evidence, DuPont failed to account for all off-SARR miles. In an attempt to correct such error, DuPont, on rebuttal, prorated its opening variable cost to the new proper mileage, rather than applying the Board's URCS methodology to each segment of the movement, as it did on opening. DuPont's prorating methodology is inconsistent with Board precedent which requires that each segment of cross-over traffic be determined using URCS.

Table C-2 presents the parties' positions on the total revenues that the traffic group is expected to generate over the analysis period and the Board's findings. For comparison purposes, we have adjusted both parties' revenue evidence to conform to the traffic group and volume levels we have selected.

TABLE C-2

| Revenue Forecasts<br>(\$ millions) |  |           |           |           |
|------------------------------------|--|-----------|-----------|-----------|
| Year                               |  | DuPont    | NS        | STB       |
| 2009                               |  | \$3,109.7 | \$2,851.7 | \$2,930.1 |
| 2010                               |  | 6,152.8   | 5,611.2   | 5,768.4   |
| 2011                               |  | 6,718.2   | 6,074.8   | 6,252.0   |
| 2012                               |  | 7,238.1   | 6,561.6   | 6,739.2   |
| 2013                               |  | 7,721.8   | 7,024.4   | 7,201.8   |
| 2014                               |  | 8,349.7   | 7,444.6   | 7,721.4   |
| 2015                               |  | 8,916.5   | 7,825.8   | 8,192.9   |
| 2016                               |  | 9,713.2   | 8,353.0   | 8,897.1   |
| 2017                               |  | 10,642.3  | 8,930.9   | 9,765.7   |
| 2018                               |  | 11,660.5  | 9,547.4   | 10,657.8  |
| 2019                               |  | 5,320.1   | 4,254.4   | 4,858.5   |

**APPENDIX D—DISCOUNTED CASH FLOW ANALYSIS**

The DCF analysis first estimates the revenue stream that a SARR would need to cover its operating costs and to provide a reasonable return on capital. It then compares these revenue requirements to the revenue the defendant railroad earns to determine if the revenues produced by the traffic in the group (based on existing and projected rate levels) would be greater or less than the amount required by the SARR. See generally Bituminous Coal—Hiawatha, Utah, to Moapa, Nev. (Bituminous Coal), 10 I.C.C. 2d 259, 274-77 (1994). This procedure is discussed in more detail below.

The estimated revenue requirements of the SARR would need to cover expected operating expenses and provide a reasonable return on the capital investment the SARR would make if it were to enter the marketplace to serve the selected traffic group. Because entry would not be instantaneous, the revenue requirements would need to cover the interest on debt during the SARR's construction period. Finally, the revenue requirements would need to cover the program maintenance needed to maintain the rail network once constructed.

The need to deal with taxes complicates the estimation of the SARR's revenue requirements because taxes are a function of the flow of revenue over the analysis period, and not just the present value of the revenue. This means that we must determine the flow of capital equal to the present value of the initial road-property investment, plus interest during construction, together with the present value of scheduled, program maintenance of the railroad. It is the necessity of dealing with taxes that precludes the use of a simpler model that would directly compute the SAC constraint without reference to the pattern of capital recovery over time.

The DCF model uses an iterative approach to determine the pattern of capital recovery that would attract entry in a contestable marketplace. The first step is to assume an amount of capital recovery in the first year. This annual capital recovery is then indexed for inflation over the SAC analysis period (in this case, 10 years). Indexes for the various components of the road-property investment (such as land, grading, rail) are used in the analysis.

The second step is to determine the value of the SARR at the end of the SAC analysis period. Because the assets the SARR would construct would have a longer useful life than the 10-year DCF period, the SARR would not need to recover the full investment in rail assets in the first 10 years. We must therefore estimate the economic value of the assets as of the end of the 10-year analysis period. This "terminal value" of the SARR equals the capital recovery in the tenth year divided by the estimated real cost of capital. This calculation yields the value (at year 10) of a perpetual income stream held constant (in real terms) at the capital return projected for the tenth year. (Thus, in effect, the DCF model is an in-perpetuity analysis, although it is referred to here as a 10-year DCF analysis.)

The third step is to determine the taxes the SARR would pay. The starting point is the capital recovery in a particular year, which conceptually is the net revenue (total revenues less operating expenses) for tax purposes. The parties submit a complex tax analysis that estimates the taxes, which are a function of interest on debt, depreciation of assets, and applicable state and federal taxes. Because the SARR could take advantage of various tax loss provisions, the SARR would often pay no taxes for the first few years of operation.

The DCF model then calculates the present value of the projected capital recovery over the 10-year analysis period, together with the present value of the terminal value, minus the present value of taxes. If this total is less than the initial capital investment, plus interest, adjusted for depreciation and program maintenance, then the projected capital recovery would be too low to provide a reasonable return on investment and would not entice a SARR to enter the market. In that case, the initial capital recovery in the first year is adjusted upwards (or downwards if the flow of capital recovery is too low), and the steps described above are repeated.

This iterative process continues until the model finds the point at which the flow of capital recovery would, after taxes, provide a reasonable return on the initial capital investment. Once the necessary amount of capital recovery has been determined using this iterative process, the total revenue requirements of the SARR can be determined by combining the capital recovery with the projected operating expenses.

There are several inputs needed to perform this analysis, and the parties largely agree as to most of them. The areas of disagreement are described below.

#### **A. Cost of Capital**

Capital expenses are estimated by calculating the cost of capital, which includes both the cost of debt and the cost of equity. Although the cost of debt is readily available and observable, the cost of equity (the expected return that equity investors require) can only be estimated using financial models.

The parties differ on how to account for the 2006 cost of equity for the DRR. Because construction of the DRR is assumed to have commenced in December of 2006, NS argues that the DRR's cost of equity should only reflect one month of the 2006 cost of equity.<sup>1467</sup> That is, according to NS, the 2006 cost of equity should only be given a one-twelfth weight when averaged with other available years of data during the analysis period to determine the cost of equity for the remaining analysis period.<sup>1468</sup> In its rebuttal, DuPont argues that the Board favors

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<sup>1467</sup> NS Reply III-G-1 to III-G-3.

<sup>1468</sup> NS Reply III-G-1 to III-G-3.

more data over less, and that AEP Texas North Co. v. BNSF Railway (AEP), NOR 41191 (Sub-No. 1), slip op. at 107-08 (STB served Sept. 10, 2007),<sup>1469</sup> supports its argument that as many years as possible should be examined when determining the cost of equity.<sup>1470</sup> However, in that case the Board was addressing whether a subset of the available years since construction of the SARR was acceptable when more data was available. That decision stated that the Board's standard practice is to utilize all years dating back to the SARR's construction start date. AEP, slip op. at 107. While AEP does speak in terms of years, its underlying point is that the cost of equity should reflect the construction start date, and all available subsequent data. NS's data takes into account the DRR's construction start date, and therefore, we will accept NS's evidence on the weighting of the 2006 cost of equity.

The parties also differ on whether to include a separate cost for "floating" (marketing) the shares that the DRR would sell to raise capital. NS adds a separate equity-flotation cost, arguing that there are no equity flotation costs included in the Board's 2006 through 2011 railroad industry cost of capital determinations because railroads have not recently incurred costs to raise new equity (although they have incurred debt flotation costs).<sup>1471</sup> NS asserts that Facebook's May 2012 initial public offering (IPO) provides evidence of equity-flotation fees associated with a recent stock issuance comparable to the approximately \$17.2 billion in equity that NS states the DRR would need to raise.<sup>1472</sup> Relying on the Facebook IPO, according to NS, is conservative, because demand for Facebook shares was very large, and the DRR, facing lower demand for its shares, would likely incur higher equity flotation costs.<sup>1473</sup> NS states that the equity flotation costs paid by Facebook were 2.1% of the capital raised, and therefore, NS includes equity flotation costs for the DRR of 2.1%.<sup>1474</sup>

DuPont objects to NS's inclusion of equity flotation costs, arguing that including such costs is contrary to precedent; equity flotation costs are already included in the railroad industry cost of capital; including equity flotation costs would create an entry barrier inconsistent with the theory of contestable markets; and the Facebook IPO is not a valid comparison for the DRR.<sup>1475</sup>

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<sup>1469</sup> Reconsideration denied (STB served May 15, 2009), vacated on other grounds and remanded sub nom. AEP Tex. N. Co. v. STB, 609 F.3d 432 (D.C. Cir. 2010).

<sup>1470</sup> DuPont Rebuttal III-G-3.

<sup>1471</sup> NS Reply III-G-3 to III-G-6.

<sup>1472</sup> See NS Reply III-G-5.

<sup>1473</sup> NS Reply III-G-4 n.6.

<sup>1474</sup> NS Reply III-G-6.

<sup>1475</sup> DuPont Rebuttal III-G-4 to III-G-6.

Prior to AEP, the Board did not accept the inclusion of a separate equity-flotation cost.<sup>1476</sup> In AEP—the only case to date in which the Board accepted equity-flotation costs—both parties had agreed that an equity-flotation fee should be included, but differed on the methodology for calculating that cost.<sup>1477</sup> The Board ultimately accepted the complainant's methodology and explicitly rejected the defendant's (BNSF's) claim of an equity-flotation cost of 4%. AEP, slip op. at 108.

In Arizona Electric Power Cooperative v. BNSF Railway (AEPCO), NOR 42113, slip op. at 137-38 (STB served Nov. 22, 2011),<sup>1478</sup> the Board rejected the defendant railroads' arguments that equity flotation costs should be included. The Board observed that, unlike AEP, the complainant did not agree on the inclusion of these costs. AEPCO, slip op. at 137-38. The Board also noted its prior holdings that flotation fees already are included in the Board's cost-of-capital computation, Duke/CSXT, 7 S.T.B. at 433, and that, to include such a fee separately, there would have to be evidence of the existence and size of equity-flotation fees for stock issuances of a similar size as that needed by the SARR. Xcel 2004, 7 S.T.B. at 659. The Board concluded that the defendant railroads had not provided evidence of a comparable issuance of stock and related equity flotation fee. AEPCO, slip op. at 138.

We disagree with DuPont's argument that equity flotation fees must be excluded from the SAC analysis based on the theory of contestable markets. The flotation cost is a fee that is specific to the hypothetical scenario of having to raise \$17.2 billion in equity capital. Whether that capital is raised through one massive IPO, or in smaller amounts over a longer time period, it would be unreasonable to assume that the SARR would raise this capital in either case without paying some form of equity flotation fee.

However, as in AEPCO, the defendant railroad has not provided sufficient evidence of the existence and size of the equity flotation fee for stock issuances of a similar size as that needed by the SARR. The Facebook IPO is not an appropriate comparison because that

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<sup>1476</sup> See, e.g., Duke Energy Corp. v. CSX Transp., Inc. (Duke/CSXT), 7 S.T.B. 402, 433 (2004); Pub. Serv. Co. of Col. d/b/a Xcel Energy v. Burlington N. & Santa Fe Ry. (Xcel 2004), 7 S.T.B. 589, 659 (2004); Tex. Mun. Power Agency v. Burlington N. & Santa Fe Ry., 6 S.T.B. 573, 751 (2003); Wis. Power & Light Co. v. Union Pac. R.R., 5 S.T.B. 955, 1040 (2001), aff'd sub nom. Union Pac. R.R. v. STB, 62 F. App'x 354 (D.C. Cir. 2003); Otter Tail Power Co. v. BNSF Railway, NOR 42071, slip op. at E-2 (STB served Jan. 27, 2006), aff'd sub nom. Otter Tail Power Co. v. STB, 484 F.3d 959 (8th Cir. 2007).

<sup>1477</sup> See AEP Tex. N. Co. v. BNSF Ry., NOR 41191 (Sub-No. 1), slip op. at 23 (STB served May 15, 2009).

<sup>1478</sup> Appeal docketed sub nom. Ariz. Elec. Power Coop. v. STB, No. 12-1246 (D.C. Cir. June 8, 2012).

company is not as capital intensive as the DRR, which an underwriter must consider prior to purchasing the stock. Also, Facebook is not an appropriate comparison because of the different risk associated with a different industry; economic analysis has shown that firms with different credit ratings have significantly different costs when issuing debt. See Inmoo Lee et al., The Costs of Raising Capital, 19 J. Fin. Res. 59 (1996).<sup>1479</sup> Therefore, NS has not established that a 2.1% fee is warranted, and we will not allow a separate equity flotation cost here.

### **B. Inflation of Land Values**

The parties account for changes in both the values of capital assets and the prices of operating expenses because these values and prices would change during the 10 years covered by the DCF analysis. To do so, the parties employ forecasts of rates of inflation.

The land necessary to construct and operate a SARR is one component of the capital assets. To calculate the rate of inflation in land values, DuPont uses a combination of indices reflecting rural and urban land prices, weighted in proportion to the values of rural and urban land in the DRR's rail system.<sup>1480</sup> Relying on historic rural land values reported by the U.S. Department of Agriculture (USDA), DuPont developed a historic average annual and quarterly percentage change in rural land values between 1930 and 2011 for the states traversed by the DRR, and used these historic averages to forecast future changes in rural land values.<sup>1481</sup> For urban land values, DuPont used a commercial land index prepared by the National Council of Real Estate Investment Fiduciaries (NCREIF).<sup>1482</sup> For the years 2006 through 2011, DuPont used the actual historic change in the NCREIF Property Index (NPI).<sup>1483</sup> For the years 2012 to 2019, DuPont calculated the long-term historic change in the NPI from 1978 (the first year reported) to 2011, and used this average as a proxy for future urban land value growth.<sup>1484</sup>

On reply, NS argues that U.S. farm exports and global crop prices have had a greater effect on rural land values in recent years, making DuPont's historic average unreliable for projecting changes in these values.<sup>1485</sup> Instead, NS predicts that, at best, rural land values will remain stable and appreciate at the average annual general rate of inflation, which is forecasted at

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<sup>1479</sup> NS Reply WP "III-G Cost of Raising Capital.pdf."

<sup>1480</sup> DuPont Opening III-G-5.

<sup>1481</sup> DuPont Opening III-G-5.

<sup>1482</sup> DuPont Opening III-G-5 to III-G-6.

<sup>1483</sup> DuPont Opening III-G-6.

<sup>1484</sup> DuPont Opening III-G-6.

<sup>1485</sup> NS Reply III-G-6; NS Reply WP "Inflation Indices.docx."

2.39% through 2019.<sup>1486</sup> NS also asserts that the NCREIF index DuPont used for urban land values is distinguishable from the DRR's urban real estate because it covers "high-quality real estate in top-tier markets," making it an inaccurate measure of inflation for unimproved DRR land.<sup>1487</sup> NS predicts that urban land values will grow more slowly in areas such as the DRR's, and therefore, NS proposes using the same general rate of inflation of 2.39%.<sup>1488</sup> NS also contends that DuPont's land inflation rate is inconsistent with the index that DuPont's real estate appraisers used.<sup>1489</sup>

On rebuttal, DuPont argues that its approach follows the procedures adopted by the Board in prior rate cases, adding that NS's claims with respect to the estimation of land values over time are incorrect and contradicted by more recent evidence.<sup>1490</sup>

We will accept DuPont's index for rural land values. Although NS makes plausible arguments as to why rural land values are likely to increase more slowly than DuPont predicts, NS does not offer specific support for the 2.39% inflation rate it offers. Instead, NS relies on a tenuous argument that in general land value will track the average annual general rate of inflation. DuPont, however, provides direct support for its position, using its calculation of historic USDA data.<sup>1491</sup>

For urban land values, we will also accept DuPont's index. NS relied on only 10 years' worth of index data, and nearly half of the time covered by NS's analysis was during the world financial crisis, which produced anomalous conditions in real estate markets.<sup>1492</sup> By contrast, DuPont relies on 34 years of NCREIF data, thus taking into account longer term historic values and helping to smooth out anomalies. See AEPCO, slip op. at 139.

NS relies on Moody's Commercial Property Price Index (MCPPI) and the CoStar Repeat Sale Indices (CCRSI). DuPont argues that these indices are less reliable than the NCREIF index because they are transaction-based, meaning they are based solely on the prices for which properties are sold, whereas the NCREIF index is appraisal-based, meaning that it is constructed

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<sup>1486</sup> NS Reply III-G-6; NS Reply WP "Inflation Indices.docx."

<sup>1487</sup> NS Brief 161; NS Reply WP "Inflation Indices.docx."

<sup>1488</sup> NS Reply WP "Inflation Indices.docx."

<sup>1489</sup> NS Brief 161-62.

<sup>1490</sup> DuPont Rebuttal III-G-9; DuPont Rebuttal Exhibit III-G-1.

<sup>1491</sup> See DuPont Opening III-G-5 & n.13 (citing AEPCO, slip op. at 139; R.R. Cost of Capital—2006, EP 558 (Sub.-No. 10) (STB served Jan. 17, 2008)).

<sup>1492</sup> See DuPont Rebuttal Exhibit III-G-1, at p. 8.



from the valuation of interval property appraisals.<sup>1493</sup> According to DuPont, transaction-based indices rely on sampling, as opposed to the census approach of an appraisal-based index. For this reason, DuPont asserts, the creator of the MCPPI states that it is not appropriate to use transaction-based indices for benchmarking, unlike appraisal-based indices, and transaction-based indices should be used only as a complement, not a substitute for the NCREIF index.<sup>1494</sup> However, the report cited by DuPont also points out shortcomings of appraisal-based indices—for example, a “smoothing and lagging bias”—and notes that using an appraisal-based index with a complementary transaction-based index can mitigate these drawbacks.<sup>1495</sup> In this case, neither party has presented an analysis using both a transaction-based and an appraisal-based index, but we encourage future rate litigants to do so.

NS argues that the NCREIF index used by DuPont focuses on office, apartment, and retail properties, which, NS states, are not typically located in close proximity to railroad freight trackage, interchanges, or destinations.<sup>1496</sup> Even if DuPont’s analysis did have this drawback, however, it would not overcome our concern with NS’s reliance on a smaller data set that includes anomalous, recession-influenced years. DuPont’s use of a greater number of years is a better approach to smooth out data anomalies.

Therefore, we find that the indexing analysis relied on by DuPont better reflects the DRR’s urban real estate than the analysis relied on by NS. Based on its analysis, DuPont projects an annual average growth rate of 7.68%.<sup>1497</sup>

### C. Bonus Depreciation

The parties disagree on the applicability of “bonus” depreciation provisions enacted as a part of federal economic stimulus efforts. On opening, DuPont argues that these provisions were applicable during the DRR’s construction, and NS took advantage of the bonus depreciation

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<sup>1493</sup> DuPont Rebuttal Exhibit III-G-1, at p. 7-8.

<sup>1494</sup> DuPont Rebuttal Exhibit III-G-1, at p. 8.

<sup>1495</sup> See David Geltner, A Simplified Transactions Based Index (TBI) for NCREIF Production, May 2, 2011, at 3-4, available at [http://mitcre.mit.edu/wp-content/uploads/2012/11/TBI\\_WhitePaper\\_DG\\_FINAL\\_May2011.pdf](http://mitcre.mit.edu/wp-content/uploads/2012/11/TBI_WhitePaper_DG_FINAL_May2011.pdf).

<sup>1496</sup> NS Reply WP “Inflation Indices.docx.” NS states that its real estate expert toured DRR urban real estate for 25 days and recorded extensive field observations, concluding that DRR urban real estate is primarily located in underdeveloped industrial areas that suffer from a lack of investment and high vacancy rates. NS Reply WP “Inflation Indices.docx.”

<sup>1497</sup> DuPont Rebuttal WP “DRR Land Appreciation Rebuttal.xlsx.”

from 2008 through 2011.<sup>1498</sup> According to DuPont, not permitting the DRR to use this bonus depreciation would constitute a prohibited barrier to entry, as it would force the DRR to pay a cost that the incumbent railroad did not incur.<sup>1499</sup>

NS argues on reply that the DRR would be able to take full advantage of the bonus depreciation only because of the stand-alone assumption of unconstrained resources, which allows for all of the DRR construction to occur during the limited bonus depreciation tax window.<sup>1500</sup> For this reason, NS asserts, allowing the DRR to use the bonus depreciation fully would result in a reverse barrier to entry that would bestow cost savings to a new hypothetical entrant that were not available to the incumbent.<sup>1501</sup> NS proposes to allow the DRR to use the bonus depreciation only to the extent NS itself was able to use these provisions. NS also argues that DuPont incorrectly extended the benefits of bonus depreciation to the replacement cost of assets as they reach the end of their useful lives, and NS removes this application of bonus depreciation in the DCF model.<sup>1502</sup>

On rebuttal, DuPont argues that NS's claim of a reverse barrier to entry is inconsistent with the theory of contestable markets, and that NS miscalculated its proposed adjustment.<sup>1503</sup> DuPont accepts NS's removal of bonus depreciation from the calculation of asset replacement costs.<sup>1504</sup>

NS's approach would require the DRR to bear any disadvantages of its construction timing while denying it the tax advantages available during that timing. The fact that the DRR's construction is assumed to occur during a limited time frame, which may result in efficiencies unavailable to the incumbent, does not make it a reverse barrier to entry as NS argues. See Coal Trading Corp. v. Balt. & Ohio R.R. (Coal Trading), 6 I.C.C. 2d 361, 412-14 (1990) (rejecting defendants' arguments that the SARR construction period should be much longer or the SARR should incur premium costs for an expedited construction schedule); McCarty Farms 1997, 2 S.T.B. at 484 n.52 (same). Therefore, we will accept DuPont's application of these bonus depreciation provisions. Based on the consent of the parties, however, DuPont's application of bonus depreciation in the calculation of asset replacement costs will be removed.

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<sup>1498</sup> DuPont Opening III-H-5 to III-H-7.

<sup>1499</sup> DuPont Opening III-H-6.

<sup>1500</sup> NS Reply III-H-5 to III-H-6.

<sup>1501</sup> NS Reply III-H-6.

<sup>1502</sup> NS Reply III-H-6 to III-H-7.

<sup>1503</sup> DuPont Rebuttal III-H-6 to III-H-9.

<sup>1504</sup> DuPont Rebuttal III-H-8.

#### **D. Tax Depreciation Lives**

NS argues that DuPont's tax depreciation schedules use the wrong tax depreciation lives for certain of the DRR's road property assets.<sup>1505</sup> According to NS, DuPont assumed certain accounts qualify for 15-year lives when under IRS rules they actually qualify as 20-year properties.<sup>1506</sup> NS lists the following asset categories as carrying 20-year tax lives:

- Bridges and Trestles (Account 6)
- Fences & Roadway Signs (Account 13)
- Roadway Buildings (Account 17)
- Fuel Stations (Account 19)
- Shops and Engine Houses (Account 20)
- Public Improvements (Account 39)<sup>1507</sup>

On rebuttal, DuPont argues that the 15-year asset lives it used for these accounts have been used by shippers and railroads, and endorsed by the Board, since Arizona Public Service Co. v. Atchison, Topeka & Santa Fe Railway, 2 S.T.B. 367 (1997).<sup>1508</sup>

We will accept NS's adjustment of the depreciation period for these asset categories and resulting adjustment of the depreciation percentages. Even if, as DuPont argues, the Board and parties have consistently used 15-year asset lives for these accounts, we can and will change our practices if new and better evidence comes to light. Here, NS has demonstrated that IRS rules call for 20-year lives for these accounts, which is persuasive evidence as to their proper treatment. See Internal Revenue Code § 168(e)(1); Revenue Procedure 87-56, Asset Class 40.2.<sup>1509</sup>

#### **E. Interest Schedule of Assets Purchased With Debt Capital**

DuPont makes a change to the interest schedule used in prior cases for the DRR's debt. DuPont asserts that railroad companies, including NS, do not customarily make periodic payments that contain constantly changing principal and interest components, but rather make

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<sup>1505</sup> NS Reply III-H-7.

<sup>1506</sup> NS Reply III-H-7.

<sup>1507</sup> NS Reply III-H-7.

<sup>1508</sup> DuPont Rebuttal III-H-9.

<sup>1509</sup> NS Reply WP "Rev. Proc. 87-56 – 5.rtf."

coupon payments on their debt consisting of fixed interest payments.<sup>1510</sup> DuPont argues that, if Board precedent assumes that the DRR's cost of debt should mirror the railroad industry cost of debt, the DRR debt should also mirror the composition of that debt and how the interest is paid to the debt holders.<sup>1511</sup> Thus, instead of amortizing the debt in a mortgage-style approach over a 20-year schedule, DuPont developed quarterly interest-only coupon payments associated with the DRR's debt.<sup>1512</sup>

On reply, NS claims that DuPont's approach assumes the DRR could be financed with a single debt instrument that has a 20-year term.<sup>1513</sup> NS argues that such a debt instrument would not be consistent with the railroad industry's cost of debt, which DuPont uses for its SARR, because the calculation of the railroad industry cost of debt includes a variety of debt instruments with a variety of yields and intervals to maturity.<sup>1514</sup> Thus, NS instead uses the current debt amortization schedule traditionally found in the DCF, which the ICC introduced in Coal Trading.<sup>1515</sup>

On rebuttal, DuPont argues that its approach does not assume a single 20-year debt instrument, only that the SARR's debt would be financed over 20 years, and that financing can include multiple debt instruments of varying duration.<sup>1516</sup> DuPont states that it expects the railroads' interest payments to be consistent from year to year and not decline over time, because their level of debt has remained fairly constant since the last round of mergers in the mid-1990s, meaning that the railroads are issuing new debt as debt instruments mature, or as they redeem older debt issuances and replace them with newer issuances.<sup>1517</sup> DuPont further argues that the mix of debt instruments in the railroad industry cost of debt is more consistent with DuPont's determination of fixed quarterly interest payments than it is with home mortgage-style amortization.<sup>1518</sup> If interest payments fall over time under home mortgage-style amortization, according to DuPont, it would have to reflect the SARR paying off shorter term notes and continuing payment on longer term notes, but in fact, interest payments would be higher in later

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<sup>1510</sup> DuPont Opening III-H-2 to III-H-3.

<sup>1511</sup> DuPont Opening III-H-3.

<sup>1512</sup> DuPont Opening III-H-3; DuPont Opening Exhibit III-H-1, Table E.

<sup>1513</sup> NS Reply III-H-2.

<sup>1514</sup> NS Reply III-H-2 to III-H-3.

<sup>1515</sup> NS Reply III-H-4 to III-H-5.

<sup>1516</sup> DuPont Rebuttal III-H-3.

<sup>1517</sup> DuPont Rebuttal III-H-3.

<sup>1518</sup> DuPont Rebuttal III-H-3.

years because longer term bonds have higher interest rates than shorter term bonds.<sup>1519</sup> Thus, DuPont argues, the fact that the interest rate does not change over time in the Board's DCF model is consistent with DuPont's schedule of interest payments rather than NS's amortization schedule.<sup>1520</sup>

On brief, NS argues that DuPont's claim that the DRR would continually roll over its debt while only paying interest is inconsistent with its assumption that the DRR's cost of debt would be locked in at the average cost of debt over its construction period.<sup>1521</sup>

Under Board precedent, as DuPont acknowledges,<sup>1522</sup> the SARR's debt payments contain an interest component and a principal component, and the interest portion decreases as the debt is amortized over time. See, e.g., Bituminous Coal, 10 I.C.C. 2d at 319 (finding it more realistic to assume that the SARR would issue new debt as old debt is amortized, maintaining a constant capital structure over the DCF period). In this case, DuPont has not carried its burden to depart from this precedent. The SAC test asks whether the SARR can pay the cost of constructing, maintaining and operating its system. But if the SARR pays only interest, and no principal, throughout the SAC analysis period, it has not paid for its assets. This debt financing approach would abandon the fundamental structure of the SAC test, a result we cannot allow.

We recognize that this treatment differs from the practices of the railroad industry as alleged by DuPont.<sup>1523</sup> Treating the SARR identically to the railroad industry is not feasible, however, if it would erase the basic outlines of the SAC test. The nature of the SAC test leads to differences in treatment between the SARR and the railroad industry in other instances as well, and as discussed above, they can be favorable to the complainant—for example, expedited construction without paying a construction cost premium, with the collateral benefit, in this case, of being able to apply bonus depreciation to the entire construction period. See Coal Trading, 6 I.C.C. 2d at 412-14; McCarty Farms 1997, 2 S.T.B. at 484 n.52.

The SARR is evaluated through a regulatory lens—its ability to pay the cost of constructing, maintaining and operating its system—whereas the railroad industry is evaluated every day by the financial markets, which assess whether a railroad will be able to pay its debt. Freeing the SARR from this regulatory evaluation, by allowing it to pay only interest and no principal on its assets, would insulate its borrowing from any scrutiny at all, because the SARR

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<sup>1519</sup> DuPont Rebuttal III-H-3 to II-H-4.

<sup>1520</sup> DuPont Rebuttal III-H-4.

<sup>1521</sup> NS Final Brief 165.

<sup>1522</sup> DuPont Opening III-H-2 to III-H-4.

<sup>1523</sup> See DuPont Opening III-H-2 to III-H-4.

is not subject to the scrutiny of the financial markets. Thus, while we recognize the importance of allowing the SARR to use the same business strategies as the railroad industry to the maximum extent possible, we will not permit an interest-only approach to the repayment of debt, detached from the checks and balances that apply in the real world.

#### **F. Terminal Value Adjustment**

DuPont proposes an adjustment to the terminal value in the Board's DCF model.<sup>1524</sup> DuPont states that the Board's DCF model assumes that the SARR's capital structure remains constant in perpetuity, so there will always be debt, with associated interest payments, as well as equity.<sup>1525</sup> But for tax purposes, according to DuPont, the Board's DCF model assumes that the SARR is 100% equity financed during the period after year 20 and before the first assets are replaced in the replacement level of the model.<sup>1526</sup> Therefore, DuPont argues, during this period, the cost of capital assumes that the SARR makes interest payments, but the model does not allow the SARR to receive the tax shielding effect of those interest payments.<sup>1527</sup> DuPont proposes to correct this mismatch by assuming that interest payments continue in perpetuity for tax shield purposes as well.<sup>1528</sup> To do this, DuPont adjusts the terminal value in the capital carrying charges to reflect the cost of capital assumption that the SARR's level of debt is held constant into perpetuity, and that interest tax shields consistent with this level of debt are accounted for in the cash flow calculation.<sup>1529</sup>

NS disagrees, arguing that this assumption contradicts DuPont's position and Board precedent that the term of the SARR's debt is 20 years.<sup>1530</sup> NS also argues that DuPont's extension of the DRR's interest payments into perpetuity conflicts with the interest rates included in the DRR's cost of debt, because the cost of debt is based on a collection of short and long term debt instruments.<sup>1531</sup> NS asserts that, if the Board is inclined to eliminate the mismatch identified by DuPont, the correct method would be to revert back to Coal Trading and

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<sup>1524</sup> DuPont Opening III-H-7 to III-H-10.

<sup>1525</sup> DuPont Opening III-H-8.

<sup>1526</sup> DuPont Opening III-H-8 to III-H-9.

<sup>1527</sup> DuPont Opening III-H-9.

<sup>1528</sup> DuPont Opening III-H-9.

<sup>1529</sup> DuPont Opening III-H-9.

<sup>1530</sup> NS Reply III-H-9.

<sup>1531</sup> NS Reply III-H-9 to III-H-10.

recalculate the DRR capital structure as the debt is amortized.<sup>1532</sup> NS includes a version of the DCF model implementing this change.<sup>1533</sup>

On rebuttal, DuPont argues that, contrary to NS's position, the ICC and the Board did not even recognize this mismatch, let alone approve it, in Coal Trading, McCarty Farms 1997, or Major Issues.<sup>1534</sup> DuPont argues that NS's proposed fix matches the capital structure adopted in Coal Trading, but the ICC soon discarded this approach in Bituminous Coal, 10 I.C.C. 2d at 319.<sup>1535</sup> DuPont also argues that the Coal Trading approach is unrealistic because it contends that the cost of equity would decline as the proportion of equity increases over time, but NS fails to adjust the cost of capital downward.<sup>1536</sup>

We will accept DuPont's argument regarding the terminal value adjustment to correct the mismatch it has identified, but we will correct DuPont's interest rates to reflect the Board's holding that DuPont must pay down the principal on its capital investments. See *supra* Section E (Interest Schedule of Assets Purchased With Debt Capital). DuPont is correct that the ICC's decision in Coal Trading did not encounter the mismatch described here, because the capital structure adopted by the ICC shifted to greater proportions of equity over time as the SARR paid off the principal on its debt. Coal Trading, 6 I.C.C. 2d at 379-80. The Board's decisions in McCarty Farms 1997 and Major Issues did not approve or even refer to the mismatch identified by DuPont. McCarty Farms 1997, 2 S.T.B. at 522-23 & n.123; Major Issues, slip op. at 65. Accordingly, DuPont's adjustment is not contrary to Board precedent.

To the extent there is a contradiction between DuPont's adjustment and the assumption that the term of the SARR's debt is 20 years, as NS claims, it is a contradiction that already exists in the Board's DCF model. That is, as DuPont points out, the DCF model assumes that the SARR's capital structure includes a debt component (including the cost of the associated interest payments) in perpetuity, not for 20 years. However, as structured the model does not allow the SARR to receive the tax shielding effect of those interest payments. Thus, DuPont's adjustment fixes one aspect of an apparent contradiction, rather than creating a new one. As for NS's argument that there would be a conflict with the interest rates included in the DRR's cost of debt,

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<sup>1532</sup> NS Reply III-H-10.

<sup>1533</sup> NS Reply III-H-10, citing NS Reply WP "Alternative DCF.xlsx."

<sup>1534</sup> DuPont Rebuttal III-H-11 to III-H-12 (citing Coal Trading, 6 I.C.C. 2d at 379-80; McCarty Farms 1997, 2 S.T.B. at 522 n.123; Major Issues in Rail Rate Cases (Major Issues), EP 657 (Sub-No. 1), slip op. at 65 (STB served Oct. 30, 2006), *aff'd sub nom. BNSF Ry. v. STB*, 526 F.3d 770 (D.C. Cir. 2008)).

<sup>1535</sup> DuPont Rebuttal III-H-12.

<sup>1536</sup> DuPont Rebuttal III-H-12 to III-H-13.

it is a feature of the DCF model to assume current numbers into perpetuity. If interest rates significantly change, the lawful rate may change as a result, and any party is free to petition the Board, under 49 C.F.R. § 1115.4, to reopen a proceeding on the grounds of substantially changed circumstances. Finally, NS's proposed alternative solution, reverting to the Coal Trading approach of recalculating the SARR's capital structure over time, would be unnecessarily disruptive to the Board's DCF methodology, unlike the simple adjustment proposed by DuPont.

As discussed in the previous section, DuPont's DCF utilizes coupon, interest-only payments and does not include a home mortgage style payment as the Board requires. Because of the inconsistency between the interest payments in these two scenarios, the Board must adjust the interest value to determine the proper tax benefit. To do so, a straight-line average of the interest payments over the amortization period, here 20 years, is used as the value for determining the tax benefit received in the terminal value calculation.

### **G. Present Value of Replacement Cost**

NS changes the discount factor used to compute the present value of the asset replacement costs to the average DRR cost of capital instead of the average railroad industry cost of capital used by DuPont.<sup>1537</sup> NS argues that this change aligns the replacement cost discounting assumptions with those used for the initial DRR investment.<sup>1538</sup> On rebuttal, DuPont argues that Board precedent calls for use of the historic average railroad industry cost of capital.<sup>1539</sup> DuPont adds that, although NS claims to have made this change, NS's DCF model shows that it used the same procedure as DuPont.<sup>1540</sup>

In support of its proposal, NS offers only its statement that using the average DRR cost of capital aligns the replacement cost discounting assumptions with those used for the initial DRR investment, with no further explanation and no supporting evidence. We find that NS has not provided sufficient reason to depart from Board precedent on this subject, and therefore, we accept DuPont's position. See AEP, slip op. at 108-09.

### **H. Timing of PTC Investment**

As discussed in the Signals and Communications section of the RPI appendix, DuPont argues that the DRR should install its PTC system at the outset of construction and investment, and NS disagrees, arguing that the DRR's PTC-related costs will not be incurred until after

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<sup>1537</sup> NS Reply III-H-5.

<sup>1538</sup> NS Reply III-H-5.

<sup>1539</sup> DuPont Rebuttal III-H-4 (citing AEP, slip op. at 108-09).

<sup>1540</sup> DuPont Rebuttal III-H-4 to III-H-5.



commencement of operations. NS makes a corresponding adjustment to the DCF model to recover PTC investment only after the actual PTC expenditures take place.<sup>1541</sup> DuPont argues on rebuttal that NS's adjustment is incorrect, due to the timing of the PTC investment and also because NS did not account for bonus depreciation available on PTC assets.<sup>1542</sup>

For the reasons set forth above in the Appendix B, we are accepting DuPont's position that the DRR would install a PTC system from the outset and then upgrade it to provide interoperability and otherwise meet the applicable standards. Therefore, we will reject NS's corresponding adjustment to the DCF model. However, as discussed in Appendix B, we will require the DRR to spread the costs of upgrading this PTC system for compliance with the Rail Safety Improvement Act through the 2010 to 2015 period, rather than incurring all such costs together with the initial costs of installing the system in 2009 or before. As discussed above, we are accepting DuPont's application of certain bonus depreciation provisions, and the bonus depreciation will apply to the DRR's PTC system to the extent the costs are incurred during the appropriate time period and the bonus depreciation is otherwise applicable.

### **I. Annual Adjustment of Operating Expenses**

To adjust annual operating expenses that change with the level of traffic volumes, DuPont uses the annual change in ton-miles, stating that this will take into consideration the shifting nature of the DRR's traffic.<sup>1543</sup> NS argues that using ton-miles inaccurately forecasts changes in volumes of different commodities, and NS instead uses DRR car-miles.<sup>1544</sup> On rebuttal, DuPont argues that using car-miles is an insufficient metric because it only includes one factor, mileage, while ignoring the relationship between shipment weight and operating expenses.<sup>1545</sup>

The Board has previously used tons to adjust operating expenses. *See, e.g., Xcel 2004*, 7 S.T.B. at 618. Here, both parties advocate departing from this prior practice, but NS's proposal to use car-miles is superior to DuPont's proposal to use ton-miles. The DRR is primarily a carload traffic railroad, and what drives the system's operating expenses is the number of cars, not the tonnage or ton-miles (as would be the case with coal). Therefore, adjusting operating expenses on a car-mile basis will be more accurate in this case.

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<sup>1541</sup> NS Reply III-H-10.

<sup>1542</sup> DuPont Rebuttal III-H-13 to III-H-15.

<sup>1543</sup> DuPont Opening III-H-12.

<sup>1544</sup> NS Reply III-H-11.

<sup>1545</sup> DuPont Rebuttal III-H-16 (citing *Xcel 2004*, 7 S.T.B. at 618).

## J. Index for MMM URCS Costs

DuPont uses the Board's standard URCS indexing approach to adjust variable costs in the MMM analysis, arguing that it produces the most accurate results.<sup>1546</sup> NS disagrees and instead uses RCAF-A.<sup>1547</sup> According to NS, the Board's decision in AEP requires the use of RCAF-A, and the Board has done so in other cases such as AEPCO.<sup>1548</sup> NS argues that Oklahoma Gas & Electric v. Union Pacific Railroad, NOR 42111 (STB served July 24, 2009), cited by DuPont, is inapposite because it involved short term indexing of URCS costs to inflate them only for specific quarters within one year, and not across years, whereas the MMM model here is projecting URCS costs nine years into the future.<sup>1549</sup> On rebuttal, DuPont again argues that the URCS index is superior to RCAF-A for adjusting MMM variable costs, because it takes into consideration the specific weighting of cost components unique to the defendant carrier, while the RCAF-A bases its cost weighting on inputs from all Class I railroads.<sup>1550</sup>

NS is correct that the Board has adopted the use of RCAF-A to adjust the MMM URCS costs in prior decisions. See, e.g., AEP Tex. N. Co. v. BNSF Ry., NOR 41191 (Sub-No. 1), slip op. at 14-15 (STB served May 15, 2009). However, DuPont has made a strong case for departing from that precedent here. As DuPont explains, URCS indexing will take into account the weighting of cost components applicable to NS itself, as opposed to the inclusion of inputs from all Class I railroads in RCAF-A, and the goal of this indexing is an accurate forecast of the defendant railroad's variable costs. NS has not stated a reason why, in this instance, the Board should continue to rely on a generalized, industry index when a more specific approach is available. Therefore, we will accept DuPont's use of URCS indexing to adjust the MMM variable costs.<sup>1551</sup>

## K. DCF Results

The first step of the DCF analysis is to calculate the DRR's total revenue requirements over the 10-year analysis period. We find that the initial road property investment of the DRR in the second quarter of 2009 would be \$33,590.1M; interest during construction would be \$4,342.9M; the present value of roadway property replacement would be \$746.6M; and the

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<sup>1546</sup> DuPont Opening III-H-13.

<sup>1547</sup> NS Reply III-H-13.

<sup>1548</sup> NS Reply III-H-13.

<sup>1549</sup> NS Reply III-H-13.

<sup>1550</sup> DuPont Rebuttal III-H-25.

<sup>1551</sup> On reply, NS claimed that DuPont incorrectly indexed costs from 2009 to 2010 base year levels in its MMM model. On rebuttal, DuPont agreed and corrected the indexing in its Rebuttal MMM model. DuPont Rebuttal III-H-25.

resulting total road property investment would be \$38,807.9M. Table D-1 shows the flow of capital recovery that would provide the DRR a reasonable return on its capital investment and would therefore be sufficient to attract entry to serve the selected traffic group.

TABLE D-1

| DRR Capital Recovery<br>(\$ millions) |                                      |             |                       |               |
|---------------------------------------|--------------------------------------|-------------|-----------------------|---------------|
| Year                                  | Capital Requirement<br>Road Property | Total Taxes | Required Cash<br>Flow | Present Value |
| 2009                                  | \$2,014.2                            | \$0         | \$2,014.2             | \$1,921.1     |
| 2010                                  | 3,626.4                              | 0           | 3,626.4               | 3,167.7       |
| 2011                                  | 3,733.8                              | 0           | 3,733.8               | 2,915.0       |
| 2012                                  | 3,892.5                              | 0           | 3,892.5               | 2,725.3       |
| 2013                                  | 4,002.9                              | 0           | 4,002.9               | 2,514.1       |
| 2014                                  | 4,158.6                              | 0           | 4,158.6               | 2,343.0       |
| 2015                                  | 4,332.5                              | 823.6       | 3,508.9               | 1,780.3       |
| 2016                                  | 4,490.9                              | 1,403.7     | 3,087.2               | 1,400.0       |
| 2017                                  | 4,655.2                              | 1,560.4     | 3,094.8               | 1,259.0       |
| 2018                                  | 4,830.2                              | 1,639.3     | 3,190.9               | 1,164.5       |
| 2019                                  | 2,072.8                              | 709.6       | 1,363.1               | 462.2         |
| Terminal Value                        |                                      |             | ***                   | 17,155.7      |
| TOTAL                                 |                                      |             |                       | \$38,807.9    |

As shown in Table D-2, the total revenue requirements of the DRR over the 10-year analysis period are the sums of the capital return and the projected operating expenses.

TABLE D-2

| DRR Total Revenue Requirements<br>(\$ millions) |                      |                    |                          |
|-------------------------------------------------|----------------------|--------------------|--------------------------|
| Year                                            | RPI Capital Recovery | Operating Expenses | DRR Revenue Requirements |
| 2009                                            | \$2,014.2            | \$1,874.6          | \$3,888.7                |
| 2010                                            | 3,626.4              | 3,556.3            | 7,182.7                  |
| 2011                                            | 3,733.8              | 4,013.4            | 7,747.2                  |
| 2012                                            | 3,892.5              | 4,125.4            | 8,017.9                  |
| 2013                                            | 4,002.9              | 4,406.5            | 8,409.4                  |
| 2014                                            | 4,158.6              | 4,613.3            | 8,771.9                  |
| 2015                                            | 4,332.5              | 4,809.7            | 9,142.2                  |
| 2016                                            | 4,490.9              | 5,122.7            | 9,613.7                  |
| 2017                                            | 4,655.2              | 5,462.3            | 10,117.5                 |
| 2018                                            | 4,830.2              | 5,816.1            | 10,646.3                 |
| 2019                                            | 2,072.8              | 2,565.7            | 4,638.4                  |

The second part of the DCF analysis compares the revenues a defendant is expected to earn from the traffic group against the revenues the SARR would need to serve the same traffic. In general, if the present value of the revenue stream is less than the SARR's revenue requirements, then the analysis has not demonstrated that the challenged rate is unreasonable. If the opposite is true, then the Board must decide what relief to provide to the complainant by allocating the revenue requirements of the SARR among the traffic group and over time. Here, Table D-3 reveals that the defendant is earning less from the traffic group than the DRR would require to serve the same traffic, and thus the analysis has not demonstrated that the challenged rates are unreasonable.

TABLE D-3

| Discounted Cash Flow Analysis<br>(\$ millions) |                          |                      |            |               |                       |
|------------------------------------------------|--------------------------|----------------------|------------|---------------|-----------------------|
| Year                                           | DRR Revenue Requirements | NS Forecast Revenues | Difference | Present Value | Cumulative Difference |
| 2009                                           | \$3,888.7                | \$2,930.1            | \$(958.6)  | \$(935.1)     | \$(935.1)             |
| 2010                                           | 7,182.7                  | 5,768.4              | (1,414.3)  | (1,234.1)     | (2,169.2)             |
| 2011                                           | 7,747.2                  | 6,252.0              | (1,495.2)  | (1,159.3)     | (3,328.5)             |
| 2012                                           | 8,017.9                  | 6,739.2              | (1,278.7)  | (898.5)       | (4,227.0)             |
| 2013                                           | 8,409.4                  | 7,201.8              | (1,207.6)  | (761.2)       | (4,988.2)             |
| 2014                                           | 8,771.9                  | 7,721.4              | (1,050.5)  | (594.0)       | (5,582.3)             |
| 2015                                           | 9,142.2                  | 8,192.9              | (949.3)    | (481.6)       | (6,063.9)             |
| 2016                                           | 9,613.7                  | 8,897.1              | (716.6)    | (326.1)       | (6,390.0)             |
| 2017                                           | 10,117.5                 | 9,765.7              | (351.8)    | (143.6)       | (6,533.6)             |
| 2018                                           | 10,646.3                 | 10,657.8             | 11.5       | 4.2           | (6,529.4)             |
| 2019                                           | 4,638.4                  | 4,858.5              | 220.0      | 76.3          | (6,453.1)             |

**APPENDIX E—MARKET DOMINANCE****A. Preliminary Issues****1. Calculation of Variable Costs**

In a joint submission of operating characteristics filed on December 22, 2011, the parties explained that they had reached agreement on all but three of the URCS inputs used to calculate the variable costs associated with each of the issue movements. The three areas in which disagreement remained were loaded miles (for all of the issue movements), tons per car (for all of the issue movements), and car type (for three of the issue movements). With respect to car type, however, DuPont subsequently stated that it agrees with NS for the three outstanding movements; thus, this item is no longer at issue.<sup>1552</sup>

In its rebuttal evidence, DuPont accepts NS's loaded mileage calculations for all but 15 lanes.<sup>1553</sup> DuPont generally accepts the "weighted average" approach used by NS—one that reflects the relative frequency of different routings for a given lane—but asserts that NS has not been consistent in its application of this approach. Specifically, in an attempt to account for non-representative data anomalies, NS excludes from its mileage calculations any route that does not account for at least 10% of a lane's traffic.<sup>1554</sup> For some lanes, however, NS has excluded routes that account for more than 10% of the traffic on those lanes without explanation.<sup>1555</sup> DuPont for the most part does not disagree with these exclusions,<sup>1556</sup> but argues that "circuitous" routings on certain additional lanes should also be excluded.<sup>1557</sup> DuPont further argues that contrary to NS's calculations, NS's car event data does not support multiple mileage values for lanes A-22 and B-85.<sup>1558</sup> The Board concludes that, in this context, the "10% rule" proposed by NS is an

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<sup>1552</sup> DuPont Opening II-A-4.

<sup>1553</sup> DuPont Rebuttal II-A-1 to II-A-4.

<sup>1554</sup> NS Reply II-A-6 n.9.

<sup>1555</sup> See DuPont Rebuttal II-A-3 & n.5 (noting that NS excluded 13.5% of the traffic on lane B-2, 13% of the traffic on lane B-93, and 27% of the traffic on lane B-112).

<sup>1556</sup> DuPont accepts NS's proposed exclusions on two of the three lanes. See DuPont Rebuttal Exhibit II-A-13 (indicating that DuPont accepts NS's proposed mileages for lanes B-93 and B-112).

<sup>1557</sup> DuPont Rebuttal II-A-3. DuPont disagrees with NS as to which routings properly should be excluded from lane B-2's mileage calculation. See DuPont Rebuttal Exhibit II-A-17. In addition to lane B-2, DuPont identifies 12 other lanes for which it believes circuitous routings should be excluded from our mileage calculations.

<sup>1558</sup> DuPont Rebuttal II-A-3.

appropriate way to account for data anomalies, and we therefore exclude from our mileage calculations any route that does not account for at least 10% of the traffic on any given lane. We find no basis for excluding any routes that account for 10% or more of a lane's traffic, with one exception—Lane B-2.<sup>1559</sup> With regard to lanes A-22 and B-85, we agree with DuPont that NS's car event data does not support multiple mileage values. As a result, we will use the mileages that are supported by NS's car event data (60 miles for lane A-22 and 19 miles for lane B-85).

With regard to tonnages, NS agrees with DuPont's method for calculating tons per car for lanes for which there is 2009 and/or 2010 waybill data, but continues to dispute DuPont's tons per car calculations for the 26 lanes for which there is no waybill data available for either year. In contrast to the approach proposed by DuPont on opening—which uses as a proxy the average lading weight for each car type<sup>1560</sup>—NS calculates the average lading weight based not only on car type but also on the type of commodity being transported.<sup>1561</sup> DuPont does not disagree with this methodology, but notes that the calculations provided by NS in the narrative portion of its reply evidence do not match up with the calculations provided by NS in its workpapers.<sup>1562</sup> DuPont further states that it was unable to replicate the latter calculations.<sup>1563</sup> Given that lading weight can vary by commodity, we believe the better approach is to use a methodology that utilizes both car and commodity type to calculate tons per car for lanes for which there is no relevant 2009 and/or 2010 waybill data. Furthermore, because we have only been able to replicate the tons per car calculations provided by NS in the narrative portion of its reply evidence, we will use those values<sup>1564</sup> as opposed to the ones included with NS's workpapers.<sup>1565</sup>

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<sup>1559</sup> Car event data for Lane B-2 included the following routings: ■ carloads traveling 732 miles, ■ carloads traveling 747 miles, ■ carloads traveling 966 miles, and ■ carloads traveling three miles. We will exclude the ■ carloads traveling three miles. The extreme disparity between the mileage of that routing and the mileages of the other routings indicates some sort of data error.

<sup>1560</sup> DuPont Opening II-A-4.

<sup>1561</sup> NS Reply II-A-9 to II-A-10.

<sup>1562</sup> DuPont Rebuttal II-A-4.

<sup>1563</sup> DuPont Rebuttal II-A-4.

<sup>1564</sup> See NS Reply II-A-10 (Table II-A-1).

<sup>1565</sup> In the narrative portion of its reply evidence, NS provides values for only 25 of the 26 lanes for which there is no waybill data available for either year. See DuPont Rebuttal II-A-4 n.7 (noting that Table II-A-1 in NS's reply narrative does not include a value for B-44, another lane "for which surrogate data is needed"). As we do with the other lanes discussed above, we will use both car and commodity type to calculate tons per car for lane B-44 as well.

## 2. Calculation of Tariff Rates and Fuel Surcharges

The parties agree on all tariff rate and fuel surcharge figures.

### B. Market Dominance Rate Analyses

#### 1. Anhydrous Methylamines

NS has conceded market dominance over the two movements governed by the Belle-Chicago anhydrous methylamines (AHM) rate and the only movement governed by the Belle-Streator AHM rate.<sup>1566</sup>

With regard to an additional six AHM rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists<sup>1567</sup> because for none of the movements governed by these rates—lanes B-6, B-10, B-11, B-14, B-18, B-19, B-32, B-36, B-39, B-40, B-41, B-43, B-90, B-91, and B-121—were we presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1568</sup> As a result, we conclude that NS is market dominant with regard to the following six AHM rates: Belle-Atlanta, Belle-Cincinnati, Belle-East St. Louis, Belle-Logansport, Belle-Kansas City, and Belle-New Orleans.

Belle-Wyandotte. The single remaining AHM movement—lane A-9—is governed by the Belle-Wyandotte AHM rate, for which both parties have introduced evidence of direct truck alternatives.<sup>1569</sup> DuPont, however, argues that the customer on lane A-9 [REDACTED] [REDACTED].<sup>1570</sup> As evidence of this,

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<sup>1566</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes B-5, B-15, and B-24).

<sup>1567</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-103 to II-B-113.

<sup>1568</sup> As explained above, the only alternatives we consider in our qualitative market dominance inquiry are those involving transportation between the origin and destination to which the challenged tariff rate applies.

<sup>1569</sup> DuPont Opening II-B-103 to II-B-113; NS Reply II-B-142 to II-B-151. DuPont on opening discusses why transload and barge alternatives do not represent effective competition for this movement. NS does not dispute this point. See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”) & Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lane A-9).

<sup>1570</sup> DuPont Opening I-47 to I-48 & II-B-111.



DuPont points to the fact that there has [REDACTED]. NS fails to respond to this argument in its reply evidence. We agree with DuPont that the [REDACTED] together demonstrate that direct trucking is not a practically feasible alternative for this movement. As there are no practically feasible alternatives for the single lane governed by the Belle-Wyandotte AHM rate, we conclude that NS is market dominant with regard to that rate.

## **2. Aniline Oil**

With regard to the four aniline oil rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-49, B-84, B-85, and B-115—were we presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1571</sup> As a result, we conclude that NS is market dominant with regard to the following four aniline oil rates: Atlanta-Fort Mill, Meridian-Fort Mill, Mobile-Fort Mill, and Mobile-Lemoyne.

## **3. Aqueous Methylamines**

NS has conceded market dominance over two of the challenged aqueous methylamines (AQM) movements (the only two movements governed by the Belle-Chicago AQM rate).<sup>1572</sup>

With regard to the two other AQM rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-8, B-17, and B-33—were we presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1573</sup> As a result, we conclude that NS is market dominant with regard to the Belle-East St. Louis and Belle-Kansas City AQM rates.

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<sup>1571</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-39 to II-B-43.

<sup>1572</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes B-13 and B-25).

<sup>1573</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-114 to II-B-119.

#### 4. **Bio-propanediol**

NS has conceded market dominance over all three of the challenged bio-propanediol (PDO) movements, which are governed by two separate PDO rates (Loudon-Brathwaite and Loudon-Chattanooga).<sup>1574</sup>

#### 5. **Chlorine**

NS has conceded market dominance over all four of the challenged chlorine movements, which are governed by three separate chlorine rates (Buffalo-Edgemoor, Charleston-Edgemoor, and McIntosh-Mobile).<sup>1575</sup>

#### 6. **Difluoroethane**

NS has conceded market dominance over both of the challenged difluoroethane (DFE) movements, which are governed by two separate DFE rates (East St. Louis-Royce and New Orleans-Dragon).<sup>1576</sup>

#### 7. **Dimethyl Ether**

NS has conceded market dominance over two of the three movements governed by the Belle-Chicago dimethyl ether (DME) rate.<sup>1577</sup> With regard to the other movement governed by this rate—lane B-23—we find that no effective intermodal or intramodal competition exists because we were presented with no evidence of any alternatives covering only the challenged bottleneck segment.<sup>1578</sup> As a result, we conclude that NS is market dominant with regard to the Belle-Chicago DME rate.

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<sup>1574</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes A-17, B-99, and B-100).

<sup>1575</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes A-10, B-78, B-87, and B-113).

<sup>1576</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes B-71 and B-73).

<sup>1577</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes B-1 and B-30).

<sup>1578</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-75 to II-B-82.

With regard to an additional three DME rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-42, B-89, and B-120—were we presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1579</sup> As a result, we conclude that NS is market dominant with regard to the following three DME rates: Belle-Cincinnati, Belle-Meridian, and Belle-Pine.

Belle-Danville. The single remaining movement—lane A-3—is governed by the Belle-Danville DME rate, for which both parties have introduced evidence of direct truck alternatives.<sup>1580</sup> DuPont acknowledges that direct trucking is a practically feasible alternative for this movement, but argues that such an alternative is not economically feasible given that an increased number of truck deliveries of DME from Belle to Danville would require additional investments in (1) specialized truck equipment and (2) truck loading infrastructure at Belle.<sup>1581</sup> NS disputes that such additional investments are needed to accommodate increased truck shipments of DME from Belle, and further argues that even if some such additional investments are needed, DuPont has failed to demonstrate that such investments render a direct truck alternative cost-prohibitive.<sup>1582</sup> On rebuttal, DuPont generally disputes NS's assertions and further argues that NS has overlooked the fact that there has [REDACTED] DME from Belle to Danville during the relevant 2006-2010 time period.<sup>1583</sup> Were we to conclude that the rate governing this movement was otherwise being effectively constrained by a competitive alternative, we would need to consider DuPont's argument that the increased capital and operating costs associated with additional truck shipments of DME from Belle render the direct truck alternative cost-prohibitive, as well as NS's argument that additional truck shipments could be accommodated without incurring these costs. As we discuss below, however, we

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<sup>1579</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-75 to II-B-82.

<sup>1580</sup> DuPont Opening II-B-75 to II-B-82; NS Reply II-B-157 to II-B-161. DuPont on opening discusses why transload and barge alternatives do not represent effective competition for this movement. NS does not dispute this point. See NS Reply II-B-1 (indicating that "NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements") & Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lane A-3).

<sup>1581</sup> DuPont Opening II-B-77 to II-B-80.

<sup>1582</sup> NS Reply II-B-158 to II-B-159.

<sup>1583</sup> DuPont Rebuttal II-B-72 to II-B-78. However, unlike lane A-9, see *supra* p. 292-93, DuPont does not point to the [REDACTED] truck volumes to support an argument regarding the practical infeasibility of truck delivery. Indeed, DuPont acknowledges that direct trucking is a practically feasible alternative for lane A-3.

conclude that the Belle-Danville DME rate is not being effectively constrained even without including any potential additional capital and operating costs that might be required. Thus, we need not address these arguments.

DuPont's direct truck alternative for this lane has a price of [REDACTED] while NS's direct truck alternative has a price of [REDACTED].<sup>1584</sup> The price of NS's direct truck alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Belle-Danville DME rate effectively and, even though this alternative likely has at least some of the same intangible benefits associated with any direct truck option,<sup>1585</sup> we conclude that such benefits are insufficient to call into question our preliminary conclusion in light of the [REDACTED] disparity between the lowest limit price R/VC ratio and the carrier's RSAM figure. As a result, we conclude that NS is market dominant with regard to the Belle-Denville DME rate.

## 8. Dimethyl Formamide

NS has conceded market dominance over the only movement governed by the Belle-Chicago dimethyl formamide (DMF) rate and the only movement governed by the Belle-Streator DMF rate.<sup>1586</sup>

NS has conceded market dominance over two of the three movements governed by the only other DMF rate challenged by DuPont.<sup>1587</sup> With regard to the other movement governed by this rate—lane B-35—we find that no effective intermodal or intramodal competition exists because we were presented with no evidence of any alternatives covering only the challenged

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<sup>1584</sup> DuPont Opening WP "Direct Truck Costs;" NS Reply Errata WP "Direct Truck Analysis."

<sup>1585</sup> Such benefits are, of course, case-specific, and could include increased reliability, better on-time performance, or the provision of certain inventory control benefits to the parties. See M&G Polymers USA, LLC v. CSX Transp., Inc. (M&G), NOR 42123, slip op. at 37-38 (STB served Sept. 27, 2012). In situations involving a lowest limit price R/VC ratio significantly above the carrier's RSAM figure, it is unlikely that even a direct truck option would have intangible benefits sufficient to call into question a preliminary conclusion of market dominance. M&G, slip op. at 38.

<sup>1586</sup> NS Reply Exhibit II-B-1 (indicating that "NS does not contest market dominance" for lanes B-9 and B-29).

<sup>1587</sup> NS Reply Exhibit II-B-1 (indicating that "NS does not contest market dominance" for lanes B-4 and B-21).

bottleneck segment.<sup>1588</sup> As a result, we conclude that NS is market dominant with regard to the Belle-East St. Louis DMF rate.

## **9. Dimethyl Sulfate**

NS has conceded market dominance over the only movement governed by the Belle-East St. Louis dimethyl sulfate (DMS) rate.<sup>1589</sup>

NS has conceded market dominance over one of the two movements governed by the only other DMS rate challenged by DuPont.<sup>1590</sup> With regard to the other movement governed by this rate—lane B-20—we find that no effective intermodal or intramodal competition exists because we were presented with no evidence of any alternatives covering only the challenged bottleneck segment.<sup>1591</sup> As a result, we conclude that NS is market dominant with regard to the Belle-Chicago DMS rate.

## **10. Flammable Liquid Waste**

NS has conceded market dominance over one of the challenged flammable liquid waste (WFL) movements (the only movement governed by the Lemoyne-Giant WFL rate).<sup>1592</sup>

With regard to the only other WFL rate challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for the only movement governed by this rate—lane B-76—we were presented with no evidence of any alternatives covering only the challenged bottleneck segment.<sup>1593</sup> As a result, we conclude that NS is market dominant with regard to the Lemoyne-Meridian WFL rate.

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<sup>1588</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-86 to II-B-92.

<sup>1589</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane B-22).

<sup>1590</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane B-27).

<sup>1591</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-93 to II-B-97.

<sup>1592</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane A-16).

<sup>1593</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-167 to II-B-168.

**11. Fuming Sulfuric Acid**

With regard to the two fuming sulfuric acid rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-103 and B-106—were we presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1594</sup> As a result, we conclude that NS is market dominant with regard to the Chattanooga-McIntosh and Cincinnati-Pepper fuming sulfuric acid rates.

**12. Glycolic Acid**

NS has conceded market dominance over the one challenged glycolic acid movement (governed by the Belle-East St. Louis glycolic acid rate).<sup>1595</sup>

**13. Lime**

With regard to the one lime rate challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for the only movement governed by this rate—lane B-96—we were presented with no evidence of any alternatives covering only the challenged bottleneck segment.<sup>1596</sup> As a result, we conclude that NS is market dominant with regard to the Dansville-Petersburg lime rate.

**14. Monomethyl Formamide**

NS has conceded market dominance over the one challenged monomethyl formamide (MMF) movement (governed by the Belle-East St. Louis MMF rate).<sup>1597</sup>

**15. Muriatic Acid**

DuPont challenges two movements of muriatic acid—lane A-18 (governed by the Louisville-Decatur rate) and lane A-19 (governed by the Louisville-Lafayette rate). The parties

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<sup>1594</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-30 to II-B-35.

<sup>1595</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane B-2).

<sup>1596</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-98 to II-B-102.

<sup>1597</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane B-37).

disagree as to whether effective intramodal alternatives exist for these lanes.<sup>1598</sup> NS argues on reply that the Board lacks jurisdiction over the lanes because an alternative rail carrier, CSXT, has access to the origin and destinations through reciprocal switching arrangements.<sup>1599</sup> In furtherance of this argument, NS notes that the Board's past decisions "assume as a matter of course that a complainant who had access to more than one railroad would not be able to demonstrate market dominance."<sup>1600</sup> On rebuttal, DuPont concedes the practical feasibility of the proffered intramodal alternatives, but argues that the additional switch fees render the alternative rail options cost-prohibitive.<sup>1601</sup> DuPont also disputes NS's argument that the existence of intramodal alternatives removes our jurisdiction over the challenged lanes.<sup>1602</sup> We agree with DuPont on the jurisdictional issue. The Board's market dominance guidelines contemplate the possibility that intramodal alternatives may not effectively constrain a carrier's rates. See Mkt. Dominance Determinations & Consideration of Prod. Competition (Mkt. Dominance II), 365 I.C.C. 118, 132 (1981), aff'd sub nom. W. Coal Traffic League v. United States, 719 F.2d 772 (5th Cir. 1983) (en banc). Furthermore, the Board specifically examined intramodal alternatives under the limit price analysis in a recent case.<sup>1603</sup> Thus, we conclude that the existence of intramodal alternatives with respect to certain movements, standing alone, does not remove our jurisdiction over the rates governing those movements because we must determine whether competition, from any source, is effective. Our limit price analysis for these lanes therefore will incorporate consideration of the proffered intramodal alternatives. The switch fees associated with these alternatives will be included in the price calculation.

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<sup>1598</sup> DuPont Opening II-B-2; NS Reply II-B-8 to II-B-9; DuPont Rebuttal II-B-3 to II-B-6.

<sup>1599</sup> NS Reply II-B-8.

<sup>1600</sup> NS Reply II-B-9 (citing Ariz. Pub. Serv. Co. v. Atchison, Topeka & Santa Fe Ry. (APS 1997), 2 S.T.B. 367, 374 (1997)). The Board made no such assumption in APS 1997, a decision in which the Board simply noted that (1) the respondent was the only carrier serving the complainant and (2) it would be infeasible for the complainant to connect to another carrier. 2 S.T.B. at 374.

<sup>1601</sup> DuPont Rebuttal II-B-3 to II-B-4.

<sup>1602</sup> DuPont Rebuttal II-B-3 to II-B-4.

<sup>1603</sup> See Total Petrochems. & Refining USA, Inc. v. CSX Transp., Inc. (TPI I), NOR 42121, slip. op. at 50-53 (STB served May 31, 2013), reconsideration denied (STB served Dec. 19, 2013) (with Vice Chairman Begeman dissenting in both), appeal docketed sub nom. CSX Transp., Inc. v. STB, No. 13-1313 (D.C. Cir. Dec. 26, 2013).

Both parties have introduced evidence of direct truck alternatives for the challenged lanes, but disagree as to whether these alternatives are practically feasible.<sup>1604</sup> On opening, DuPont argues that direct trucking does not represent a practical alternative given (1) the high volume of muriatic acid shipments on these lanes, and (2) the fact that DuPont depends upon railcars for storage when it exceeds the Louisville facility's internal storage capacity.<sup>1605</sup> On reply, NS asserts that DuPont's claimed lane volumes are significantly inflated by the inclusion of shipments for which DuPont does not pay the freight.<sup>1606</sup> On rebuttal, DuPont argues that excluding rail volumes where a third party pays the freight is illogical because doing so would mean that a carrier could have market dominance over only a portion of shipments on a single-line route even if all shipments on the route are subject to the same rate.<sup>1607</sup> We need not decide the issue of whether it is appropriate to include such volumes, however, because we conclude that the Louisville facility could accommodate onsite, non-railcar storage for even the highest volume of muriatic acid proposed by DuPont. While DuPont asserts that adding such a high volume of truck shipments would "strain both DuPont's and the customers' facilities,"<sup>1608</sup> nowhere does it assert that the Louisville facility (or the facilities of its customers) is incapable of handling such volumes without separate railcar storage. Furthermore, DuPont has failed to provide any data to support its contention that it requires railcars for storage of muriatic acid at the Louisville facility—i.e., that the capacity of the Louisville facility is currently incapable of handling DuPont's storage needs. As a result, we conclude that direct trucking represents a practically feasible alternative for lanes A-18 and A-19.

Louisville-Decatur. DuPont's direct truck alternative for lane A-18 has a price of [REDACTED] while NS's direct truck alternative has a price of [REDACTED].<sup>1609</sup> NS's alternative rail option has a

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<sup>1604</sup> DuPont Opening II-B-36 to II-B-38; NS Reply II-B-173 to II-B-175; DuPont Rebuttal II-B-42 to II-B-45. DuPont on opening discusses why transload alternatives do not represent effective competition for these movements. NS does not dispute this point. See NS Reply Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lanes A-18 and A-19).

<sup>1605</sup> DuPont Opening II-B-36 to II-B-37.

<sup>1606</sup> NS Reply II-B-174. According to DuPont, nearly all of the muriatic acid produced at the Louisville facility is sold to a third party, which then re-sells the DuPont-produced muriatic acid to end-users. Title and risk of loss passes to the third party when the muriatic acid is loaded in Louisville. While the third party currently pays the freight on these movements, DuPont asserts that it has done so in the past and plans on paying the freight in the future.

<sup>1607</sup> DuPont Rebuttal II-B-42.

<sup>1608</sup> DuPont Opening II-B-37 (emphasis added).

<sup>1609</sup> DuPont Opening WP "Direct Truck Costs;" NS Reply Errata WP "Direct Truck Analysis."



price of [REDACTED], which increases to [REDACTED] when the reciprocal switch charge is included.<sup>1610</sup> The price of NS's direct truck alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Louisville-Decatur muriatic acid rate effectively and, even though this alternative likely has at least some of the same intangible benefits associated with any direct truck option, we conclude that such benefits are insufficient to call into question our preliminary conclusion in light of the fact that the challenged rail transportation likely also provides, under these circumstances, certain countervailing intangible benefits.<sup>1611</sup> As a result, we conclude that NS is market dominant with regard to the Louisville-Decatur muriatic acid rate.

Louisville-Lafayette. DuPont's direct truck alternative for lane A-19 has a price of [REDACTED] while NS's direct truck alternative has a price of [REDACTED].<sup>1612</sup> NS's alternative rail option has a price of [REDACTED], which increases to [REDACTED] when the reciprocal switch charge is included.<sup>1613</sup> The price of NS's direct truck alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is [REDACTED] below NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does exert competitive pressure sufficient to restrain NS's Louisville-Lafayette muriatic acid rate effectively and, even though the challenged rail transportation likely provides

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<sup>1610</sup> The price of the alternative rail option is the CSXT line-haul rate. See DuPont Rebuttal II-B-5. The reciprocal switch charge for Louisville is \$582. DuPont Rebuttal II-B-5. The reciprocal switch charge for Decatur is \$415. NS Reply WP "NS 8001 Switching Tariff."

<sup>1611</sup> Again, under certain circumstances direct trucking alternatives can provide intangible benefits vis-à-vis the challenged rail transportation (e.g., increased reliability or the ability to respond more quickly to customer delivery requests) sufficient to call into question a preliminary conclusion that such alternatives do not exert competitive pressure sufficient to restrain rates effectively. See M&G, slip op. at 59 (concluding that intangible features of direct trucking alternative were sufficient to call into question a preliminary conclusion of market dominance with regard to the Apple Grove-Clifton Forge rate). However, given the fact that the challenged rail transportation is the generally preferred mode for hazardous materials, we conclude that any intangible benefits related to direct trucking that are present are insufficient to call into question our preliminary conclusion with regard to the Louisville-Decatur muriatic acid rate.

<sup>1612</sup> DuPont Opening WP "Direct Truck Costs;" NS Reply Errata WP "Direct Truck Analysis."

<sup>1613</sup> The price of the alternative rail option is the CSXT line-haul rate. See DuPont Rebuttal II-B-5. The reciprocal switch charge for Louisville is \$582. DuPont Rebuttal II-B-5. The reciprocal switch charge for Lafayette is \$415. NS Reply WP "NS 8001 Switching Tariff."

certain intangible benefits, we conclude that such benefits are insufficient to call into question our preliminary conclusion in light of the [REDACTED] disparity between the lowest limit price R/VC ratio and the carrier's RSAM figure as well as the fact that, under these circumstances, the alternative likely also provides certain countervailing intangible benefits.<sup>1614</sup> As a result, we conclude that NS is not market dominant with regard to the Louisville-Lafayette muriatic acid rate.

## 16. Petroleum Coke

DuPont challenges five movements of petroleum coke—lane B-48 (governed by the Hagerstown-Edgemoor rate), lane B-69 (governed by the East St. Louis-Edgemoor (private cars) rate), lane B-75 (governed by the Chicago-Edgemoor (private cars) rate), lane B-98 (governed by the East St. Louis-Edgemoor (NS cars) rate), and lane B-123 (governed by the Chicago-Edgemoor (NS cars) rate). The parties have introduced evidence of both direct truck and rail/truck transload alternatives for the challenged lanes.<sup>1615</sup>

DuPont acknowledges that “alternate” direct trucking<sup>1616</sup> and rail/truck transloading are practically feasible alternatives for these movements, but argues that they are not economically feasible given that the Edgemoor facility is not currently configured to accommodate the high-volume dump truck unloading that would be necessary to support large-scale truck deliveries of

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<sup>1614</sup> See *supra* n.1611.

<sup>1615</sup> DuPont Opening II-B-123 to II-B-128; NS Reply II-B-161 to II-B-164; DuPont Rebuttal II-B-132 to II-B-140. DuPont on opening discusses why barge alternatives do not represent effective competition for these movements. NS does not dispute this point. See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”).

Again, we exclude consideration of any alternative that does not replicate the particular origin and destination of the specific challenged bottleneck segment at issue—e.g., NS's proposed direct truck alternative for lane B-48 involving truck transportation between Cresap and Edgemoor. We likewise exclude consideration of any alternatives for which the parties failed to provide price data, such as the “alternate” direct truck option proposed by DuPont for lane B-69.

<sup>1616</sup> DuPont has proposed an “alternate” direct truck option for certain lanes, including lane B-48. DuPont Opening I-16 n.20 & WP “Alternate Truck Analysis.” While such an option is more properly characterized as a rail/truck transload alternative (because it necessarily involves both rail and truck transportation between the movement's overall origin and destination), and will be costed as such, for ease of reference we will refer to these as “alternate” direct truck alternatives.

petroleum coke either by direct truck or rail/truck transload shipments.<sup>1617</sup> On reply, NS concedes that some infrastructure investment would be necessary to accommodate additional truck deliveries at Edgemoor, but argues that DuPont's estimated cost figures for reconfiguration of the facility do not represent "an unreasonable amount for a shipper to spend to take advantage of a competitive option."<sup>1618</sup> NS further argues that DuPont's own workpapers show that the actual cost to reconfigure Edgemoor is less than the full amount claimed by DuPont on opening.<sup>1619</sup> On rebuttal, DuPont generally disputes NS's assertions.<sup>1620</sup> While the parties agree that some level of infrastructure investment would be required to accommodate additional deliveries by truck at Edgemoor, in this case we lack the record evidence that would enable us to appropriately factor infrastructure investment costs into the limit price analysis of the various alternatives proposed for this lane.<sup>1621</sup>

Chicago-Edgemoor (NS cars). DuPont's transload alternative for lane B-123 has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED],<sup>1622</sup> so DuPont's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this

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<sup>1617</sup> DuPont Opening II-B-123 to II-B-126. DuPont asserts that the absence of any truck shipments of petroleum coke to Edgemoor during the relevant 2006-2010 time period "illustrates" that "[d]irect truck is not an effective alternative to rail service" for the issue movements. DuPont Opening II-B-123 to II-B-124. This assertion is moot, however, given that we are excluding from consideration all direct truck alternatives for the challenged petroleum coke movements on the basis that they do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue.

<sup>1618</sup> NS Reply II-B-162.

<sup>1619</sup> NS Reply II-B-162. NS does not dispute DuPont's contention, DuPont Opening II-B-124, that Edgemoor would need to be reconfigured to accommodate dump trucks because (1) only bottom-unloading trucks are compatible with the facility's current system and (2) such trucks are not readily available.

<sup>1620</sup> DuPont Rebuttal II-B-132 to II-B-135.

<sup>1621</sup> We encourage future rate litigants addressing this issue to provide basic information that would allow the Board to judge the accuracy of proposed infrastructure investment costs, such as the total cost, the traffic volume over which that cost would be spread, the time horizon for recouping the costs, the rate of depreciation, and cost of capital.

<sup>1622</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis." For many of the transload alternatives presented in this case, the parties did not separately break out that portion of the cost that would cover only transportation between the origin and destination of the bottleneck segment. To calculate this cost, the Board has subtracted the connecting carrier's tariff rate (and the associated fuel surcharge) from the total cost of the transload alternative presented.

movement is [REDACTED], which is below NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does exert competitive pressure sufficient to restrain NS's Chicago-Edgemoor (NS cars) petroleum coke rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.<sup>1623</sup> As a result, we conclude that NS is not market dominant with regard to the Chicago-Edgemoor (NS cars) petroleum coke rate.

Chicago-Edgemoor (private cars). DuPont's transload alternative for lane B-75 has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED],<sup>1624</sup> so DuPont's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Chicago-Edgemoor (private cars) petroleum coke rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Chicago-Edgemoor (private cars) petroleum coke rate.

East St. Louis-Edgemoor (NS cars). The only alternative proposed for lane B-98 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue (and for which we were provided price data) is the transload option proposed by NS, which has a price of [REDACTED].<sup>1625</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] below NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does exert competitive pressure sufficient to restrain NS's East St. Louis-Edgemoor (NS cars) petroleum coke rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our

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<sup>1623</sup> Again, under certain circumstances, transportation via railcar might provide certain intangible benefits vis-à-vis transload alternatives (e.g., presumed shorter transport times) sufficient to call into question a preliminary conclusion that such alternatives exert competitive pressure sufficient to restrain rates effectively. See *M&G*, slip op. at 56 n.254. Given the disparity between the lowest limit price R/VC ratio and the carrier's RSAM figure, the length of the movement at issue here, and the attendant likelihood that delivery to the ultimate destination—a DuPont, as opposed to a third-party customer, facility—is not necessarily time-sensitive, however, we conclude that such benefits are insufficient to call into question our preliminary conclusion with regard to NS's Chicago-Edgemoor (NS cars) petroleum coke rate.

<sup>1624</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

<sup>1625</sup> NS Reply WP "Transload Lane Analysis."

preliminary conclusion.<sup>1626</sup> As a result, we conclude that NS is not market dominant with regard to the East St. Louis-Edgemoor (NS cars) petroleum coke rate.

East St. Louis-Edgemoor (private cars). The only alternative proposed for lane B-69 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue (and for which we were provided price data) is the transload option proposed by NS, which has a price of [REDACTED].<sup>1627</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] below NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does exert competitive pressure sufficient to restrain NS's East St. Louis-Edgemoor (private cars) petroleum coke rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.<sup>1628</sup> As a result, we conclude that NS is not market dominant with regard to the East St. Louis-Edgemoor (private cars) petroleum coke rate.

Hagerstown-Edgemoor. The only alternative proposed for lane B-48 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the "alternate" direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1629</sup> Because it

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<sup>1626</sup> Again, under certain circumstances, transportation via railcar might provide certain intangible benefits vis-à-vis transload alternatives (e.g., presumed shorter transport times) sufficient to call into question a preliminary conclusion that such alternatives exert competitive pressure sufficient to restrain rates effectively. See *M&G*, slip op. at 56 n.254. Given the [REDACTED] disparity between the lowest limit price R/VC ratio and the carrier's RSAM figure, the length of the movement at issue here, and the attendant likelihood that delivery to the ultimate destination—a DuPont, as opposed to a third-party customer, facility—is not necessarily time-sensitive, however, we conclude that such benefits are insufficient to call into question our preliminary conclusion with regard to NS's East St. Louis-Edgemoor (NS cars) petroleum coke rate.

<sup>1627</sup> NS Reply WP "Transload Lane Analysis."

<sup>1628</sup> Under certain circumstances, transportation via railcar might provide certain intangible benefits vis-à-vis transload alternatives (e.g., presumed shorter transport times) sufficient to call into question a preliminary conclusion that such alternatives exert competitive pressure sufficient to restrain rates effectively. See *M&G*, slip op. at 56 n.254. Given the length of the movement at issue here, and the attendant likelihood that delivery to the ultimate destination—a DuPont, as opposed to a third-party customer, facility—is not necessarily time-sensitive, however, we conclude that such benefits are insufficient to call into question our preliminary conclusion with regard to NS's East St. Louis-Edgemoor (private cars) petroleum coke rate.

<sup>1629</sup> DuPont Opening WP "Alternate Truck Analysis."

is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Hagerstown-Edgemoor petroleum coke rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Hagerstown-Edgemoor petroleum coke rate.

## 17. Polyethylene

NS has conceded market dominance over one of the two challenged polyethylene movements governed by the New Orleans-Greenville rate.<sup>1630</sup> On opening, DuPont discusses why direct truck and transload alternatives do not represent effective competition for the only other polyethylene movement governed by this rate (lane B-82).<sup>1631</sup> NS does not dispute this point with respect to transload alternatives,<sup>1632</sup> but argues that direct trucking is an effective competitive alternative for this movement.<sup>1633</sup> However, as explained above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue. The direct truck alternative proposed by NS for lane B-82 falls into this category. Because we exclude consideration of NS's proposed direct truck alternative, and because NS does not dispute DuPont's contention that other alternatives do not represent effective competition for this lane, we conclude that no alternatives for lane B-82 exert competitive pressure sufficient to restrain NS's New Orleans-Greenville polyethylene rate effectively. We conclude as a result that NS is market dominant with regard to that rate.

East St. Louis-Washington. For the two remaining movements of polyethylene—lanes B-45 and B-83 (governed by the East St. Louis-Washington rate)—both parties have introduced evidence of rail/truck transload alternatives, but disagree as to whether these alternatives are practically feasible.<sup>1634</sup> On opening, DuPont argues that rail is the “overwhelmingly dominant

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<sup>1630</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane B-44).

<sup>1631</sup> DuPont Opening II-B-129 to II-B-135.

<sup>1632</sup> See NS Reply Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lane B-82).

<sup>1633</sup> NS Reply II-B-172.

<sup>1634</sup> DuPont Opening II-B-129 to II-B-135; NS Reply II-B-169 to II-B-173; DuPont Rebuttal II-B-141 to II-B-148. For reasons described above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue—e.g., NS's proposed direct truck alternative for lane B-83 involving truck transportation between Orange and Washington.

mode for transporting bulk polyethylene...not just for DuPont but for the entire plastics industry,” and that “polyethylene customers rely extensively upon railcars for storage.”<sup>1635</sup> As support for this proposition, DuPont relies on testimony submitted by the Society of Plastics in a 1996 proceeding before the Board involving the Union Pacific/Southern Pacific rail merger.<sup>1636</sup> While DuPont concedes that the customers at both Greenville and Washington have received truck deliveries in the past, it contends that the historical volumes received at those locations are very small,<sup>1637</sup> and that both customers “clearly are dependent upon railcars to store their polyethylene inventory” given the limited storage capacity at the customers’ facilities.<sup>1638</sup> DuPont also argues that transload alternatives must account for “inventory carrying costs that are attributable to the time lag between when DuPont is able to invoice customers for rail shipments and truck shipments.”<sup>1639</sup> NS responds that (1) DuPont regularly transloads polyethylene in the ordinary course of business, (2) the testimony from an unrelated proceeding is irrelevant to the case at hand, (3) the customers on the issue lanes have silos dedicated to polyethylene storage, and (4) DuPont has failed to justify the inclusion of inventory carrying costs for transload alternatives and has failed to quantify such costs in any event.<sup>1640</sup> On rebuttal, DuPont argues that (1) transload alternatives involve significantly higher costs and that the polymer industry has an extensive investment in infrastructure that is built around rail transportation, (2) transloading is used primarily to serve non-rail destinations at longer distances or to expedite shipments to rail-served customers when there is inventory at a bulk terminal that is closer than the production plant, (3) the Society of Plastics testimony is relevant to the case at hand because DuPont has demonstrated that its dependency on rail is no different than the polymer industry as a whole, (4) railroads’ market dominance over the transportation of polymers is evidenced by the Board’s decision in M&G, and (5) it has justified the consideration of inventory carrying costs.<sup>1641</sup>

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<sup>1635</sup> DuPont Opening II-B-129.

<sup>1636</sup> See DuPont Opening II-B-130 to II-B-133.

<sup>1637</sup> DuPont Opening II-B-130.

<sup>1638</sup> DuPont Opening II-B-134.

<sup>1639</sup> DuPont Opening II-B-135. While DuPont also suggests that transloading polyethylene raises certain product integrity concerns, DuPont Opening I-40, it admits that it frequently has utilized transportation alternatives involving a single rail/truck transload during the relevant time period, DuPont Opening II-B-133. Because all of the transload alternatives proposed for the challenged lanes fall into this category, we conclude that the generalized product integrity concerns expressed by DuPont do not render these alternatives practically infeasible.

<sup>1640</sup> NS Reply II-B-170 to II-B-171.

<sup>1641</sup> DuPont Rebuttal II-B-141 to II-B-145.

We disagree with DuPont's suggestion that transloading polyethylene is practically infeasible as a general matter. As NS points out, the evidence in this case demonstrates that DuPont regularly transloads polyethylene in the normal course of business, a fact that undermines both DuPont's historic industry-wide arguments and its generalized arguments regarding its own business operations.<sup>1642</sup> We further conclude that DuPont has failed to demonstrate that the proffered transload alternatives represent practically infeasible options with respect to the challenged lanes because the customers on those lanes require railcars for storage. DuPont has presented no customer-specific evidence, in the form of contracts or customer affidavits, to support such a conclusion. Furthermore, while inventory carrying costs are a legitimate factor to consider,<sup>1643</sup> we will not include such costs in our calculation of the limit prices in this case for the proffered transloading options because DuPont has failed to quantify these costs.

Again, two contested lanes travel under the East St. Louis-Washington rate, the first of which is lane B-45. DuPont's transload alternative for this lane has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED],<sup>1644</sup> so NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure.<sup>1645</sup> We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's East St. Louis-Washington polyethylene rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

Lane B-83 is also governed by the East St. Louis-Washington rate. DuPont's transload alternative for this lane has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED]

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<sup>1642</sup> DuPont's citation to the Board's decision in M&G is inapposite. Neither that case, nor the Board's decision in TPI (which also involved the transportation of polyethylene), held that transloading polyethylene is practically infeasible.

<sup>1643</sup> See TPI I, slip op. at 57 (with Vice Chairman Begeman dissenting).

<sup>1644</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

<sup>1645</sup> DuPont disputes NS's calculation of the price of the transload alternative proffered by NS for this lane. DuPont Rebuttal II-B-146. We need not address this argument, however, because the price presented by NS for this alternative results in a lowest limit price R/VC ratio that is already above RSAM (and because there are no intangible features sufficient to call into question the preliminary conclusion with respect to market dominance for the rate governing this movement). Any increase in the estimated price of the alternative would simply increase the lowest limit price R/VC ratio, and therefore would have no impact with respect to our market dominance conclusion.



██████,<sup>1646</sup> so NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is ██████, which is ██████ above NS's 275% RSAM figure.<sup>1647</sup> We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's East St. Louis-Washington polyethylene rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

As demonstrated above, the lowest limit price R/VC ratio for each of the lanes governed by the East St. Louis-Washington polyethylene rate ██████ exceeds NS's RSAM figure, and we therefore preliminarily conclude that none of the lowest limit price alternatives proposed for movements governed by the East St. Louis-Washington polyethylene rate exert competitive pressure sufficient to restrain that rate effectively. Furthermore, none of the lowest limit price alternatives have intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the East St. Louis-Washington polyethylene rate.

## 18. Potassium Caustic

With regard to the one potassium caustic rate challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for the only movement governed by this rate—lane B-125—we were presented with no evidence of any alternatives covering only the challenged bottleneck segment.<sup>1648</sup> As a result, we conclude that NS is market dominant with regard to the Charleston-Memphis potassium caustic rate.

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<sup>1646</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

<sup>1647</sup> DuPont disputes NS's calculation of the price of the transload alternative proffered by NS for this lane. DuPont Rebuttal II-B-147 to II-B-148. We need not address this argument, however, because the price presented by NS for this alternative results in a lowest limit price R/VC ratio that is already above RSAM (and because there are no intangible features sufficient to call into question the preliminary conclusion with respect to market dominance for the rate governing this movement). Any increase in the estimated price of the alternative would simply increase the lowest limit price R/VC ratio, and therefore would have no impact with respect to our market dominance conclusion.

<sup>1648</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-51 to II-B-56.

## 19. Sodium Caustic

NS has conceded market dominance over one of the challenged sodium caustic movements (the only movement governed by the McIntosh-Lemoyne sodium caustic rate).<sup>1649</sup>

With regard to an additional two sodium caustic rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-79, B-81, and B-108—were we presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1650</sup> As a result, we conclude that NS is market dominant with regard to the Lynchburg-Danville sodium caustic rate and the McIntosh-Mobile sodium caustic rate.

DuPont has challenged an additional five movements of sodium caustic—lane B-47 (governed by the Charleston-Memphis rate), lane B-80 (governed by the McIntosh-New Orleans rate), lane B-107 (governed by the Cincinnati-Belle rate), lane B-112 (governed by the Columbus-Belle rate), and B-114 (governed by the Buffalo-Edgemoor rate). On opening, DuPont discusses why direct truck, transload, and barge alternatives do not represent effective competition for these movements.<sup>1651</sup> NS does not dispute this point with respect to transload and barge alternatives,<sup>1652</sup> but argues that direct truck alternatives represent effective competition for these movements.<sup>1653</sup> However, as explained above, we exclude consideration of any

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<sup>1649</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane A-22).

<sup>1650</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-57 to II-B-66.

<sup>1651</sup> DuPont Opening II-B-57 to II-B-66.

<sup>1652</sup> See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”) & Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lanes B-47, B-80, B-107, B-112, and B-114).

<sup>1653</sup> NS Reply II-B-151 to II-B-157. DuPont has proposed “alternate” direct truck options for lanes B-47, B-107, B-112, and B-114. DuPont Opening I-16 n.20 & WP “Alternate Truck Analysis.” Because these options are more properly characterized as rail/truck transload alternatives, again, NS effectively concedes that they do not represent effective competition for these movements by not addressing these alternatives on reply. In any event, the lowest limit price R/VC ratios generated by these alternatives, and therefore the lowest limit price R/VC ratios for these movements, are all above NS’s 275% RSAM figure, and these alternatives have no intangible features that would be sufficient to call into question any preliminary conclusion with respect to market dominance for the rates governing these movements based on a limit price analysis.

alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue. All of the direct truck alternatives proposed by NS for the challenged lanes fall into this category. Because we exclude consideration of NS's proposed direct truck alternatives, and because NS does not dispute DuPont's contention that other alternatives do not represent effective competition for these lanes, we conclude that no alternatives for these lanes exert competitive pressure sufficient to restrain the applicable rates effectively. We conclude as a result that NS is market dominant with regard to the following five sodium caustic rates: Buffalo-Edgemoor, Charleston-Memphis, Cincinnati-Belle, Columbus-Belle, and McIntosh-New Orleans.

## **20. Sodium Methyrate**

On opening, DuPont discusses why direct truck, transload, and barge alternatives do not represent effective competition for the only challenged sodium methyrate movement (governed by the New Orleans-Lemoyne rate).<sup>1654</sup> NS does not dispute this point with respect to transload and barge alternatives,<sup>1655</sup> but argues that direct trucking provides effective competition for this movement.<sup>1656</sup> However, as explained above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue. The direct truck alternative proposed by NS for lane B-86 falls into this category. Because we exclude consideration of NS's proposed direct truck alternative, and because NS does not dispute DuPont's contention that other alternatives do not represent effective competition for this lane, we conclude that no alternatives for lane B-86 exert competitive pressure sufficient to restrain NS's New Orleans-Lemoyne sodium methyrate rate effectively. We conclude as a result that NS is market dominant with regard to that rate.

## **21. Spent Sulfuric Acid**

With regard to the one spent sulfuric acid rate challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for the only movement governed by this rate—lane B-77—we were presented with no evidence of any alternatives covering only

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<sup>1654</sup> DuPont Opening II-B-136 to II-B-140.

<sup>1655</sup> See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”) & Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lane B-86).

<sup>1656</sup> NS Reply II-B-184 to II-B-186.

the challenged bottleneck segment.<sup>1657</sup> As a result, we conclude that NS is market dominant with regard to the McIntosh-Mobile spent sulfuric acid rate.

## **22. Sulfur Trioxide**

NS has conceded market dominance over one of the challenged sulfur trioxide movements (the only movement governed by the New Orleans-Gracewood sulfur trioxide rate).<sup>1658</sup>

With regard to the only other sulfur trioxide rate challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for the only movement governed by this rate—lane B-102—we were presented with no evidence of any alternatives covering only the challenged bottleneck segment.<sup>1659</sup> As a result, we conclude that NS is market dominant with regard to the Chattanooga-Gracewood sulfur trioxide rate.

## **23. Sulfuric Acid**

NS has conceded market dominance over the only movement governed by the Birmingham-McIntosh sulfuric acid rate and the only movement governed by the Reybold-Fort Mill sulfuric acid rate.<sup>1660</sup>

With regard to an additional six sulfuric acid rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-92, B-94, B-126, B-131, B-134, B-138, and B-139—were we

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<sup>1657</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-26 to II-B-29.

<sup>1658</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane B-122).

<sup>1659</sup> On opening, DuPont argues generally that the rate governing this movement faces no competition sufficient to restrain the rate effectively. DuPont Opening II-B-141 to II-B-145.

<sup>1660</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes A-24 and B-119). NS has also conceded market dominance over one of the two movements governed by the Charlotte-Fort Mill sulfuric acid rate. NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lane B-118). However, as we explain above, the R/VC ratios associated with that rate (which also governs lane B-93) fall below the statutory jurisdictional threshold, and NS therefore lacks market dominance over that rate.

presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1661</sup> As a result, we conclude that NS is market dominant with regard to the following six sulfuric acid rates: Petersburg-Dallas, Petersburg-Rockwell, Reybold-East St. Louis, Reybold-Kansas City, Reybold-Memphis, and Reybold-Streator.

Furthermore, on opening, DuPont discusses why direct truck, transload, and barge alternatives do not represent effective competition for lane B-101, the only challenged sulfuric acid movement governed by the Cincinnati-Dallas rate.<sup>1662</sup> NS does not dispute this point with respect to transload and barge alternatives,<sup>1663</sup> but argues that direct trucking provides effective competition for this movement.<sup>1664</sup> However, as explained above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue. The direct truck alternative proposed by NS for lane B-101 falls into this category. Because we exclude consideration of NS's proposed direct truck alternative, and because NS does not dispute DuPont's contention that other alternatives do not represent effective competition for this lane, we conclude that no alternatives for lane B-101 exert competitive pressure sufficient to restrain NS's Cincinnati-Dallas sulfuric acid rate effectively. We conclude as a result that NS is market dominant with regard to that rate.

DuPont challenges an additional 14 movements of sulfuric acid—lane A-2 (governed by the Bayway-Waynesville rate); lane A-23 (governed by the Reybold-Detroit rate); lane A-25 (governed by the Reybold-Morrisville rate); lane B-127 (governed by the Reybold-Baltimore Bayview rate); lane B-129 (governed by the Reybold-Birmingham rate); lane B-130 (governed by the Reybold-Charlotte rate); lane B-136 (governed by the Reybold-Cincinnati rate); lane B-

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<sup>1661</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-10 to II-B-25.

<sup>1662</sup> DuPont Opening II-B-10 to II-B-25.

<sup>1663</sup> See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”) & Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lane B-101).

<sup>1664</sup> NS Reply II-B-127 to II-B-128. DuPont has proposed an “alternate” direct truck option for lane B-101. DuPont Opening I-16 n.20 & WP “Alternate Truck Analysis.” Because this option is more properly characterized as a rail/truck transload alternative, again, NS effectively concedes that it does not represent effective competition for this movement by not addressing this alternative on reply. In any event, the lowest limit price R/VC ratio generated by this alternative, and therefore the lowest limit price R/VC ratio for this movement, is above NS's 275% RSAM figure, and this alternative has no intangible features that would be sufficient to call into question any preliminary conclusion with respect to market dominance for the rate governing this movement based on a limit price analysis.

141 (governed by the Reybold-Toledo rate); lane B-142 (governed by the Reybold-Hagerstown rate); and lanes B-128, B-132, B-135, B-137, and B-140 (governed by the Reybold-Chicago rate). The parties have introduced evidence of both direct truck and rail/truck transload alternatives for the challenged lanes, but disagree as to whether these alternatives are practically feasible.<sup>1665</sup>

On opening, DuPont concedes that trucking and transloading sulfuric acid is practically feasible as a general matter,<sup>1666</sup> but argues that they are not practically feasible alternatives for certain of the challenged movements for various reasons. DuPont first claims that the Reybold plant has significant infrastructure constraints that restrict the number of trucks it can load. Because the Reybold facility has only one rack for loading sulfuric acid into trucks, and because trucks have longer loading times than railcars, DuPont claims that moving sulfuric acid out of Reybold via truck is far less efficient than doing so via rail.<sup>1667</sup> DuPont estimates that it would

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<sup>1665</sup> DuPont Opening II-B-10 to II-B-25; NS Reply II-B-108 to II-B-127; DuPont Rebuttal II-B-7 to II-B-32. DuPont on opening discusses why barge alternatives do not represent effective competition for these movements. NS does not dispute this point. See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”).

Furthermore, for reasons described above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue—e.g., NS’s proposed direct truck alternative for lane B-129 involving truck transportation between Reybold and Brewton. DuPont has proposed an “alternate” direct truck option for certain lanes, including lane B-129. DuPont Opening I-16 n.20 & WP “Alternate Truck Analysis.” While these options are more properly characterized as rail/truck transload alternatives, and will be costed as such, for ease of reference we will refer to them as “alternate” direct truck alternatives.

We likewise exclude consideration of any alternatives for which the parties failed to provide price data, such as the “alternate” direct truck option proposed by DuPont for lane B-140.

<sup>1666</sup> See DuPont Opening II-B-11 (explaining that “[t]rucks are used predominantly [but not exclusively] for short distance movements of sulfuric acid, for low volume purchasers, to serve customers without rail access, and for expedited or emergency shipments to rail-served customers”) (emphasis added); DuPont Opening II-B-17 (explaining that “[a]lthough sulfuric acid can be transloaded, it is typically transloaded only from railcars into trucks,” but conceding also that “truck-to-rail transloading is physically feasible”). While DuPont on rebuttal argues that it does not transload sulfuric acid from trucks to railcars, DuPont Rebuttal II-B-12, it does not claim that such transloading is infeasible from a practical standpoint.

<sup>1667</sup> DuPont Opening II-B-15 to II-B-16.

need to construct one additional truck loading rack at Reybold to handle its current rail requirements for sulfuric acid shipments by truck. Constructing this rack, according to DuPont, would be very expensive (even excluding real estate acquisition costs) and would require the acquisition of additional property within the existing refinery complex from the refinery owner. DuPont does not know whether the refinery owner would sell DuPont the additional property and, if so, at what cost.<sup>1668</sup> DuPont further argues that the Reybold plant currently only has two tanks for the storage of three concentrations of sulfuric acid, and that it relies upon railcars to store large quantities of its sulfuric acid production.<sup>1669</sup> DuPont explains that the above concerns apply equally to direct truck as well as transload alternatives, but contends that there are additional problems with transloading sulfuric acid because of the commodity's physical characteristics.<sup>1670</sup> Two of the three concentrations of sulfuric acid moving over certain of the issue lanes (98% and 99%) freeze at 42° F without access to steam or hot water, which prevents their being transloaded at locations such as Philadelphia because these locations experience frequent and extended periods of below 42° weather.<sup>1671</sup> DuPont further explains that the third concentration of sulfuric acid (93%) comes in three grades—technical, water white, and electrolytic—and that only the technical grade can be transloaded without degrading product quality because transloading typically increases corrosion in stainless steel trucks.<sup>1672</sup> DuPont also argues that transloading would require it to stage empty railcars for loading at the bulk terminal and pay additional storage fees.<sup>1673</sup> Finally, DuPont argues that the customer on lane A-2 [REDACTED]; that the three customers on lane B-127 are “high volume purchasers,” one of which is a “distributor that requires railcars for storage;” and that the customers on lanes A-23, B-132, B-135, and B-140 “are distributors that require railcars for storage.”<sup>1674</sup> DuPont explains that trucking or transloading does not make sense for customers that are distributors because those customers are themselves transloading the product at the destination.<sup>1675</sup>

On reply, NS argues that DuPont needs no additional infrastructure investment at the Reybold facility because the facility currently has sufficient truck loading capacity to

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<sup>1668</sup> DuPont Opening II-B-16.

<sup>1669</sup> DuPont Opening II-B-16.

<sup>1670</sup> DuPont Opening II-B-17 to II-B-18.

<sup>1671</sup> DuPont Opening II-B-18.

<sup>1672</sup> DuPont Opening II-B-18.

<sup>1673</sup> DuPont Opening II-B-18.

<sup>1674</sup> DuPont Opening II-B-24.

<sup>1675</sup> DuPont Opening II-B-24.

accommodate diversion of even substantially more than current railcar volumes.<sup>1676</sup> NS asserts that DuPont's claim of infrastructure constraints at Reybold are undercut by a 2011 Request for Proposal for trucking rates for outbound shipments originating at Reybold (2011 RFP), in which DuPont estimated that the total number of truckloads of sulfuric acid originating at that facility would increase five-fold from 2011 to 2012.<sup>1677</sup> NS further argues that the 98% and 99% concentrations of sulfuric acid are easily transloadable in locations such as Philadelphia if one uses well-equipped transloading facilities with proper equipment to handle those concentrations, and that product degradation concerns with regard to the water white and electrolytic grades of 93% concentration sulfuric acid can be avoided by using well-equipped transloading facilities.<sup>1678</sup> With regard to lane B-127, NS argues that historical volumes on this lane are not unusually high, and that DuPont has provided no documentation or explanation for its claim that one of the customers on this lane requires railcars for storage.<sup>1679</sup> With regard to lane A-23, NS argues that DuPont has provided no evidence to support its claim that the customer requires railcars for storage.<sup>1680</sup> With regard to lanes B-135 and B-140, NS argues that the question of whether the customers on these lanes require railcars for storage is moot since NS's proposed alternatives for these lanes would result in railcar delivery to the customers.<sup>1681</sup>

On rebuttal, DuPont argues that NS fails to substantively dispute that DuPont has not used direct trucking extensively, if at all, for any of the issue movements.<sup>1682</sup> DuPont generally reiterates its arguments regarding its inability to expand truck loading capacity at the Reybold facility, disputes NS's contention that DuPont needs no additional infrastructure investment at the facility because it currently has sufficient truck loading capacity to accommodate diversion of even substantially more than current railcar volumes, and explains that NS incorrectly identifies the estimated number of future truck shipments from Reybold in the 2011 RFP, which

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<sup>1676</sup> NS Reply II-B-111 to II-B-112.

<sup>1677</sup> NS Reply II-B-109 to II-B-110.

<sup>1678</sup> NS Reply II-B-112.

<sup>1679</sup> NS Reply II-B-116 to II-B-117.

<sup>1680</sup> NS Reply II-B-114.

<sup>1681</sup> NS Reply II-B-120 n.127 & II-B-122 n.129.

<sup>1682</sup> DuPont Rebuttal II-B-9. We note here that the absence of historical truck volumes is insufficient to demonstrate the practical infeasibility of a direct truck alternative, unless supported by other evidence regarding the practical infeasibility of such an alternative for the particular movement at issue. See supra p. 293 (concluding with respect to lane A-9 that "the [REDACTED] together demonstrate that direct trucking is not a practically feasible alternative for this movement").



is in fact much lower.<sup>1683</sup> DuPont further argues that NS has failed to rebut DuPont's evidence regarding storage capacity limitations at the Reybold facility and the fact that DuPont relies upon railcars for supplemental storage there.<sup>1684</sup> DuPont next claims that NS has ignored the product integrity evidence submitted on opening that the water white and electrolytic grades of 93% concentration sulfuric acid cannot be transloaded at all.<sup>1685</sup> With regard to lane A-2, DuPont asserts that NS has failed to address its argument that the customer requires delivery [REDACTED].<sup>1686</sup> With regard to lane A-23, DuPont claims that the customer's website shows that it is a distributor, and that NS fails to acknowledge that DuPont's evidence regarding that customer's requirement of railcars for storage was presented by DuPont witnesses who are under oath.<sup>1687</sup> Finally, DuPont asserts that NS does not dispute that the customers on lanes B-132, B-135, and B-140 are distributors that require railcars for storage.<sup>1688</sup>

Based on the record, there appears to be no clear bar to DuPont increasing truck loading capacity at the Reybold facility. DuPont asserts that construction of an additional truck loading rack for sulfuric acid would require the acquisition of additional property within the existing refinery complex from the refinery owner, but then just states baldly that it "does not know if it...could acquire the additional property from the refinery owner." From this bare discussion, we cannot conclude that construction of the proposed additional truck loading rack is practically infeasible.<sup>1689</sup> With regard to storage, DuPont currently has two storage tanks for sulfuric acid at that facility, and has not convinced us that it is unable to construct additional on-site storage tanks if necessary.

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<sup>1683</sup> DuPont Rebuttal II-B-10 to II-B-11 & II-B-14 to II-B-15.

<sup>1684</sup> DuPont Rebuttal II-B-16.

<sup>1685</sup> DuPont Rebuttal II-B-13.

<sup>1686</sup> DuPont Rebuttal II-B-32.

<sup>1687</sup> DuPont Rebuttal II-B-16.

<sup>1688</sup> DuPont Rebuttal II-B-21, II-B-24, II-B-26.

<sup>1689</sup> Because we conclude that the rates governing the challenged movements of sulfuric acid originating at Reybold are not being effectively constrained by competitive alternatives, we need not address DuPont's argument that the real estate acquisition and construction costs of the additional truck loading rack at the Reybold facility render enhanced truck operations cost-prohibitive, or NS's argument that DuPont needs no additional infrastructure investment at the Reybold facility because the facility currently has sufficient truck loading capacity to accommodate diversion of even substantially more than current railcar volumes. For similar reasons, we need not address DuPont's contention that the price of transload alternatives should include storage fees related to the repositioning of railcars at bulk terminals.

DuPont likewise has not demonstrated that certain transload alternatives are practically infeasible due to the physical characteristics of sulfuric acid. While DuPont expresses concern about the viability of transloading 98% and 99% sulfuric acid concentrations at locations that experience frequent and extended periods of below 42° weather because the concentrations in question freeze at that temperature, this problem does not appear to be insurmountable. On the contrary, DuPont concedes that transloading at temperatures below 42° simply requires access to “steam and/or hot water...to thaw the acid.”<sup>1690</sup> We agree with NS that well-equipped transloading facilities should be able to provide such access and any additional equipment necessary to handle such concentrations. There is also insufficient evidence to conclude that the water white and electrolytic grades of 93% concentration sulfuric acid cannot be transloaded without degrading product quality. As explained by DuPont, transloading “exposes the sulfuric acid to air, which creates more water, which increases corrosion. The corrosion in tank trucks, in turn, contaminates the acid.”<sup>1691</sup> DuPont concedes that “special plastic lining” can function as “a barrier against corrosion”<sup>1692</sup> but then just states that “[v]ery few trucks have these linings,”<sup>1693</sup> without further information about the availability of such linings. We conclude that this bare assertion is insufficient to demonstrate that alternatives involving the transload of water white and electrolytic grades of 93% concentration sulfuric acid are practically infeasible.

DuPont’s customer-specific arguments are similarly unavailing. With regard to lane A-2, DuPont claims that the customer requires [REDACTED]. While the document cited by DuPont as support for this assertion does specify [REDACTED], that document is not signed by either DuPont or the customer and, in any event, expired at the end of 2010. This is insufficient to demonstrate that the customer on lane A-2 requires [REDACTED], thereby rendering [REDACTED] practically infeasible. Furthermore, DuPont’s assertion that the customers on lane B-127 are “high volume purchasers” is contradicted by the fact that historical volumes on this lane are not unusually high and, as NS points out, DuPont has provided no documentation or explanation for its claim that one of the customers on this lane requires railcars for storage. We likewise conclude that DuPont has failed to demonstrate that the customer on lane A-23 requires railcars for storage.<sup>1694</sup> The fact that a

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<sup>1690</sup> DuPont Opening II-B-18.

<sup>1691</sup> DuPont Opening II-B-18.

<sup>1692</sup> DuPont Opening II-B-18 n.23.

<sup>1693</sup> DuPont Opening II-B-18 n.23. DuPont also states that trucks equipped with special plastic lining “are very expensive.” DuPont Opening II-B-18 n.23. The record includes no cost estimates for the lining; accordingly, we cannot factor any such costs into our limit price calculations for the lanes involving the movement of water white and electrolytic grades of 93% concentration sulfuric acid.

<sup>1694</sup> For reasons explained above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at

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customer is a distributor is insufficient, standing alone, to demonstrate that it requires delivery via railcar.

Bayway-Waynesville. DuPont's direct truck alternative for lane A-2 has a price of [REDACTED] while NS's direct truck alternative has a price of [REDACTED].<sup>1695</sup> NS's transload alternative has a price of [REDACTED].<sup>1696</sup> NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Bayway-Waynesville sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Bayway-Waynesville sulfuric acid rate.

Reybold-Baltimore Bayview. The only alternative proposed for lane B-127 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the "alternate" direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1697</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Baltimore Bayview sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Baltimore Bayview sulfuric acid rate.

Reybold-Birmingham. The only alternative proposed for lane B-129 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the "alternate" direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1698</sup> Because it

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issue. Thus, the only alternatives included in our limit price analysis for lanes B-132, B-135, and B-140 are transload options. Because these alternatives would result in railcar delivery to the customer, DuPont's argument that the customers on those lanes require railcars for storage is moot.

<sup>1695</sup> DuPont Opening WP "Direct Truck Costs;" NS Reply Errata WP "Direct Truck Analysis."

<sup>1696</sup> NS Reply WP "Transload Lane Analysis."

<sup>1697</sup> DuPont Opening WP "Alternate Truck Analysis."

<sup>1698</sup> DuPont Opening WP "Alternate Truck Analysis."

is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Birmingham sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Birmingham sulfuric acid rate.

Reybold-Charlotte. The only alternative proposed for lane B-130 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the "alternate" direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1699</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Charlotte sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Charlotte sulfuric acid rate.

Reybold-Chicago. Five of the challenged lanes are governed by the Reybold-Chicago sulfuric acid rate, the first of which is B-128. DuPont's transload alternative for this lane has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED].<sup>1700</sup> NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Chicago sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

Lane B-132 is also governed by the Reybold-Chicago rate. DuPont's transload alternative for this lane has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED].<sup>1701</sup> NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Chicago sulfuric acid rate effectively,

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<sup>1699</sup> DuPont Opening WP "Alternate Truck Analysis."

<sup>1700</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

<sup>1701</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

Lane B-135 is also governed by the Reybold-Chicago rate. DuPont's transload alternative for this lane has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED].<sup>1702</sup> NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Chicago sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

Lane B-137 is also governed by the Reybold-Chicago rate. DuPont's transload alternative for this lane has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED].<sup>1703</sup> NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Chicago sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

Lane B-140 is also governed by the Reybold-Chicago rate. DuPont's transload alternative for this lane has a price of [REDACTED] while NS's transload alternative has a price of [REDACTED].<sup>1704</sup> NS's transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Chicago sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

As demonstrated above, the lowest limit price ratio for each of the lanes governed by the Reybold-Chicago sulfuric acid rate exceeds NS's RSAM figure, and we therefore preliminarily conclude that none of the lowest limit price alternatives proposed for movements governed by

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<sup>1702</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

<sup>1703</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

<sup>1704</sup> DuPont Opening WP "Transload Cost Analysis;" NS Reply WP "Transload Lane Analysis."

the Reybold-Chicago sulfuric acid rate exert competitive pressure sufficient to restrain that rate effectively. Furthermore, none of the lowest limit price alternatives have intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Chicago sulfuric acid rate.

Reybold-Cincinnati. The only alternative proposed for lane B-136 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the “alternate” direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1705</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Reybold-Cincinnati sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Cincinnati sulfuric acid rate.

Reybold-Detroit. DuPont’s direct truck alternative for lane A-23 has a price of [REDACTED] while NS’s direct truck alternative also has a price of [REDACTED].<sup>1706</sup> NS’s transload alternative has a price of [REDACTED].<sup>1707</sup> NS’s transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Reybold-Detroit sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Detroit sulfuric acid rate.

Reybold-Hagerstown. The only alternative proposed for lane B-142 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the “alternate” direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1708</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Reybold-Hagerstown sulfuric acid rate effectively, and conclude that this alternative has no intangible features

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<sup>1705</sup> DuPont Opening WP “Alternate Truck Analysis.”

<sup>1706</sup> DuPont Opening WP “Direct Truck Costs;” NS Reply Errata WP “Direct Truck Analysis.”

<sup>1707</sup> NS Reply WP “Transload Lane Analysis.”

<sup>1708</sup> DuPont Opening WP “Alternate Truck Analysis.”

sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Hagerstown sulfuric acid rate.

Reybold-Morrisville.<sup>1709</sup> DuPont's direct truck alternative for lane A-25 has a price of [REDACTED] while NS's direct truck alternative has a price of [REDACTED].<sup>1710</sup> DuPont's direct truck alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Morrisville sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Morrisville sulfuric acid rate.

Reybold-Toledo. The only alternative proposed for lane B-141 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the "alternate" direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1711</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Reybold-Toledo sulfuric acid rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Reybold-Toledo sulfuric acid rate.

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<sup>1709</sup> For lane A-25 (and many other lanes as well), NS argues that the presence of a point-to-point contract between DuPont and a motor carrier demonstrates that DuPont considers trucking to be a "significant...alternative" to the challenged rail transportation. NS Reply II-B-3 & WP "DuPont Point to Point Contract Rates.xls." Even assuming that such a contract does indicate a belief on DuPont's part that direct trucking constitutes a "significant alternative" for a particular lane, however, this is insufficient to demonstrate that this alternative is effectively constraining the rate governing the challenged rail transportation on that lane. By the same token, the mere fact that DuPont has availed itself of a particular alternative on a given lane in the past does not demonstrate that such an alternative is effectively constraining the rate at issue. As DuPont explains throughout its pleadings, there are a variety of reasons unrelated to transportation economics that it might use certain alternatives (e.g., to serve customers without rail access, to accommodate low volume purchasers, or to expedite emergency shipments). See, e.g., DuPont Opening II-B-11.

<sup>1710</sup> DuPont Opening WP "Direct Truck Costs;" NS Reply Errata WP "Direct Truck Analysis."

<sup>1711</sup> DuPont Opening WP "Alternate Truck Analysis."

## 24. Titanium Dioxide

NS has conceded market dominance over the only movement governed by the Edgemoor-Riverwood titanium dioxide rate, the only movement governed by the Edgemoor-Rouses Point titanium dioxide rate, the only movement governed by the Edgemoor-Streator titanium dioxide rate, and the only movement governed by the Edgemoor-Wabash titanium dioxide rate.<sup>1712</sup>

With regard to an additional three titanium dioxide rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-50, B-55, B-56, B-59, B-60, B-62, and B-67—were we presented with evidence of any alternatives covering only the challenged bottleneck segment.<sup>1713</sup> As a result, we conclude that NS is market dominant with regard to the following three titanium dioxide rates: Edgemoor-Buffalo, Edgemoor-Mechanicsville, and Edgemoor-Meridian.

DuPont challenges an additional 11 movements of titanium dioxide—lane A-12 (governed by the Edgemoor-Chillicothe rate); lane A-13 (governed by the Edgemoor-Mahrt rate); lane B-52 (governed by the Edgemoor-East St. Louis rate); lane B-97 (governed by the Edgemoor-Cincinnati rate); lane B-109 (governed by the Cincinnati-Chapman rate); lane B-111 (governed by the Chattanooga-Morrow rate); lane B-124 (governed by the Chattanooga-McDonough rate); and lanes A-11, B-51, B-58, and B-68 (governed by the Edgemoor-Chicago rate). The parties have introduced evidence of both direct truck and rail/truck transload alternatives for the challenged lanes, but disagree as to whether these alternatives are practically feasible.<sup>1714</sup>

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<sup>1712</sup> NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes A-14, A-15, B-53, and B-64). NS has also conceded market dominance over three of the seven movements governed by the Edgemoor-Chicago titanium dioxide rate. NS Reply Exhibit II-B-1 (indicating that “NS does not contest market dominance” for lanes B-57, B-63, and B-65). NS contests market dominance for the other four movements governed by this rate (lanes A-11, B-51, B-58, and B-68), which will be discussed further below.

<sup>1713</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-146 to II-B-161.

<sup>1714</sup> DuPont Opening II-B-146 to II-B-161; NS Reply II-B-128 to II-B-142; DuPont Rebuttal II-B-156 to II-B-199. DuPont on opening discusses why barge alternatives do not represent effective competition for these movements. NS does not dispute this point. See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”).

Furthermore, for reasons described above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck  
(continued . . . )



On opening, DuPont concedes that trucking and transloading titanium dioxide is practically feasible as a general matter,<sup>1715</sup> but argues that they are not practically feasible alternatives for certain of the challenged movements for various reasons. DuPont first argues that direct trucking from the Edgemoor facility “is not practical due to the additional storage needed to replace railcars, increased risk of spills, and special equipment requirements.”<sup>1716</sup> If it were to switch to direct trucking on the challenged lanes, DuPont would strand a sizeable portion of its fleet of 397 dedicated titanium dioxide railcars, and would incur significant infrastructure costs at Edgemoor to increase storage tank capacity and add a truck scale and loading spot.<sup>1717</sup> Furthermore, a switch to direct trucking would increase the risk of costly spills given the greater number of trucks required to carry the same volume of titanium dioxide (thereby increasing “the opportunity for a spill during loading and unloading”).<sup>1718</sup> DuPont claims that its ability to truck titanium dioxide is constrained by the fact that it must be shipped in stainless steel trucks without rubber lining to avoid rust contamination and discoloration.<sup>1719</sup> DuPont also asserts that it only uses trucks to ship titanium dioxide if a customer is not rail-served, purchases only small volumes, or requires expedited shipment.<sup>1720</sup> DuPont next argues that in addition to significant infrastructure investment costs, a switch to transloading would involve “several costly logistical

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( . . . continued)

segment at issue—e.g., NS’s proposed direct truck alternative for lane B-97 involving truck transportation between Edgemoor and New Johnsonville. DuPont has proposed an “alternate” direct truck option for certain lanes, including lane B-97. DuPont Opening I-16 n.20 & WP “Alternate Truck Analysis.” While these options are more properly characterized as rail/truck transload alternatives, and will be costed as such, for ease of reference we will refer to them as “alternate” direct truck alternatives.

<sup>1715</sup> See DuPont Opening II-B-147 to II-B-150 (arguing only that “direct trucking is not economically feasible” for the issue lanes) (emphasis added); DuPont Opening II-B-150 to II-B-152 (explaining that “DuPont does not transload titanium dioxide from trucks into railcars” and that doing so would be “unorthodox,” but conceding that truck-to-rail transloading is “possible” from a practical standpoint).

<sup>1716</sup> DuPont Opening II-B-149.

<sup>1717</sup> DuPont Opening II-B-149.

<sup>1718</sup> DuPont Opening II-B-150. Although titanium dioxide is not a hazardous material, DuPont argues that it is difficult and costly to clean because full-scale excavation may be required if titanium dioxide slurry seeps into the ground. DuPont Opening II-B-150.

<sup>1719</sup> DuPont Opening II-B-150.

<sup>1720</sup> DuPont Opening II-B-150.

hurdles” such as additional washing fees and maintenance costs.<sup>1721</sup> Finally, DuPont argues that the customers on lanes [REDACTED] and [REDACTED] require delivery via railcar in their contracts; that the customer on lane [REDACTED] requires railcar delivery in its contract and has special quality requirements that cannot be satisfied through truck deliveries; that the customer on lane A-12 has transitioned away from trucks to railcars in an effort to simplify its supply chain through increased shipment size and lower frequency shipments; that the titanium dioxide shipped between DuPont facilities on lane B-97 is only semi-finished and therefore difficult to truck; and that the customer on lane B-109 prefers railcars.<sup>1722</sup>

On reply, NS responds to DuPont’s arguments generally by asserting that DuPont’s own conduct “shows that it has the capacity and willingness to use trucking and transloading as an alternative to rail shipments.”<sup>1723</sup> NS further argues that there is no merit to DuPont’s contention that increasing its reliance on trucks would strand its titanium dioxide railcar fleet; DuPont could use at least some of that fleet to avail itself of NS’s proposed transload alternatives and could repurpose the rest to transport the many other commodities that DuPont transports.<sup>1724</sup> With regard to lane [REDACTED], NS argues that DuPont’s claim that the customer has special quality requirements that cannot be satisfied through truck deliveries is belied by the fact that the customer historically has received so many shipments via truck.<sup>1725</sup> With regard to lane A-12, NS points out that trucking continues to constitute a significant portion of the volume on this lane.<sup>1726</sup> With regard to lane B-97, NS contends that the high volume of truck shipments between DuPont’s two facilities during a one-week period in 2010 contradicts DuPont’s objection that the slurry product on this lane is difficult to truck.<sup>1727</sup> With regard to lane B-109, NS asserts that DuPont has provided no evidence that the customer prefers railcars, and points out that the actual shipment history undermines any claim to such a preference.<sup>1728</sup>

On rebuttal, DuPont argues that NS has failed to account for a variety of costs related to NS’s proposed alternatives.<sup>1729</sup> DuPont further argues that converting from railcar storage to storage in fixed storage tanks at Edgemoor is impractical because DuPont produces multiple

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<sup>1721</sup> DuPont Opening II-B-151.

<sup>1722</sup> DuPont Opening II-B-159 to II-B-160.

<sup>1723</sup> NS Reply II-B-129.

<sup>1724</sup> NS Reply II-B-130.

<sup>1725</sup> NS Reply II-B-133 n.143.

<sup>1726</sup> NS Reply II-B-131.

<sup>1727</sup> NS Reply II-B-139 & n.146.

<sup>1728</sup> NS Reply II-B-140.

<sup>1729</sup> DuPont Rebuttal II-B-159 to II-B-163.

grades of titanium dioxide which cannot be mixed together without destroying their individual properties.<sup>1730</sup> With regard to the issue of stranding DuPont's titanium dioxide railcar fleet, DuPont claims that it cannot avoid this outcome simply by repurposing some of those railcars, that NS has not provided any evidence to support the assumption that DuPont's needs for general purpose railcars are not currently being satisfied, and that increased reliance on trucks would also involve the "stranding" of a variety of railcar-specific infrastructure investments made by DuPont.<sup>1731</sup> DuPont generally reiterates its lane-specific arguments, and further argues that the shipment history cited by NS is disingenuous at best.<sup>1732</sup>

We need not reach the DuPont arguments that relate to economic rather than practical infeasibility. Were we to conclude that any of the rates governing the challenged movements of titanium dioxide were otherwise being effectively constrained by competitive alternatives, we would need to consider DuPont's various cost-related arguments and NS's related counter-arguments. As we discuss below, however, we conclude that the rates governing the movements at issue are not being effectively constrained even without including any potential additional costs that might be required. Thus, we need not address the parties' cost-related arguments.

With regard to DuPont's first argument relating to practical infeasibility, we are not convinced that a concern over potential "stranding" renders direct trucking and/or transloading practically infeasible. We do not believe that a switch to direct trucking or transloading would result in the "stranding" of a sizeable portion of DuPont's titanium dioxide railcar fleet (or the associated infrastructure), because DuPont would still require a large percentage of this fleet (and its associated infrastructure) to accommodate shipments of titanium dioxide that are no longer at issue in the market dominance portion of this case.<sup>1733</sup> Still more of the fleet (and its associated infrastructure) would be required if DuPont were to utilize any of the proffered transloading alternatives described below in the lane-specific analyses. Still more of the fleet (though not the infrastructure) likely could be utilized at DuPont's other titanium dioxide production

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<sup>1730</sup> DuPont Rebuttal II-B-163. On opening, DuPont claimed only that converting from railcar storage to on-site storage tanks at Edgemoor would involve significant infrastructure costs. See DuPont Opening II-B-149. Because DuPont raises it for the first time on rebuttal, we decline to consider the argument that converting to on-site storage tanks is impractical due to product integrity concerns.

<sup>1731</sup> DuPont Rebuttal II-B-163 to II-B-165.

<sup>1732</sup> See generally DuPont Rebuttal II-B-168 to II-B-199.

<sup>1733</sup> This includes traffic on the lanes over which NS has conceded market dominance and the lanes for which we were presented with no evidence of alternatives covering only the challenged bottleneck segment, which comprise 14 of the 25 titanium dioxide lanes initially challenged by DuPont.

facilities.<sup>1734</sup> In short, we do not believe that DuPont's concern in this regard renders either direct trucking or transloading infeasible from a practical standpoint.

With regard to DuPont's argument that a switch to direct trucking would increase the risk of costly titanium dioxide spills, we do not disagree with DuPont's basic point. While such a switch indeed may increase the risk of spills given the greater number of loading and unloading events, based on the record evidence in this case the Board finds that this increased risk does not render direct trucking or transloading of titanium dioxide infeasible from a practical standpoint.<sup>1735</sup> Furthermore, we conclude that DuPont's history of substantial titanium dioxide truck shipments undermines its argument that special equipment requirements constrain its ability to truck that commodity.<sup>1736</sup> And DuPont's claim that it only uses trucks to ship titanium dioxide if a customer is not rail-served, purchases only small volumes, or requires expedited shipment ultimately is not relevant to the question of whether direct trucking or transloading is practically feasible. With regard to lane [REDACTED], while the contract language specifically

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<sup>1734</sup> To the extent that a small portion of DuPont's titanium dioxide railcar fleet (and infrastructure) might truly be "stranded" after taking the above factors into account—even assuming that portion of the fleet could not otherwise be repurposed by DuPont to transport other commodities—such "stranding" would simply be considered a sunk cost. For the reasons stated above, we need not address this cost-related issue here.

<sup>1735</sup> DuPont also makes the broader point that trucking and transloading hazardous materials (TIH materials in particular) is undesirable as a matter of public policy given that such modes increase the potential for a release of such materials as a result of (1) the greater number of loading and unloading events and (2) the increased likelihood of accidents on roads and highways. DuPont Opening I-8 to I-12. NS does not disagree, but claims that DuPont is overstating its argument. NS Reply II-B-30. An increased potential for release certainly could render non-rail alternatives practically infeasible for certain commodities (such as TIH materials). However, no such commodity is still at issue in this case with regard to market dominance. While a slightly increased potential for release of other commodities (such as non-TIH hazardous materials) may not always rise to the level to make a transportation alternative infeasible, the relative safety of alternatives to rail transportation of such materials is a valid factor when evaluating market dominance. See *CF Indus., Inc. v. STB*, 255 F.3d 816, 822 (D.C. Cir. 2001) (citing *Mkt. Dominance II*, 365 I.C.C. at 119 n.5). It is appropriate for the Board to include this factor in our evaluation of intangible features. See *supra* n.1611 (concluding that rail provides an intangible benefit vis-à-vis trucking in the context of muriatic acid transportation).

<sup>1736</sup> Furthermore, to support this argument, DuPont indicates only that on one occasion it had difficulty finding enough specially-equipped stainless steel trucks to accommodate its needs at that time. See DuPont Rebuttal II-B-161 to II-B-162. This single example is insufficient to demonstrate that such trucks are not generally available, and that direct trucking and/or transloading is practically infeasible as a result.

anticipates delivery by railcar, such delivery is not absolutely required.<sup>1737</sup> With regard to lane [REDACTED], the contract language specifically anticipates delivery by truck.<sup>1738</sup> With regard to lane [REDACTED], the contract language specifically anticipates delivery by truck, and the contract expired at the end of 2010 in any event.<sup>1739</sup> We conclude that DuPont has failed to provide evidence to support its remaining customer-specific arguments.<sup>1740</sup>

Chattanooga-McDonough. The only alternative proposed for lane B-124 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the “alternate” direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1741</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Chattanooga-McDonough titanium dioxide rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Chattanooga-McDonough titanium dioxide rate.

Chattanooga-Morrow. The only alternative proposed for lane B-111 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the “alternate” direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1742</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Chattanooga-Morrow titanium dioxide rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Chattanooga-Morrow titanium dioxide rate.

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<sup>1737</sup> See M&G, slip op. at 28. Furthermore, we do not find the contract language particularly relevant for practical feasibility purposes given that the [REDACTED].

<sup>1738</sup> See M&G, slip op. at 28.

<sup>1739</sup> See M&G, slip op. at 28.

<sup>1740</sup> DuPont further claims that the titanium dioxide shipped between DuPont facilities on lane B-97 is only semi-finished and therefore difficult to truck. Simply because something is “difficult to truck,” however, does not render its transportation via truck practically infeasible.

<sup>1741</sup> DuPont Opening WP “Alternate Truck Analysis.”

<sup>1742</sup> DuPont Opening WP “Alternate Truck Analysis.”

Cincinnati-Chapman. The only alternative proposed for lane B-109 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the “alternate” direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1743</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Cincinnati-Chapman titanium dioxide rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Cincinnati-Chapman titanium dioxide rate.

Edgemoor-Chicago. Four of the challenged lanes are governed by the Edgemoor-Chicago titanium dioxide rate, the first of which is A-11. The only alternative proposed for this lane that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1744</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Edgemoor-Chicago titanium dioxide rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion, particularly in light of the [REDACTED] disparity between the lowest limit price R/VC ratio and NS’s RSAM figure.

Lane B-51 is also governed by the Edgemoor-Chicago rate. On opening, DuPont discusses why direct truck, transload, and barge alternatives do not represent effective competition for this lane.<sup>1745</sup> NS does not dispute this point with respect to transload and barge alternatives,<sup>1746</sup> but argues that direct trucking is an effective competitive alternative for this movement.<sup>1747</sup> However, as explained above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue. The direct truck alternative proposed by NS for lane B-51 falls into this

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<sup>1743</sup> DuPont Opening WP “Alternate Truck Analysis.”

<sup>1744</sup> DuPont Opening WP “Direct Truck Costs.”

<sup>1745</sup> DuPont Opening II-B-146 to II-B-161.

<sup>1746</sup> See NS Reply II-B-1 (indicating that “NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements”) & Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lane B-51).

<sup>1747</sup> NS Reply II-B-133.

category. Because we exclude consideration of NS's proposed direct truck alternative, and because NS does not dispute DuPont's contention that other alternatives do not represent effective competition for this lane, we conclude that no alternatives for lane B-51 exert competitive pressure sufficient to restrain NS's Edgemoor-Chicago titanium dioxide rate effectively.

Lane B-58 is also governed by the Edgemoor-Chicago rate. The only alternative proposed for this lane that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the transload option proposed by DuPont, which has a price of [REDACTED].<sup>1748</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS's 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Edgemoor-Chicago titanium dioxide rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion.

Lane B-68 is also governed by the Edgemoor-Chicago rate. On opening, DuPont discusses why direct truck, transload, and barge alternatives do not represent effective competition for this lane.<sup>1749</sup> NS does not dispute this point with respect to transload and barge alternatives,<sup>1750</sup> but argues that direct trucking is an effective competitive alternative for this movement.<sup>1751</sup> However, as explained above, we exclude consideration of any alternatives that do not replicate the particular origin and destination of the specific challenged bottleneck segment at issue. The direct truck alternative proposed by NS for lane B-68 falls into this category. Because we exclude consideration of NS's proposed direct truck alternative, and because NS does not dispute DuPont's contention that other alternatives do not represent effective competition for this lane, we conclude that no alternatives for lane B-68 exert competitive pressure sufficient to restrain NS's Edgemoor-Chicago titanium dioxide rate effectively.

As demonstrated above, for each of the lanes contested by NS that are governed by the Edgemoor-Chicago titanium dioxide rate, either (1) there is no dispute that the only practically

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<sup>1748</sup> DuPont Opening WP "Transload Cost Analysis."

<sup>1749</sup> DuPont Opening II-B-146 to II-B-161.

<sup>1750</sup> See NS Reply II-B-1 (indicating that "NS does not contend that barge transportation is an effective competitive alternative for any of the issue movements") & Exhibit II-B-1 (indicating that NS does not contend that transloading is an effective competitive alternative for lane B-68).

<sup>1751</sup> NS Reply II-B-138.

feasible alternatives do not represent effective competition, or (2) the lowest limit price ratio [REDACTED] exceeds NS's RSAM figure. We therefore preliminarily conclude that none of the lowest limit price alternatives proposed for movements governed by the Edgemoor-Chicago titanium dioxide rate exert competitive pressure sufficient to restrain that rate effectively. Furthermore, none of the lowest limit price alternatives have intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Edgemoor-Chicago titanium dioxide rate.

Edgemoor-Chillicothe. DuPont's direct truck alternative for lane A-12 has a price of [REDACTED] while NS's direct truck alternative has a price of [REDACTED].<sup>1752</sup> NS's direct truck alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is above NS's 275% RSAM figure.<sup>1753</sup> We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Edgemoor-Chillicothe titanium dioxide rate effectively and, even though this alternative likely has at least some of the same intangible benefits associated with any direct truck option, we conclude that such benefits are insufficient to call into question our preliminary conclusion.<sup>1754</sup> As a result, we conclude that NS is market dominant with regard to the Edgemoor-Chillicothe titanium dioxide rate.

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<sup>1752</sup> DuPont Opening WP "Direct Truck Costs;" NS Reply Errata WP "Direct Truck Analysis."

<sup>1753</sup> DuPont disputes NS's calculation of the price of the direct truck alternative proffered by NS for this lane. DuPont Rebuttal II-B-170. We need not address this argument, however, because the price presented by NS for this alternative results in a lowest limit price R/VC ratio that is already above RSAM (and because there are no intangible features sufficient to call into question the preliminary conclusion with respect to market dominance for the rate governing this movement). Any increase in the estimated price of the alternative would simply increase the lowest limit price R/VC ratio, and therefore would have no impact with respect to our market dominance conclusion.

<sup>1754</sup> Again, under certain circumstances direct trucking alternatives can provide intangible benefits vis-à-vis the challenged rail transportation (e.g., increased reliability or the ability to respond more quickly to customer delivery requests) sufficient to call into question a preliminary conclusion that such alternatives do not exert competitive pressure sufficient to restrain rates effectively. See M&G, slip op. at 59 (concluding that intangible features of direct trucking alternative were sufficient to call into question a preliminary conclusion of market dominance with regard to the Apple Grove-Clifton Forge rate). However, given the disparity between the lowest limit price R/VC ratio and the carrier's RSAM figure, we conclude that such benefits are insufficient to call into question our preliminary conclusion with regard to the Edgemoor-Chillicothe titanium dioxide rate.



Edgemoor-Cincinnati. The only alternative proposed for lane B-97 that replicates the particular origin and destination of the specific challenged bottleneck segment at issue is the “alternate” direct truck option proposed by DuPont, which has a price of [REDACTED].<sup>1755</sup> Because it is the only one that is practically feasible, this alternative generates the lowest limit price. The lowest limit price R/VC ratio for this movement thus is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure. We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Edgemoor-Cincinnati titanium dioxide rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Cincinnati-Chapman titanium dioxide rate.

Edgemoor-East St. Louis. DuPont’s transload alternative for lane B-52 has a price of [REDACTED] while NS’s transload alternative has a price of [REDACTED].<sup>1756</sup> NS’s transload alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is [REDACTED], which is [REDACTED] above NS’s 275% RSAM figure.<sup>1757</sup> We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS’s Edgemoor-East St. Louis titanium dioxide rate effectively, and conclude that this alternative has no intangible features sufficient to call into question our preliminary conclusion. As a result, we conclude that NS is market dominant with regard to the Edgemoor-East St. Louis titanium dioxide rate.

Edgemoor-Mahrt. DuPont’s direct truck alternative for lane A-13 has a price of [REDACTED] while NS’s direct truck alternative has a price of [REDACTED].<sup>1758</sup> NS’s direct truck alternative generates the lowest limit price. Thus, the lowest limit price R/VC ratio for this movement is

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<sup>1755</sup> DuPont Opening WP “Alternate Truck Analysis.”

<sup>1756</sup> DuPont Opening WP “Transload Cost Analysis;” NS Reply WP “Transload Lane Analysis.”

<sup>1757</sup> DuPont disputes NS’s calculation of the price of the transload alternative proffered by NS for this lane. DuPont Rebuttal II-B-177. We need not address this argument, however, because the price presented by NS for this alternative results in a lowest limit price R/VC ratio that is already above RSAM (and because there are no intangible features sufficient to call into question the preliminary conclusion with respect to market dominance for the rate governing this movement). Any increase in the estimated price of the alternative would simply increase the lowest limit price R/VC ratio, and therefore would have no impact with respect to our market dominance conclusion.

<sup>1758</sup> DuPont Opening WP “Direct Truck Costs;” NS Reply Errata WP “Direct Truck Analysis.”

██████, which is ██████ above NS's 275% RSAM figure.<sup>1759</sup> We therefore preliminarily conclude that the alternative with the lowest limit price does not exert competitive pressure sufficient to restrain NS's Edgemoor-Mahrt titanium dioxide rate effectively and, even though this alternative likely has at least some of the same intangible benefits associated with any direct truck option, we conclude that such benefits are insufficient to call into question our preliminary conclusion.<sup>1760</sup> As a result, we conclude that NS is market dominant with regard to the Edgemoor-Mahrt titanium dioxide rate.

## **25. Titanium Tetrachloride**

NS has conceded market dominance over the one challenged titanium tetrachloride movement (governed by the Edgemoor-East St. Louis titanium tetrachloride rate).<sup>1761</sup>

## **26. Zircon Sand**

With regard to the two zircon sand rates challenged by DuPont, we find that no effective intermodal or intramodal competition exists because for none of the movements governed by these rates—lanes B-116 and B-117—were we presented with evidence of any alternatives

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<sup>1759</sup> DuPont disputes NS's calculation of the price of the direct truck alternative proffered by NS for this lane. DuPont Rebuttal II-B-171 to II-B-172. We need not address this argument, however, because the price presented by NS for this alternative results in a lowest limit price R/VC ratio that is already above RSAM (and because there are no intangible features sufficient to call into question the preliminary conclusion with respect to market dominance for the rate governing this movement). Any increase in the estimated price of the alternative would simply increase the lowest limit price R/VC ratio, and therefore would have no impact with respect to our market dominance conclusion.

<sup>1760</sup> Again, under certain circumstances direct trucking alternatives can provide intangible benefits vis-à-vis the challenged rail transportation (e.g., increased reliability or the ability to respond more quickly to customer delivery requests) sufficient to call into question a preliminary conclusion that such alternatives do not exert competitive pressure sufficient to restrain rates effectively. See M&G, slip op. at 59 (concluding that intangible features of direct trucking alternative were sufficient to call into question a preliminary conclusion of market dominance with regard to the Apple Grove-Clifton Forge rate). However, given the ██████ disparity between the lowest limit price R/VC ratio and the carrier's RSAM figure, we conclude that such benefits are insufficient to call into question our preliminary conclusion with regard to the Edgemoor-Mahrt titanium dioxide rate.

<sup>1761</sup> NS Reply Exhibit II-B-1 (indicating that "NS does not contest market dominance" for lane B-54).

covering only the challenged bottleneck segment.<sup>1762</sup> As a result, we conclude that NS is market dominant with regard to the Decatur-Huntsville (NS cars) and Decatur-Huntsville (private cars) zircon sand rates.

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<sup>1762</sup> On opening, DuPont argues generally that the rates governing these movements face no competition sufficient to restrain the rates effectively. DuPont Opening II-B-169 to II-B-172.