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May 27, 2003

via Hand Delivery

Hon. Vernon A. Williams
Secretary
Surface Transportation Board
1925 K Street, N.W.
Washington, D.C. 20423

PUBLIC VERSION

**Re: *Arizona Electric Power Cooperative, Inc. v. The Burlington
Northern and Santa Fe Railway Company and Union Pacific
Railroad Company, Docket No. 42058***

Dear Secretary Williams:

Enclosed for filing in the above-captioned matter is the Joint Variable Cost Reply Evidence of The Burlington Northern and Santa Fe Railway Company ("BNSF") and Union Pacific Railroad Company ("UP"). This filing consists of the original and 10 copies of a one volume Joint Narrative and Exhibits. In addition, BNSF and UP are filing three copies of their Joint Narrative and Exhibits on compact disc.

These materials constitute the public version of BNSF and UP's Joint Variable Cost Reply Evidence.

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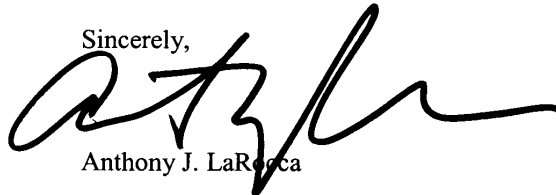
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Hon. Vernon A. Williams
May 27, 2003
Page 2

Please date stamp the extra copy of this cover letter and return it to the messenger who delivered this filing.

Sincerely,

A handwritten signature in black ink, appearing to read 'Anthony J. LaRocca', written over the printed name.

Anthony J. LaRocca

Enclosures

cc: Counsel for Complainant

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**BEFORE THE
SURFACE TRANSPORTATION BOARD**

STB Docket No. 42058



ARIZONA ELECTRIC POWER COOPERATIVE, INC.
v.
**THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY AND UNION
PACIFIC RAILROAD COMPANY**

**Joint Variable Cost Reply Evidence of
The Burlington Northern and Santa Fe Railway Company
and
Union Pacific Railroad Company**

Volume I of I

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NARRATIVE AND EXHIBITS

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May 27, 2003

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**I. Counsel's Argument and
Summary of Evidence**

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE

Defendants The Burlington Northern and Santa Fe Railway Company ("BNSF") and Union Pacific Railroad Company ("UP"), (jointly, the "Railroads") submit this joint variable cost reply evidence and argument in the rate reasonableness proceeding *Arizona Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company*, STB Docket No. 42058.

In this joint filing, the Railroads reply to the opening variable cost evidence submitted by Arizona Electric Power Cooperative, Inc. ("AEPCO"). This Reply shows how AEPCO significantly understated the Railroads' variable costs of providing service for AEPCO coal trains moving from Lee Ranch Mine ("Lee Ranch") and McKinley Mine ("McKinley") in New Mexico to the Apache Generating Station in Cochise, Arizona ("Apache Station") by omitting certain costs entirely and applying unwarranted adjustments to other costs. It explains AEPCO's errors and why the Board should adopt the Railroads' evidence.

Tables BNSF/UP I-1 and BNSF/UP I-2 compare the variable cost per ton and the revenue-to-variable cost ("R/VC") ratios calculated in the Railroads' reply evidence with the calculations in AEPCO's opening evidence. The comparisons reveal significant differences in the parties' cost calculations.

Table BNSF/UP I-1
Rates, Variable Costs Per Net Ton, and R/VC Ratios
For Shipments from Lee Ranch to Apache Station

Period	Rate	AEP CO Opening		Railroads Reply	
		Variable Cost	R/VC Ratio	Variable Cost	R/VC Ratio
98-Ton Rate					
1Q01	\$9.35	\$4.26	219%	\$5.28	177%
2Q01	\$9.35	\$3.85	243%	\$4.79	195%
3Q01	\$9.35	\$3.97	236%	\$5.14	182%
4Q01	\$9.35	\$3.44	259%	\$5.26	178%
1Q02	\$9.54	\$3.12	292%	\$4.94	193%
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3Q02	\$9.54	\$3.32	274%	\$4.93	194%
4Q02	\$9.54	No Shipments Under Challenged Rate			
1Q03	\$9.73	No Shipments Under Challenged Rate			
115-Ton Rate					
1Q01 – 4Q01	\$9.05	No Shipments Under Challenged Rate			
1Q02 – 2Q02	\$9.23	No Shipments Under Challenged Rate			
3Q02	\$9.23	\$2.84	311%	\$4.37	211%
4Q02	\$9.23	\$2.92	303%	\$4.37	211%
1Q03	\$9.41	\$2.95	300% ¹	\$4.52	208%

Table BNSF/UP I-2
Rates, Variable Costs Per Net Ton, and R/VC Ratios
For Shipments from McKinley to Apache Station

Period	Rate	AEPCO Opening		Railroads Reply	
		Variable Cost	R/VC Ratio	Variable Cost	R/VC Ratio
98-Ton Rate					
1Q01 – 4Q01	\$9.35	No Shipments Under Challenged Rate			
1Q02	\$9.54	No Shipments Under Challenged Rate			
2Q02	\$9.54	\$3.87	235%	\$5.85 ²	163%
3Q02	\$9.54	\$3.69	246%	\$5.50	173%
4Q02	\$9.54	No Shipments Under Challenged Rate			
1Q03	\$9.73	No Shipments Under Challenged Rate			
108-Ton Rate					
1Q01 – 4Q01	\$9.05	No Shipments Under Challenged Rate			
1Q02 – 2Q02	\$9.23	No Shipments Under Challenged Rate			
3Q02	\$9.23	\$3.34	264%	\$4.78	193%
4Q02	\$9.23	\$3.59	246%	\$5.17	178%
1Q03	\$9.41	\$3.54	249% ¹	\$5.20	181%

¹ AEPCO's R/VC calculations for the First Quarter 2003 are based on the year-2002 rate of \$9.23 instead of the correct rate of \$9.41.

² One movement originated from McKinley in Second Quarter 2002 but did not terminate at Apache Station until Third Quarter 2002. On opening, AEPCO included this movement in its Second Quarter 2002 costs, but the Railroads did not. In order to eliminate one difference in the parties' calculations, the Railroads adopt AEPCO's approach and include that movement in the Railroads' costs for Second Quarter 2002.

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The Railroads have identified a number of errors in AEPCO's variable cost calculations, including the following major errors:

- AEPCO treated handling payments to Southwestern Railroad ("SWRR") for the portion of its movements between Rincon, New Mexico, and Deming, New Mexico, after September 7, 2001, as revenue deductions rather than as variable costs, in contravention of long-settled precedent.
- AEPCO calculated incomplete cycle times and mileages that incorrectly and inexplicably omitted locomotive ownership, maintenance, and fuel costs incurred by BNSF while AEPCO trains are handled by SWRR.
- AEPCO improperly adjusted the Railroads' system-average fuel costs based on evidence that is almost two decades old and that is inapplicable to today's movements.
- AEPCO improperly relied upon BNSF agreements with locomotive manufacturers as the basis for locomotive spare margin requirements.
- AEPCO erred in attempting to adjust UP's system-average costs related to road property ownership because it used data that provide an incomplete and distorted measure of UP's actual investment in road property used to serve AEPCO's traffic.
- AEPCO improperly adjusted system-average locomotive maintenance costs based on BNSF and UP records that do not reflect the full maintenance costs of the locomotives used in AEPCO service.
- AEPCO arbitrarily excluded certain wages paid to crews operating AEPCO trains.
- AEPCO understated switching costs associated with its trains.
- AEPCO calculated maintenance-of-way costs using the SFGT formula rejected by the Board in *TMPA*.³

These erroneous approaches, some which have been explicitly rejected by the Board in other cases, resulted in a significant understatement of the variable costs of AEPCO movements for a number of cost categories. The Railroads discuss these major errors, as well as

³ See *Texas Municipal Power Agency v. The Burlington Northern & Santa Fe Ry.* STB Docket No. 42056 (STB served Mar. 24, 2003) ("*TMPA*") at 54-56.

PUBLIC VERSION

other significant flaws in AEPCO's cost calculations, in section II. The cumulative effect of these errors was to understate variable costs by more than one-third.

Before presenting their reply market dominance evidence, the Railroads note briefly the difficulties they faced in responding to AEPCO's opening evidence on variable costs. AEPCO's narrative did not reveal, much less justify, many of the significant omissions and exclusions of costs noted above. For example, the narrative did not mention that AEPCO's cycle time calculations, and thus its calculations of locomotive capital costs, omitted time for the movement of trains between Rincon and Deming, New Mexico, and it never explained this omission. *See* AEPCO Nar. at II-A-44. AEPCO's workpapers show that time was omitted, but they do not explain the omission.⁴ AEPCO failed to provide an explanation even after the Railroads specifically asked for one.⁵

As another example, AEPCO never explained why its crew wage calculations excluded certain wages paid to UP crew members. Again, AEPCO's narrative did not mention this exclusion. *See* AEPCO Nar. at II-A-45 to 46. Its workpapers suggest that some wages represented "double counts," but they provide no support for that conclusion.⁶ AEPCO failed to offer an explanation even after the Railroads specifically asked for one.⁷

⁴ AEPCO electronic workpaper "bnsf train movement summary T&O.123."

⁵ When the Railroads asked for workpapers supporting the omission of cycle time for the movement of AEPCO trains between Rincon and Deming, AEPCO replied:

The time between Rincon and Deming, New Mexico after the second quarter of 2001 occurs over the Southwestern Railroad, not BNSF.

BNSF/UP.RP.WP.II-A-047.

⁶ AEPCO electronic workpaper "Wage by train – AEPCO UP.xls" at worksheets "2001 Train Count" and "2002 Train Count."

⁷ When the Railroads asked for workpapers supporting the claim that there was a "double count," AEPCO unhelpfully responded:
(continued...)

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AEPCO's narrative also contained inaccuracies that made it unnecessarily difficult to understand its costing methodology. For example, AEPCO claimed that it developed locomotive consist sizes using BNSF records. *See* AEPCO Nar. at II-A-15. However, AEPCO's exhibits and workpapers show that this statistic was developed using both UP and BNSF records. *See, e.g.*, AEPCO Exh. II-A-2.⁸ AEPCO asserted that car lease rental costs were "not applicable." *See* AEPCO Nar. at II-A-13. However, AEPCO's exhibits and workpapers show that AEPCO actually did develop car lease rental costs for carrier-owned cars, although, as the Railroads explain below, it did so incorrectly. *See, e.g.*, AEPCO Exh. II-A-12 at 1, line 16.⁹ AEPCO asserted that it developed the number of cars per train and lading weights per car using freight bills. *See* AEPCO Nar. at II-A-14 (cars per train); *id.* at II-A-13 (lading weight per car). However, AEPCO actually developed these statistics using reports prepared at the origin mines.¹⁰

These and other deficiencies in AEPCO's opening evidence significantly increased the Railroads' costs of preparing this Reply. Despite these obstacles, the Railroads believe that they have identified the reasons why AEPCO's cost estimates significantly understated the Railroads' cost of providing service between the New Mexico origins and Apache Station.

All data used to determine the 'double count of engineers – 2/crew district' appears on the worksheets '2001 Train Count' and '2002 Train Count.' AEPCO has no additional workpapers.

BNSF/UP.RP.WP.II-A-049.

⁸ AEPCO electronic workpaper "T&O Summary.123."

⁹ AEPCO electronic workpapers "BNSF Car Cap Inputs.123" and "UP Car Cap Inputs.123."

¹⁰ AEPCO electronic workpaper "T&O Data Provided By AEPCO.123."

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The Railroads' joint variable cost reply evidence is supported by the testimony of witnesses: Mr. Richard C. Ellis, Assistant Vice President, Unit Train Operations for BNSF; Mr. Dale W. Salzman, Director-Transportation Research for UP; Mr. Paul J. Bendon, Jr., Director-Property Accounting for UP; Mr. Mark J. Gallagher, Director-Budgets, Administration, and Planning for UP; and Mr. Benton V. Fisher of FTI Consulting, Inc. The witnesses' qualifications and a description of the portion of this Reply that each witness sponsors are contained in section IV below.

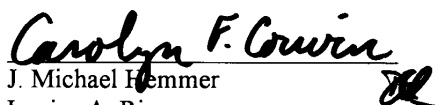
Section II.A.1 of this Reply describes the differences between the parties' variable cost calculations with respect to basic traffic and operating characteristics and costing methodologies. Section II.A.1.a addresses fundamental differences in the parties' cost estimating procedures that affect almost all of the individual costing calculations. These differences involve the development of URCS costs for BNSF and UP, the development of movement characteristics for periods in which data are incomplete, and the treatment of the car handling payments made by BNSF to SWRR. Section II.A.1.b addresses basic differences in the parties' development of traffic and operating characteristics of AEPCO movements. The Railroads have adopted AEPCO's calculations where possible in order to minimize the number of issues in dispute, but in many instances, AEPCO's errors could not be accepted. Section II.A.1.c addresses differences in the parties' costing methodologies. As the Railroads show, AEPCO frequently departed from established costing conventions and adjusted BNSF and UP costs without explanation.

Section II.A.2 of this Reply presents the Railroads' calculation of the variable costs and R/VC ratios of AEPCO service after any adjustments necessary to respond to AEPCO's evidence, as described in section II.A.1 of this Reply. These calculations show that

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AEPCO has significantly understated the Railroads' variable costs of providing service to Apache Station.

Respectfully submitted,

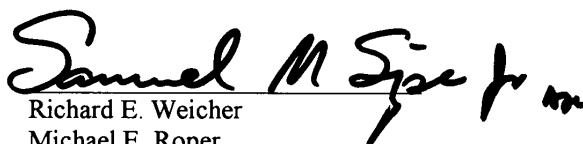


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CERTIFICATE OF SERVICE

I hereby certify that on May 27, 2003, I caused a copy of the foregoing Joint Variable Cost Reply Evidence of The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company to be served by hand upon the following counsel for Arizona Electric Power Cooperative, Inc.

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II. Market Dominance

II. MARKET DOMINANCE

A. QUANTITATIVE EVIDENCE

In this section, the Railroads reply to AEPCO's opening variable cost evidence and explain why the Board should adopt the Railroads' cost evidence. The Railroads show that AEPCO significantly understated the variable costs of providing service to Apache Station by omitting certain costs entirely and applying unwarranted adjustments to other costs. The Railroads' reply evidence on variable costs is principally sponsored by Benton V. Fisher, who was the main sponsor of the Railroads' cost evidence on opening.¹

1. Variable Costs

The Railroads' opening evidence addressed the variable cost of service for moving coal between New Mexico mine origins and Apache Station from the First Quarter 2001 ("1Q01") through Second Quarter 2002 ("2Q02"), the period for which cost information was made available in discovery. All of the movements completed in that period moved under rates for traffic originated from Lee Ranch Mine in shipper-provided cars with a minimum average lading weight of 98 tons per carload (the "Lee Ranch 98-ton rate"). In order to calculate the Railroads' variable costs, Mr. Fisher relied on BNSF and UP 2001 Uniform Rail Costing System ("URCS") unit costs and, where appropriate, incorporated the results of movement-specific studies to adjust or replace URCS system averages.

¹ Portions of the Railroads' reply evidence are sponsored by Mr. Richard C. Ellis, Assistant Vice President, Unit Train Operations for BNSF; Mr. Dale W. Salzman, Director-Transportation Research for UP; Mr. Paul J. Bendon, Jr., Director-Property Accounting for UP; and Mr. Mark J. Gallagher, Director-Budgets, Administration, and Planning for UP. The witnesses' qualifications and a description of the portion of this Reply that each witness sponsors are contained in section IV below.

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AEPCO's opening evidence estimated the Railroads' variable costs for New Mexico movements from 1Q01 through 1Q03. AEPCO used its own records, as well as extrapolations from prior periods, to estimate costs from 3Q02 through 1Q03. It thus costed movements under the Lee Ranch 98-ton rate from 1Q01 through 3Q02, when those movements ceased. In addition, after 2Q02, AEPCO received coal from more than one mine and under more than one rate; thus, its opening evidence included estimated costs for movements that originated from: (i) Lee Ranch Mine, under rates for trains with a minimum average lading weight of 115 tons per carload (the "Lee Ranch 115-ton rate"); (ii) McKinley Mine, under rates for trains with a minimum of 98 tons per car (the "McKinley 98-ton rate"); and (iii) McKinley Mine, under rates for trains with a minimum of 108 tons per car (the "McKinley 108-ton rate").²

In this Reply, the Railroads address errors in AEPCO's opening evidence and present their own calculation of costs for the period from 3Q02 through 1Q03. The Railroads also adjust costs for the Lee Ranch 98-ton movements from 1Q01 through 2Q02 to correct minor errors in their opening evidence. Tables BNSF/UP II.A-1 and BNSF/UP II.A-2 compare the variable cost per ton and the R/VC ratios calculated in the Railroads' reply evidence with the calculations in AEPCO's opening evidence for movements from Lee Ranch and McKinley, respectively.³ The comparisons reveal significant differences in the parties' cost calculations.

² The BNSF Common Carrier Authority at issue in this proceeding contains a lower minimum tonnage per car and a lower minimum tender (cars per train) for shipments from McKinley. This is due to the characteristics of the loading operations, including constraints introduced by the loading equipment, loop track length, and track grade that limit the train sizes at McKinley.

³ BNSF/UP Exh. II.A-1 presents separately BNSF and UP costs by component by origin mine and rate for each quarter in which an AEPCO shipment moved.

Table BNSF/UP IIA-1
Rates, Variable Costs Per Net Ton, and R/VC Ratios
For Shipments from Lee Ranch to Apache Station

Period	Rate	AEPSCO Opening		Railroads Reply	
		Variable Cost	R/VC Ratio	Variable Cost	R/VC Ratio
98-Ton Rate					
1Q01	\$9.35	\$4.26	219%	\$5.28	177%
2Q01	\$9.35	\$3.85	243%	\$4.79	195%
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3Q02	\$9.54	\$3.32	274%	\$4.93	194%
4Q02	\$9.54	No Shipments Under Challenged Rate			
1Q03	\$9.73	No Shipments Under Challenged Rate			
115-Ton Rate					
1Q01 – 4Q01	\$9.05	No Shipments Under Challenged Rate			
1Q02 – 2Q02	\$9.23	No Shipments Under Challenged Rate			
3Q02	\$9.23	\$2.84	311%	\$4.37	211%
4Q02	\$9.23	\$2.92	303%	\$4.37	211%
1Q03	\$9.41	\$2.95	300% ⁴	\$4.52	208%

Table BNSF/UP IIA-2
Rates, Variable Costs Per Net Ton, and R/VC Ratios
For Shipments from McKinley to Apache Station

Period	Rate	AEPSCO Opening		Railroads Reply	
		Variable Cost	R/VC Ratio	Variable Cost	R/VC Ratio
98-Ton Rate					
1Q01 – 4Q01	\$9.35	No Shipments Under Challenged Rate			
1Q02	\$9.54	No Shipments Under Challenged Rate			
2Q02	\$9.54	\$3.87	235%	\$5.85 ⁵	163%
3Q02	\$9.54	\$3.69	246%	\$5.50	173%
4Q02	\$9.54	No Shipments Under Challenged Rate			
1Q03	\$9.73	No Shipments Under Challenged Rate			
108-Ton Rate					
1Q01 – 4Q01	\$9.05	No Shipments Under Challenged Rate			
1Q02 – 2Q02	\$9.23	No Shipments Under Challenged Rate			
3Q02	\$9.23	\$3.34	264%	\$4.78	193%
4Q02	\$9.23	\$3.59	246%	\$5.17	178%
1Q03	\$9.41	\$3.54	249% ⁴	\$5.20	181%

⁴ AEPSCO's R/VC calculations for the 1Q03 are based on the year-2002 rate of \$9.23 instead of the correct rate of \$9.41.

⁵ One movement originated from McKinley in 2Q02 but did not terminate at Apache Station until 3Q02. On opening, AEPSCO included this movement in its 2Q02 costs, but the Railroads did not. In order to eliminate one difference in the parties' calculations, the Railroads adopt AEPSCO's approach and include that movement in the Railroads' costs for 2Q02.

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The remainder of this section is organized based on the format of the Board's *TMPA* decision and is consistent with the Board's decision on *General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*.⁶ Section II.A.1.a addresses the differences in the general cost estimating procedures used by the Railroads and AEPCO. Section II.A.1.b describes the differences in the traffic and operating characteristics used by the parties and explains why the Board should accept the characteristics used by the Railroads. Section II.A.1.c addresses the differences in certain cost adjustments made by the parties and explains why the Board should accept the Railroads' adjustments and reject AEPCO's. Finally, section II.A.2 presents the variable costs and R/VC ratios for 1Q01 through 1Q03.

a. Differences in General Cost Estimating Procedures

(1) Use of 2002 URCS Unit Costs

In their opening submissions, the Railroads and AEPCO relied on the Board's 2001 URCS for BNSF and UP as the base-year costs for their analyses. They indexed the Board's 2001 URCS costs for each quarter of 2001 and for the quarters in 2002 and 2003 that were addressed in their respective submissions. For this Reply, the Railroads have developed 2002 URCS for BNSF and UP using standard Board procedures and publicly available documents.⁷ The Railroads used the 2002 URCS to develop variable costs for each quarter of

⁶ *Ex Parte No. 347* (Sub-No. 3) (STB served Mar. 12, 2001).

⁷ Consistent with its 2001 URCS and the *TMPA* decision, the Railroads modify the URCS calculations to include Account 90 and exclude Account 76, as discussed below in more detail.

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2002 and for the first quarter of 2003. Copies of the 2002 URCS developed for BNSF and UP are included in the Railroads' electronic workpapers.⁸

(2) Accounts 76 and 90

On opening, the Railroads adjusted the URCS general overhead markup ratios for return on investment to *include* expenditures recorded in their R-1 reports in Account 90 (Construction in Progress) and *exclude* expenditures recorded in Account 76 (Interest During Construction) when determining the general overhead ratio for return on investment. The Railroads demonstrated that the construction projects reflected in Account 90 were generally of relatively short duration. *See* RR Op. Exh. BNSF/UP II.A.4. AEPCO did not make this adjustment to the general overhead markup ratios on opening.

The Board has recognized that "unless the construction projects included in Account 90 are long-term in nature," it is appropriate and consistent with ICC and STB precedent to include Account 90 and exclude Account 76.⁹ Most recently, in *TMPA*, the Board accepted comparable evidence to the Railroads' evidence in this case and concluded that a full return on Account 90 investment should be substituted for Account 76 expenses.¹⁰ Accordingly, the Railroads' reply evidence continues to incorporate an adjustment to BNSF and UP URCS to include Account 90 and exclude Account 76. Because AEPCO did not make this same adjustment in its opening evidence, it understated the URCS general overhead ratio for return on investment and, as a result, understated the variable cost of service for AEPCO trains.

⁸ BNSF/UP Reply electronic workpapers "BNSF_02.zip" and "UPRR_02.zip."

⁹ *TMPA* at 40.

¹⁰ *See id.*

(3) Treatment of Southwestern Railroad

The parties disagree on how to treat the payment BNSF has made to the Southwestern Railroad (“SWRR”) for handling AEPCO trains between Rincon and Deming, New Mexico, an operation that began September 7, 2001. Consistent with precedent, the Railroads treat this { } per-carload payment as a car handling cost in their variable cost calculations.¹¹ The Railroads also include the time and distance AEPCO trains traveled between Rincon and Deming in various variable cost components.

By contrast, AEPCO treated the payment as a deduction from revenue, and it excluded the time and distance spent traveling between Rincon and Deming from its variable cost components. AEPCO Nar. at II-A-4. As explained below, AEPCO’s treatment of BNSF’s payment to the SWRR as a revenue deduction is inconsistent with long-standing Board and ICC precedent. In addition, AEPCO’s erroneous exclusion of the time spent and distance traveled between Rincon and Deming resulted in a significant understatement of various variable costs components. The Railroads continue to treat the BNSF’s payment to SWRR as a car handling cost in this Reply, and they include the time spent and distance traveled between Rincon and Deming in various cost components.

AEPCO’s treatment of BNSF’s payment to SWRR as a revenue deduction is contrary to governing precedent.¹² For example, in *FMC*, the Board rejected FMC’s treatment of

¹¹ RR Op. Nar. at II-44; *see also* BNSF/UP.OP.WP.II-A-0138 to 0144.

¹² *Pielet Bros. Trading Co. v. Chicago & North Western Transp. Co., et al*, ICC Docket No. 39756 (ICC served Aug. 11, 1987); *Pielet Bros. Scrap Iron & Metal, Inc. v. The Atchison, Topeka & Santa Fe Ry.*, No. 39814, 1987 ICC Lexis 251 (ICC served June 25, 1987), *rev’d on other grounds in Atchison, Topeka & Santa Fe Ry. v. ICC*, 851 F.2d 1432 (D.C. Cir. 1988); *Cabot Corp. v. Southern Pac. Transp. Co.*, ICC Docket No. 40464 (ICC served Jan. 9, 1991); *Petition of the Denver & Rio Grande Western R.R. & Salt Lake, Garfield & Western Ry. for* (continued...)

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terminal switching payments as deductions from UP's revenues.¹³ The Board agreed with UP that these third party charges were legitimate costs and should not be treated as a deduction from revenue.¹⁴ The Board stated that "because UP is ultimately responsible for supplying the switching service, the expenses it incurs to provide these services are legitimate costs and not adjustments to revenues."¹⁵ Like the UP in *FMC*, BNSF is ultimately responsible for transporting AEPCO trains to the interchange with UP at Deming. The BNSF payment to SWRR is a legitimate cost that BNSF incurs to fulfill that obligation, and it is BNSF that is ultimately responsible for making the payment to SWRR.¹⁶

AEPCO's claim that the SWRR payment should be treated as a revenue deduct as opposed to a variable cost item relies entirely on language in the BNSF/SWRR agreement {

} so the contract language is not dispositive of the issue.¹⁸

Moreover, the Board should not credit such a form-over-substance argument.¹⁹ The charge in no way resembles a revenue division. SWRR is not a carrier named in the common carrier price

Review of a Decision of the Public Serv. Comm'n of Utah Pursuant to 49 U.S.C. 11501, ICC Docket No. 39060 (ICC served Mar 2, 1983), *aff'd in relevant part sub nom. Utah Power & Light Co. v. ICC*, 747 F.2d 721, 740 (D.C. Cir. 1984), *reh'g denied*, 764 F.2d 685 (D.C. Cir. 1985).

¹³ *FMC Wyoming Corp. v. Union Pacific R.R.*, STB Docket No. 42022 (STB served May 12, 2000) ("*FMC*") at 67.

¹⁴ *Id.* at 68.

¹⁵ *Id.*

¹⁶ BNSF/SWRR Lease Agreement §19, included as BNSF/UP.RP.WP.II-A-162 to 163.

¹⁷ AEPCO Nar. at II-A-4.

¹⁸ BNSF/SWRR Lease Agreement §19(c), included as BNSF/UP.RP.WP.II-A-163.

¹⁹ See *United States v. United States Shoe Corp.*, 523 U.S. 360, 367 (1998) (quoting *Pace v. Burgess*, 92 U.S. 372, 376 (1876)) (holding that in determining whether a charge was an unconstitutional tax on exports, "'we must regard things rather than names'").

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authority; it has no relationship with the shipper, AEPCO. In addition, while revenue divisions typically involve an arrangement where each carrier receives a fixed percentage of the revenues from the move, the SWRR receives a fixed amount per car that does not vary with the transportation rate under which the traffic moves.²⁰ Further, unlike the AEPCO common carrier rate at issue here, the payment BNSF makes to SWRR {

}²¹ The SWRR handling charge is plainly a BNSF expense that is appropriately treated as one of the costs of providing service to AEPCO.²²

Finally, AEPCO's exclusion of the time spent and distance traveled between Rincon and Deming understates the Railroads' costs of providing service to AEPCO. For example, BNSF locomotives stay with the train throughout the entire movement from the New Mexico mines to Apache Station. By excluding the time spent and distance traveled on the SWRR, AEPCO understates the actual locomotive ownership, maintenance, and fuel costs. Although the parties exclude roadway property, maintenance-of-way costs, and crew costs between Rincon and Deming from their variable costs for periods after September 7, 2001, AEPCO cannot ignore the costs associated with the BNSF locomotives that power its trains over this segment. Consistent with established Board precedent, the Railroads' variable costs

²⁰ See BNSF/SWRR Lease Agreement, §19, included as BNSF/UP.RP.WP.II-A-162 to 163. Indeed, because it is a fixed per-carload cost to BNSF, the amount of the charge would be unaffected by any Board order relating to the reasonableness of the rate at issue here.

²¹ See BNSF/SWRR Lease Agreement, §19(c), included as BNSF/UP.RP.WP.II-A-163.

²² AEPCO's own exhibits demonstrate the distortion produced by attempting to exclude the payment to SWRR from the variable cost calculations. In Exhibit II-A-19, AEPCO presents a jurisdictional threshold figure developed by adding the BNSF payment to 180 percent of the other variable costs that AEPCO calculates, and an R/VC calculation that is based on subtracting the BNSF payment from the challenged rate before dividing by the other variable costs. See AEPCO Exh. II-A-19, nn. 1&2. As the Board found in *FMC*, such treatment of payments increases the R/VC percentage to the complainant's benefit. See *FMC* at 67 n.109.

properly include the { } per-car load handling payment as well as BNSF's locomotive expenses incurred while SWRR handles AEPCO's traffic.

(4) Calculation of Operating Statistics and Other Costing Inputs After the Close of Discovery

As noted above, in its opening submission, AEPCO used its own records reflecting traffic and operating characteristics, as well as extrapolations from prior periods, to estimate costs for periods after the close of discovery, *i.e.*, 3Q02 through 1Q03. In this Reply, the Railroads perform their own cost calculations for the period from 3Q02 through 1Q03. In some instances, the Railroads adopt the traffic and operating characteristics used by AEPCO. In other instances, the Railroads use different, more accurate methods of developing data for the later period. The Railroads discuss the specific differences between the parties' approaches below in section II.A.1.b with respect to each relevant traffic or operating characteristic.

b. Differences in the Traffic and Operating Characteristics Developed by the Railroads and AEPCO

In their opening submissions, the Railroads and AEPCO developed traffic and operating characteristics for movements under the Lee Ranch 98-ton rate for each quarter from 1Q01 through 2Q02. AEPCO also developed traffic and operating characteristics for movements under the Lee Ranch 98-ton rate for 3Q02, under the McKinley 98-ton rate from 2Q02 through 3Q02, and under the Lee Ranch 115-ton rate and the McKinley 108-ton rate from 3Q02 through 1Q03. In this Reply, the Railroads develop traffic and operating characteristics for these additional movements that occurred after the close of discovery.

Table BNSF/UP Table II.A-3 sets forth a comparison of the traffic and operating characteristics for the issue traffic used by the parties to develop the Railroads' 2Q02 variable costs for Lee Ranch originations moving under the 98-ton rate. BNSF/UP Exh. II.A-2 presents a

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comparison of the traffic and operating characteristics for originations from each origin mine and rate in each quarter that traffic moved under the challenged rates for the BNSF portion of the AEPCO move and BNSF/UP Exh. II.A-3 presents this same comparison for the UP portion of the AEPCO move. Table BNSF/UP II.A-3 is in the format required by *Potomac Electric Power Co. v. Consolidated Rail Corp.*²³ A discussion of the differences between the parties' evidence regarding traffic and operating characteristics follows the table.²⁴

**Table BNSF/UP II.A-3
Traffic and Operating Characteristics
For Shipments from Lee Ranch Mine to Apache Station
98-Ton Rate, Second Quarter 2002**

Item	AEPCO Opening Combined Move	Railroads' Reply Combined Move
1. Name of origin mine	Lee Ranch, NM	Lee Ranch, NM
Name of destination	Apache Station, AZ	Apache Station, AZ
2. Milepost at origin	MP 15.4	MP 15.4
Milepost at destination	MP 1061.2	MP 1061.3
3. Annual tons	See Below	See Below
4. Date of first shipment	January 2, 2001	January 2, 2001
5. Alpha-numeric car type	K340 and K341	K340 and K341
6. Weight of lading per car (in tons)	99.4	99.4
7. Tare weight per car (in tons)	33.2	33.2
8. Identity of car owner	AEPCO	AEPCO
9. Identity of locomotive owner	BNSF	BNSF
10. Car lease rental	See Below	See Below
11. Locomotive lease rental	See Below	See Below
12. Present rates per net ton/effective date	\$9.73 January 1, 2003	\$9.73 January 1, 2003
13. Proposed rate	N/A	N/A
14. Initial rate/effective date	\$9.35 January 1, 2001	\$9.35 January 1, 2001
15. Amounts (or percent) of rate	None	None

²³ ICC Docket No. 36114 (Sub-No. 1) (ICC served Apr. 7, 1982).

²⁴ Although the inputs listed in Table BNSF/UP II.A.3 are limited to movements under the Lee Ranch 98-ton rate in 2Q02, the discussion that follows applies to all issue movements.

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average lading weight using BNSF waybill information for all 1Q03 movements made under the Lee Ranch 115-ton rate and the McKinley 108-ton rate for this Reply.²⁷

(5) Tare Weight Per Car (Item 7)

In order to minimize the number of issues in dispute, the Railroads have adopted AEPCO's calculation of average tare weights, with one exception.²⁸

That exception involves tare weights for movements under the McKinley 108-ton rate from 3Q02 through 1Q03. The same AEPCO trainset was used to originate traffic that moved under the Lee Ranch 115-ton rate and the McKinley 108-ton rate, yet AEPCO's data show a much higher tare weight for the McKinley movement.²⁹ Because the trainset was the same, the tare weight should also be the same and, accordingly, AEPCO's data must be incorrect. The Railroads therefore applied tare weights for movements under the Lee Ranch 115-ton rate to movements under the McKinley 108-ton rate in corresponding quarters for this Reply.

(6) Car Lease Rental (Item 10)

The parties disagree on car lease rental costs. On opening, the Railroads calculated car lease rental costs for BNSF-provided substitute railcars based on BNSF system-

²⁷ BNSF/UP.RP.WP.II-A-008 and BNSF/UP Reply electronic workpaper "BNSF Waybills 1Q 03.xls."

²⁸ The Railroads developed tare weights using UP train movement data. *See* RR Op. Nar. at II-18. AEPCO does not describe its data source in its narrative, *see* AEPCO Nar. at II-A-13, but its workpapers reveal that it used the bills of lading from the mines. *See* AEPCO electronic workpaper "T&O Data Provided By AEPCO.123" and AEPCO workpapers AEP 00562 to 01520.

²⁹ *Compare* AEPCO workpapers AEP 00623 *with* 01417, included as BNSF/UP.RP.WP.II-A-009 to 010. As described above in note 2, McKinley originations cannot load 115 tons per car. The mine bills that AEPCO used include a "plugged" tare weight of 33.25 tons that overstates the actual tare to ensure that ladings are below the maximum. *See* BNSF/UP.RP.WP.II-A-010.

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average costs for those cars. *See* RR Op. Nar. at II-19. In its opening submission, AEPCO asserted that these costs are “not applicable.” AEPCO Nar. at II-A-13. However, AEPCO’s variable cost calculations actually included costs for substitute cars. As explained below in section II.A.1.c.(13), AEPCO’s calculations are incorrect. The Railroads continue to rely upon the car lease rental costs they used on opening.

(7) Locomotive Lease Rental (Item 11)

The parties disagree on locomotive lease rental costs. On opening, the Railroads calculated these costs using BNSF lease costs normalized over the life of the relevant leases for the specific BNSF locomotives used in AEPCO service. *See* RR Op. Nar. at II-19. In its opening submission, AEPCO failed to normalize lease costs. AEPCO also included UP locomotives in its calculations, although most of those locomotives were never used to move trains from New Mexico origins.³⁰ The Railroads continue to rely on the lease costs for BNSF locomotives used in their opening, since their cost calculations were correct and because BNSF locomotives constitute more than 99 percent of the total locomotive hours in New Mexico service.³¹

The Railroads discuss in detail the parties’ disagreements regarding locomotive lease rental below in section II.A.1.c.(15)(b).

³⁰ AEPCO electronic workpaper “Loco Cap Inputs.xls.”

³¹ BNSF/UP Op. electronic workpaper “AEPCO Trains 1Q01-2Q02.xls.”

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(8) Cars Per Train (Item 16)

In order to minimize the number of issues in dispute, the Railroads have adopted AEPCO's calculation of average cars per train, with one exception.³²

That exception involves the correct method of calculating the 1Q03 average cars per train for movements under the Lee Ranch 115-ton rate and the McKinley 108-ton rate. On opening, AEPCO developed 1Q03 cars per train using information from three shipments that occurred in the first week of January.³³ For this Reply, the Railroads have developed 1Q03 cars per train using BNSF waybill information for all 1Q03 movements made under the Lee Ranch 115-ton rate and the McKinley 108-ton rate.³⁴

(9) Loaded Miles (Item 17)

The parties generally agree on the number of loaded miles, excluding loop tracks, between the New Mexico origins and Apache Station. The Railroads based their miles on track charts, while AEPCO based its miles on timetables. The parties' differences are minor, with one significant exception.

The minor differences reflect instances in which AEPCO overstated the lengths of certain segments of the route because it failed to recognize that, due to changes in track alignments, mileposts do not necessarily reflect actual track miles. The parties' mileages for the

³² The Railroads developed cars per train using freight bills. *See* RR Op. Nar. at II-20. AEPCO asserted in its narrative that it used freight bills (*see* AEPCO Nar. at II-A-16), but it actually used documents described as mine loading reports (*see* AEPCO electronic workpaper "T&O Data Provided By AEPCO.123").

³³ AEPCO electronic workpaper "T&O Data Provided By AEPCO.123."

³⁴ BNSF/UP.RP.WP.II-A-008 and BNSF/UP Reply electronic workpaper "BNSF Waybills 1Q 03.xls."

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segments of AEPCO's routes, based on BNSF and UP track charts produced in discovery, are as follows.³⁵

**Table BNSF/UP II.A-4
Comparison of Parties' Mileages**

Segment	Railroads Reply	AEPCO Opening	Difference
McKinley-Belen	169.0	171.4	2.4
Lee Ranch-Belen	96.8	99.9	3.1
Belen-Rincon	147.3	147.2	(0.1)
Rincon-Deming ³⁶	54.3	53.3	(1.0)
Deming-Apache Station	145.6	148.4	2.8

The significant exception involves AEPCO's mileage calculations for those quarters during which BNSF paid SWRR to handle trains between Rincon and Deming. In those quarters, AEPCO completely excluded the miles between Rincon and Deming, which resulted in a significant understatement of locomotive operating and fuel costs. AEPCO's improper exclusion of Rincon to Deming miles was discussed above in section II.A.1.a.(3).

(10) Length of Origin Loop Track (Item 19)

The parties agree on the length of the origin loop track at Lee Ranch Mine. On opening, the Railroads did not address the length of the origin loop track at McKinley Mine. While the Railroads agree with AEPCO on the number of loaded miles at McKinley, they

³⁵ Compare BNSF/UP Reply electronic workpaper "network-aepco Reply.xls" with AEPCO electronic workpaper "AEPCO Miles Opening.123." See BNSF/UP.RP.WP.II-A-011 to 020.

³⁶ As explained above, AEPCO excludes this segment from its variable cost calculations for 4Q01 and later periods.

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disagree slightly on the number of empty miles, due to AEPCO's use of the wrong milepost at the loop track switch.³⁷ The Railroads use the correct miles based on track charts in this Reply.

(11) Length of Destination Track (Item 20)

The parties disagree slightly on the length of the destination loop track at Apache Station, but in order to minimize the number of issues in dispute, the Railroads have adopted AEPCO's calculations, including the number of loaded miles and the number of empty miles traversed by AEPCO trains on the destination track.

(12) Number of Locomotives (Item 21)

The parties disagree on the average consist size of AEPCO trains. On opening, the Railroads used BNSF train movement data produced in discovery to develop average locomotive consist sizes by quarter for the entire route. *See* RR Op. Nar. at II-22. In its opening submission, AEPCO claimed that it developed locomotive consist sizes based on BNSF records. *See* AEPCO Nar. at II-A-15. However, AEPCO actually used BNSF records when trains were on BNSF lines and UP records when trains were on UP lines.³⁸ The parties are in virtual agreement on the consist sizes reflected in BNSF train movement data.³⁹ However, AEPCO's methodology resulted in an understatement of consist sizes because UP's records did not always reflect all of the locomotives used to power AEPCO trains, as the Railroads explain below in

³⁷ Compare AEPCO workpaper AEP 00026, which shows the milepost at 20.44, with AEPCO electronic workpaper "AEPCO Mile Opening.123," which calculates the loop track distance based on MP 20.84.

³⁸ AEPCO electronic workpaper "T&O Summary.123."

³⁹ For the six quarters of Lee Ranch originations costed by both parties on opening, the parties differed by 0.02 units per train (less than one-half of one percent) in one quarter, and were within 0.01 units in the other five quarters.

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section II.A.1.c.(15)(c). Because the BNSF locomotives remain on the trains delivered to UP at Deming, there is no reason to use UP records.

In this Reply, the Railroads continue to rely solely upon BNSF data to determine the average number of locomotives powering AEPCO's trains. To minimize the differences between the parties, the Railroads accept AEPCO's calculation of BNSF consist sizes, which leaves AEPCO's use of the UP locomotives as the sole source of difference for locomotive consist sizes from 1Q01 through 1Q03, with two exceptions. First, although AEPCO used BNSF materials to develop the number of locomotives used in 4Q02, it applied the result only to the Lee Ranch moves, and not to the McKinley moves. Because 4Q02 data, which include shipments from both issue mines, are available, BNSF uses them instead of an average AEPCO derived from shipments in prior quarters. Second, when data for 1Q03 shipments from Lee Ranch were not available, AEPCO used the average for only the prior three quarters. The Railroads correct this approach and develop the average over a full year of shipments under the challenged rates (*i.e.*, 1Q02-4Q02). The Railroad's methodology is more robust and more likely to reflect actual consist sizes for quarters where actual data were not available.⁴⁰

(13) Cycle Hours (Item 24)

The parties disagree on cycle times because AEPCO fails to include the significant portion of the time that trains spend in AEPCO service between Rincon and Deming. On opening, the Railroads used BNSF train movement files produced in discovery to calculate round-trip cycle times developed from one loaded departure to the next. *See* RR Op. Nar. at II-22. In its opening submission, AEPCO used a combination of BNSF and UP data to calculate

⁴⁰ BNSF/UP.RP.WP.II-A-021.

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cycle times. In doing so, it committed two significant errors. First, for the period before BNSF paid SWRR to handle AEPCO's trains between Rincon and Deming, AEPCO omitted the interchange time between train arrivals and train departures at Deming. During this time, the locomotives remain attached to the AEPCO train, and the associated costs must be included in calculations of the variable cost of service. Second, for the period after BNSF paid SWRR to handle AEPCO trains, AEPCO omitted the time that the trains were being handled by SWRR, in addition to the interchange times at Rincon and Deming. The costs associated with these times must be included.

For this Reply, the Railroads developed cycle times for 3Q02 through 1Q03 using BNSF train movement data, when available; otherwise, they relied on the average cycle times of AEPCO shipments that moved under the challenged rates in prior quarters. The Railroads based the 4Q02 through 1Q03 cycle times for Lee Ranch on an average of 4Q01 through 3Q02 cycle times. The Railroads based the 2Q02 through 3Q02 cycle times for McKinley on BNSF train movement files for 2Q02 and partial 3Q02 data produced in discovery, because there were no moves in previous quarters from McKinley upon which averages could be based. The Railroads' 4Q02 through 1Q03 McKinley cycle times were based on averages of the 2Q02 through 3Q02 cycle times. By contrast, AEPCO developed 4Q02 cycle times for Lee Ranch and McKinley moves using incomplete information from BNSF Train Dispatch Reports. Because AEPCO then includes its 4Q02 cycle times in its development of 1Q03 cycle times, AEPCO's 1Q03 cycle

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times are also flawed.⁴¹ The Railroads' methodology is more consistent and likely to reflect actual cycle times for quarters where actual data were not available.⁴²

Table BNSF/UP II.A-5
Average Cycle Time per Train (Hours)
Railroads Reply versus AEPCO Opening

Quarter	Lee Ranch		McKinley	
	Railroads	AEPCO	Railroads	AEPCO
1Q01	84	67	No Shipments Under Challenged Rates	
2Q01	78	61		
3Q01	81	62		
4Q01	102	80		
1Q02	88	61		
2Q02	78	64	78	56
3Q02	87	71	79	74
4Q02	89	65	79	66
1Q03	89	67	79	66

(14) Crew Districts, Loaded Direction (Item 27)

On opening, the Railroads correctly identified the relevant crew districts and continue to use the same information in this Reply. *See* RR Op. Nar. at II-23. In its opening submission, AEPCO misidentified several of the endpoints of the crew districts that provide crews for AEPCO trains. It misidentified one endpoint as "New Mexico Origin mines" rather than Gallup, New Mexico, and it misidentified another endpoint as "Apache Station, AZ" rather than Tucson, Arizona. *See* AEPCO Nar. at II-A-16.

⁴¹ The records that AEPCO identified from the BNSF Train Dispatch reports do not contain the level of detail sufficient to develop locomotive cycle times for the AEPCO trains. *See* AEPCO electronic workpaper "Train Dispatch Reports.123." As such, BNSF continues to rely only upon the standard source of cycle times that has been adopted in rate reasonableness cases – train movement data – in the quarters that they are available, and averages of prior-quarters' shipments moving under the challenged rates in later periods.

⁴² In addition, the Railroads determined that the cycle times that they had submitted on opening included trains that did not return to Lee Ranch or McKinley. For this Reply, the Railroads modified their calculation of cycle times for 1Q01 through 2Q02 shipments to include only AEPCO trains that returned to the issue mines. BNSF/UP.RP.WP.II-A-028.

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Also, the Railroads are submitting variable costs for McKinley originations for the first time in this Reply. AEPCO trains that load at McKinley require three, and sometimes four, Gallup-based coal pool crews to perform the round-trip from Belen, New Mexico to the mine and back to Belen. A crew goes on-duty at Gallup and taxis to Belen to pick-up the empty AEPCO train. The crew takes the train back to Gallup, where it is relieved by a loading crew. The loading crew takes the train to McKinley for loading and, time permitting, returns the loaded train to Gallup. As is the case with Lee Ranch originations, a second loading crew is sometimes required to complete the round-trip Gallup - mine - Gallup. A Gallup road crew then takes the loaded train from Gallup to Belen, and then taxis back to Gallup where it goes off-duty. From Belen to Apache Station and back to Belen, AEPCO train operations are the same regardless of the origin mine.

(15) Turnaround Crews (Item 29)

On opening, the Railroads correctly described the use of turnaround crews and properly included wages for those crews. *See* RR Op. Nar. at II-23 to 24. In its opening submission, AEPCO did not accurately reflect UP's use of turnaround crews. *See* AEPCO Nar. at II-A-16. As explained below in section II.A.1.c.(9)(b), AEPCO's opening evidence omitted wages paid to UP crews that operate in turnaround service from Tucson. These crews travel by van from Tucson to Cochise to empty the loaded train and perform switching on the empty train before returning by van to Tucson. *See* RR Op. Nar. at II-24, II-35 n.42.

(16) Cars Required, RR-Owned (Item 31)

The parties disagree on the percentage of substitute cars provided by BNSF. On opening, the Railroads developed annual ratios of substitute cars based on BNSF traffic tapes. *See* RR Op. Nar. at II-24. In its opening submission, AEPCO based its quarterly calculation of

substitute cars on mine loading reports, although that was not clear from AEPCO's narrative. *See* AEPCO Nar. at II-A-16. AEPCO understated the number of substitute cars because it failed to identify CEFX cars as cars provided by BNSF.⁴³ The Railroads continue to use their annual ratios of substitute cars per train.

(17) Locomotive Spare Margin (Item 33)

The parties disagree on the locomotive spare margin. On opening, the Railroads included a spare margin based on a special study of available and non-utilized time of BNSF locomotives. *See* RR Op. Nar. at II-24 and II-40 to 44. In this Reply, the Railroads correct an error in their calculation of the spare margin and develop a spare margin of { }-percent for 2001 and { }-percent for all of 2002 and the first quarter of 2003.⁴⁴ By contrast, in its opening submission, AEPCO developed a { }-percent spare margin based primarily on availability guarantees included in some BNSF locomotive maintenance contracts, and it used that spare margin in each quarter. *See* AEPCO Nar. at II-A-16. In section II.A.1.c.(15)(a) below, the Railroads explain their spare margin calculations and the reasons why AEPCO's spare margin is improper and substantially understated the Railroads' variable costs.

(18) Car Spare Margin (Item 34)

The parties used different approaches to address car spare margin. On opening, the Railroads based their cost for railroad-supplied cars on the URCS system-average costs for the actual equipment supplied by BNSF. Because the URCS system-average ownership costs account for a spare margin, the Railroads' variable costs do not include an additional car spare

⁴³ *See* BNSF/AEPCO 01716, included as BNSF/UP.WP.RP.II-A-030, and BNSF/UP.WP.RP.II-A-031 to 036.

⁴⁴ BNSF/UP.RP.WP.II-A-038 and BNSF/UP Reply electronic workpaper "Spare Margin Reply.xls."

margin in order to avoid a double-count. *See* RR Op. Nar. at II-24. In its opening submission, AEPCO applied a 10-percent spare margin to its calculation of ownership costs for substitute cars provided by BNSF. *See* AEPCO Nar. at II-A-17. The Railroads continue to use system-average costs for railroad-supplied cars, and thus do not apply a separate car spare margin.

(19) Switching by Road Haul Locomotives (Item 36)

The parties disagree on the amount of switching conducted by road haul locomotives. On opening the Railroads described the switching activities of road locomotives in evidence sponsored by BNSF's AVP-Unit Train Operations, Richard C. Ellis, and UP's Director-Transportation Research, Dale W. Salzman. *See* RR Op. Nar. at II-10 to 14. The Railroads' witnesses testified that AEPCO trains from Lee Ranch required an average of 189 minutes of road haul locomotive switching time per train, including 69 minutes of bad-order switching and 120 minutes of switching related to car repair activities at Apache Station. *See* RR Op. Nar. at II-32, Table BNSF/UP II.A-14.

Road and yard switching operations for trains that load at McKinley are the same as those for trains that load at Lee Ranch, with one exception that lowers the amount of switching time associated with trains originating at McKinley. The Lee Ranch switching operations are described in detail in the Railroads' opening evidence and are not repeated here. RR Op. Nar. at II-10 to 13. The one exception occurs because the McKinley-bound trains, unlike the Lee Ranch-bound trains, pass through Gallup. BNSF switches the repaired cars into the AEPCO trains at the Gallup Yard. Consequently, the 20 minutes per car (or 14.46 minutes per train⁴⁵) associated with the additional switching required to switch the repaired cars into the

⁴⁵ BNSF switches 0.7 bad order cars per AEPCO train at Gallup. *See* RR Op. Nar. at II-32, Table BNSF/UP II.A-14. 20 minutes per car x 0.7 cars per train = 14 minutes per train.

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Lee Ranch-bound trains at Grants, New Mexico, or Laguna, New Mexico, is not relevant to the McKinley-bound trains. Thus, the road locomotive switching time for AEPCO trains originating at McKinley is 175 minutes (or 189 minutes minus 14 minutes).

In its opening submission, AEPCO assigned only 2.52 minutes of switching time associated with road-haul locomotives, citing BNSF “Train Dispatcher Reports”⁴⁶ produced in discovery. *See* AEPCO Nar. at II-A-17. Its evidence shows, however, that it addressed only switching that occurs in yards.⁴⁷ AEPCO misinterprets the data in the Train Dispatcher Reports and arrives at results that are demonstrably wrong. AEPCO’s study apparently relies solely on the field “pickups/setouts” (“switching field”) in those reports.⁴⁸ That field, however, rarely reflects car switching.⁴⁹ This is obvious from a comparison of the car count field in the reports to the switching field. Logically, if there is a change in the number of cars from one segment of the trip to the next, then car switching occurred. In most instances where the Train Dispatcher Reports reflect changes in car counts, however, no car switching is reported in the switching field. For example, the report for Train E DCHMCMO 21 shows 100 empty cars between Rincon and Belen, but only 91 empty cars on the Belen to Gallup segment.⁵⁰ In other words, at

⁴⁶ “Train Dispatcher Report” is the nomenclature AEPCO uses for the Train Sheets that BNSF produced in discovery. *See* AEPCO Nar. at II-A-17. For ease of reference, the Railroads use AEPCO’s terminology in this narrative.

⁴⁷ *See* AEPCO Exh. II-A-11 to 18.

⁴⁸ AEPCO workpaper “Train Dispatch Reports.123,” Tab “A.”

⁴⁹ According to Mr. Ellis, among the reasons that the switching field does not record all car switching activity is the fact that most of the data in the Train Dispatcher Reports are generated automatically by BNSF’s system of electronic tracking devices (AEI readers). Since these readers do not track activity within BNSF’s yards, yard switching activities are not reflected in the Train Dispatcher Report data. Moreover, the data in the “switching field” are generally entered manually. Frequently, however, the switching data are not entered.

⁵⁰ AEPCO workpaper “Train Dispatch Reports.123,” Tab “A.”

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least 9 cars were switched out of the train at either Belen or some point en route to Gallup.⁵¹ Because the “switching” field for this train reflects no car switching, however, AEPCO’s study fails to account for the 9 cars that were obviously switched out of this train. Thus, AEPCO’s reliance on the switching field yields results that are clearly wrong. According to AEPCO, just 2 cars were switched on the 32 trains (3,455 cars) included in its study.⁵² However, as the car count fields in the Train Dispatcher Report, as well as BNSF’s train and car movement data, plainly show, AEPCO trains require substantially more switching than AEPCO claims. The Railroads have presented the best evidence of record on switching by road-haul locomotive.

(20) Switching by Yard Locomotives (Item 37)

The parties disagree on the amount of switching performed by yard locomotives. On opening, Messrs. Ellis and Salzman sponsored evidence regarding switching of bad-order cars performed by yard crews. *See* RR Op. Nar. at II-10 to 14. The Railroads’ witnesses testified that AEPCO trains originating at Lee Ranch required an average of 52 minutes of bad-order switching by yard locomotives. *See* RR Op. Nar. at II-31, Table BNSF/UP II.A-13. In this Reply, the Railroads’ witnesses explain in section II.A.1.b.(24) that the switching requirements are comparable for coal traffic originating at McKinley. The costs associated with this switching were included in the development of the Railroads’ variable costs in this Reply.

In its opening submission, AEPCO asserted that BNSF Train Dispatcher Reports show that there is no switching by yard engines associated with AEPCO trains. *See* AEPCO Nar. at II-A-17. The problems with AEPCO’s study of these reports is discussed in the preceding

⁵¹ There may have been other cars switched out, however, if they were replaced in the same yard or segment of the trip by fill cars, there would be no net change in the car count.

⁵² AEPCO electronic workpaper “Train Dispatch Reports.123,” Tab “A.”

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section. The Railroads have presented the better evidence of record on the amount of switching performed by yard locomotives.

(21) Location of Inter-Train and Intra-Train Switching
(Item 41)

On opening, the Railroads explained that bad-order cars and other fills may be switched at Belen, Gallup, Grants, Laguna, Deming, Rincon, Lordsburg, Apache Station, as well as other locations along the route. *See* RR Op. Nar. at II-25. In its opening submission, AEPCO erroneously claimed that there was “[n]o inter/intra-train switching” on AEPCO trains moving to Apache Station. *See* AEPCO Nar. at II-A-17.

c. Differences in Methodologies Used to Develop Variable
Costs

Table BNSF/UP II.A-6 compares AEPCO’s Opening cost calculations with the Railroads’ Reply calculations for movements under the Lee Ranch 98-ton rate for 2Q02. BNSF/UP Exh. II.A-4 presents similar comparisons for each issue movement by origin mine, rate, and quarter. The differences between the parties’ calculations of the individual cost components are discussed in detail below.

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**Table BNSF/UP II.A-6
Variable Costs Per Carload and Ton
Lee Ranch Mine to Apache Station
98-Ton Rate, Second Quarter 2002**

Item		AEPCO Opening	Railroads Reply
1.	Carload O/T - Clerical Expense	{ }	{ }
2.	Carload Handling - Other Expense	{ }	{ }
3.	Switching Expense - Yard Locomotives	{ }	{ }
4.	Loop Track Expense	{ }	{ }
5.A.	Switching Expense - Road Locomotives (Non-Yard)	{ }	{ }
5.B.	Switching Expense - Road Locomotives (Yard)	{ }	{ }
6.	Gross Ton-Mile Expense	{ }	{ }
7.	Train-Mile Expense - Other Than Crew	{ }	{ }
8.	Locomotive Unit-Mile Expense (excluding ownership)	{ }	{ }
9.	Train-Mile-Expense - T&E Crew	{ }	{ }
10.	Helper Expense - LUM	{ }	{ }
11.	Helper Expense- Crew	{ }	{ }
12.	User Responsibility for Freight Car Repairs	{ }	{ }
13.	Freight Car Expense (RR-Owned Only)	{ }	{ }
14.	Loss & Damage Expense	{ }	{ }
15.	Locomotive Ownership Expense	{ }	{ }
16.	EOTD Ownership Expense	{ }	{ }
17.	SWRR Handling Charge	{ } ⁵³	{ }
18.	Total Variable Cost per Carload (Lines 1-17)	\$378.27	\$507.27
19.	RFA-URCS Linking Factor	0.9934	0.9934
20.	Linked Variable Cost Per Carload	\$375.77	\$503.92
21.	Net Tons Per Carload	99.4	99.4
22.	Variable Cost Per Ton (Line 20 / Line 21)	\$3.78	\$5.07
23.	Rate Per Ton	\$9.54	\$9.54
24.	R/VC Ratio (Line 23 / Line 22)	252%	188%

⁵³ For ease of comparison, the SWRR handling charge is included as a variable cost in AEPCO's column in this Table. However, as explained above, AEPCO improperly treated the charge as a deduction from revenue, which resulted in AEPCO's calculation of an R/VC ratio of 273%.

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(1) Carload Originated or Terminated – Clerical (Item 1)

Both parties applied the standard *Ex Parte No. 399* trainload adjustment to URCS system-average unit costs for station clerical expense. The minor difference between the parties' opening costs for this component was due to the use of different numbers of cars per train to develop the trainload adjustment. The Railroads' general acceptance of AEPCO's number of cars per train removes most of this difference, but the Railroads' use of indexed 2002 URCS unit cost in this Reply for the four quarters of 2002 and First Quarter of 2003 leads to slightly different costs than in AEPCO's opening submission, which relied on indexed 2001 URCS unit costs throughout.

(2) Carload Handling – Other (Item 2)

In light of the Board's decision in *TMPA*, the Railroads accept AEPCO's general methodology for calculating handling costs and use that methodology in this Reply.⁵⁴ However, the Railroads do not accept AEPCO's calculation because AEPCO used unknown sources and undocumented values to develop its adjustments on opening. In this Reply, the Railroads calculate carload handling costs in a manner consistent with the Board's decision in *TMPA*.⁵⁵

(3) Switching Expense (Items 3, 5A & 5B)

The parties disagree on the switching expenses associated with AEPCO's movements because AEPCO failed to account for most switching of bad-order cars and for switching at Apache Station.

⁵⁴ See *TMPA* at 53.

⁵⁵ BNSF/UP.RP.WP.II-A-040 to 044 and BNSF/UP Reply electronic workpaper "claimadj modified.123."

The Railroads developed the variable costs associated with these switching activities based on testimony from Messrs. Ellis and Salzman. The testimony is set forth in the Railroads' opening evidence as to shipments originating at Lee Ranch. *See* RR Op. Nar. at II-10 to 14. In this Reply, Messrs. Ellis and Salzman explain that the only difference in switching activities for shipments originating at McKinley is that bad-order cars are generally switched back into the AEPCO train at Gallup.

(a) Switching Expense - Yard Locomotives
(Item 3)

The Railroads' yard switching expenses reflect the costs of removing bad-order cars, transferring them to repair facilities, and returning them to the point where they can be switched back into AEPCO trains. Yard switching occurs at Belen, Gallup, and Lordsburg, New Mexico. The Railroads developed yard switching time based on Mr. Ellis' estimates of the amounts of time required to complete the various activities associated with switching bad-order cars at Belen and Gallup and UP's URCS system-average minutes per inter-train and intra-train ("I&I") switch to estimate switching time for bad-order cars that UP yard engines switch at Lordsburg.⁵⁶ They determined that AEPCO trains required, on average, 52 minutes of yard switching per train. They developed the number of bad-order cars switched at each location based on detailed BNSF car movement records that indicated that AEPCO cars were bad ordered

⁵⁶ This methodology significantly understates actual switching time and costs associated with AEPCO's bad order cars. The system-average minutes per I&I switch are heavily influenced by the time required to switch large blocks of cars between manifest trains at major classification yards. Because the calculation is driven by block-swapping 20 to 50 cars at a time, the system-average minute-per-car figure is considerably smaller than the time required to switch the one, two, or three bad-order cars per AEPCO train. UP used I&I time because it did not believe it could develop a reliable estimate of AEPCO-specific switching time. Switching of bad-order AEPCO cars is relatively infrequent at Lordsburg, and switching time greatly depends on how those cars are handled relative to other traffic in the yard.

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at Belen and, after repair, were handled either to Gallup to be re-inserted in the unit train before loading at the mine, or to Deming, where the UP would then handle the cars in local service to Apache Station to re-join the unit train at the plant.

In its opening submission, AEPCO claimed that “[n]o intermediate yard switching is applicable to the AEPCO movement.” *See* AEPCO Nar. at II-A-17. Although AEPCO did not explain its claim, it referred to BNSF “Train Dispatch Reports” produced in discovery. *See id.* The Railroads explain above in section II.A.1.b.(19), however, that AEPCO misinterpreted the Train Dispatcher Reports and failed to account for the vast majority of switching activities reflected in those reports. Mr. Ellis also explains above in section II.A.1.b.(19) at n.48 that those reports do not purport to reflect BNSF yard activities. Moreover, AEPCO failed to address UP yard switching.

AEPCO’s assertion that yard locomotives do not perform yard switching on AEPCO trains is implausible and incorrect. The Railroads have presented the best evidence of yard switching expenses, and they continue to rely on that evidence in this Reply.

(b) Switching Expense - Road Locomotives
(Non-Yard) (Item 5A)

The Railroads’ expenses for switching performed by road locomotives on non-yard track include the costs associated with handling bad-order cars en route as well as costs associated with switching AEPCO cars to and from a car maintenance facility at Apache Station. Mr. Fisher used the Railroads’ train movement and car movement data to identify the frequency of cars switched by and for AEPCO by location on BNSF and UP, and Messrs. Ellis and

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Salzman quantified the number of minutes involved in the switching activities.⁵⁷ The Railroads also identified the frequency of switching related to car repair at Apache Station based on Mr. Salzman's testimony, which is supported by documents produced by AEPCO in discovery.⁵⁸ The Railroads' evidence shows that AEPCO trains require, on average, 189 minutes of switching by road locomotives on non-yard tracks for Lee Ranch originations and 175 minutes for McKinley originations.⁵⁹

AEPCO's evidence does not include any costs for switching performed by road locomotives on non-yard tracks. AEPCO's implicit assertion that the Railroads perform no such switching is implausible and incorrect. The train movement data produced in discovery show bad-order switching performed by road locomotives en route, and AEPCO's own documents produced in discovery provide evidence of car repair-related switching performed by road locomotives at Apache Station.⁶⁰

AEPCO indicated in its opening submission that it used "BNSF and UP Train Dispatcher Reports" to identify switching by road haul locomotives (AEPCO Nar. at II-A-17). UP produced no such reports. As explained above in section II.A.1.b.(19), BNSF's reports do not purport to identify all switching activity, and AEPCO's "analysis" falls of its own weight.

⁵⁷ RR Op. Nar. at II-10 to 14 and 29-32 and BNSF/UP opening electronic workpapers "AEPCO Trains 1Q01-2Q02.xls" and "Bad Orders via El Paso.xls."

⁵⁸ See, e.g., AEPCO 7872, 7873, 7877, 7975, 8015, 8019, and 8021 included in BNSF/UP Reply electronic workpaper "AEPCO Plant Switching.pdf."

⁵⁹ In this Reply, the Railroads present variable costs for McKinley originations for the first time. As explained above in section II.A.1.b.(19), since AEPCO trains from McKinley traverse Gallup Yard, they require 14 fewer minutes of road switching than Lee Ranch trains.

⁶⁰ See AEPCO 7915 included in BNSF/UP Reply electronic workpaper "AEPCO Plant Car Repair.pdf."

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(c) Switching Expense – Road Locomotives
(Yard) (Item 5B)

On opening, the Railroads did not calculate costs for switching performed by road locomotives on yard tracks for AEPCO trains because such activity is infrequent. *See* RR Op. Nar. at II-32. However, this was the only category of switching costs that AEPCO included in its opening submission. *See, e.g.*, AEPCO Ex. II-A-11, line 5. AEPCO apparently based its calculation on data from BNSF Train Dispatcher Reports, but as Mr. Ellis explains, those reports do not even identify switching that occurs in yards. AEPCO may have intended to classify this switching as switching by road-haul locomotives on non-yard tracks, but even then, its costs are understated for the reasons described above in section II.A.1.b.(19).

(4) Origin and Destination Loop Track Expenses (Item 4)

The Railroads have accepted AEPCO's loaded and empty loop track miles at Apache Station. The remaining differences in the parties' loop track costs are primarily due to AEPCO's inappropriate adjustments to fuel and locomotive maintenance costs, which are described below.

(5) Switching Expense – Road Locomotives (Non-
Yard) and Switching Expense – Road Locomotives
(Yard) (Items 5A and 5B)

These are addressed in sections II.A.1.b.(19) and II.A.1.c.(3)(b) and (c) above.

(6) Gross Ton-Mile Expense (Item 6)

The parties disagree on gross ton-mile expenses. Gross ton-mile ("GTM") expenses are a combination of expenses associated with maintenance of way, road property ownership, fuel, locomotive maintenance, and other locomotive and train administrative activities. The parties' disagreements span all of these categories. The differences between the Railroads' and AEPCO's GTM expense (per carload) for the representative movement used in

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this Reply (*i.e.*, Lee Ranch-Apache Station, 98-ton rate, 2Q02) are shown in Table BNSF/UP

II.A-7.

Table BNSF/UP II.A-7
Comparison of GTM Expense Per Carload
Lee Ranch Mine to Apache Station
98-Ton Rate, Second Quarter 2002

Item	AEPCO Opening	Railroad Reply	Difference
Maintenance of Way	\$22.25	\$25.39	(\$3.14)
Road Property Ownership	\$62.11	\$75.98	(\$13.87)
Fuel	\$17.68	\$28.59	(\$10.91)
Locomotive Maintenance	\$8.46	\$11.73	(\$3.27)
Other GTM	\$12.50	\$20.57	(\$8.07)
Total	\$123.00	\$162.26	(\$39.26)

(a) Maintenance of Way

On opening, AEPCO calculated maintenance-of-way expenses using the SFGT formula. *See* AEPCO Nar. at II-A-20 to 35. In the Railroads' opening evidence, the Railroads showed that the SFGT formula is flawed as a tool for calculating variable MOW costs on today's Class I railroads, and the Railroads relied on URCS system-average costs for each carrier for its respective portion of the movement. *See* RR Op. Nar. at II-33; *id.*, Exh. BNSF/UP.II.A-5.

Subsequent to the filing of opening evidence, the Board issued its *TMPA* decision, in which it concluded that SFGT does not reflect significant changes in the rail industry and is "too dated to be used."⁶¹ The Board found that "the passage of time has rendered the SFGT formula unreliable."⁶² There is no basis for reaching a different conclusion in this case. The Railroads' URCS system-average MOW costs are the best evidence of record.

⁶¹ *TMPA* at 55-56.

⁶² *Id.*

(b) Road Property Return and Depreciation

The parties disagree on the costs associated with return on investment in road property (“ROI”) and road property depreciation (“RPD”). On opening, the Railroads used unadjusted system-average ROI and RPD costs for both BNSF’s and UP’s portions of the route. In its opening submission, AEPCO acknowledged that BNSF’s line-segment specific road property data could not be used to develop a movement-specific adjustment to the system averages. Like the Railroads, AEPCO used BNSF URCS system-average unit costs for ROI and RPD to calculate road ownership expenses for BNSF’s portion of the route. *See* AEPCO Nar. at II-A-37 n.31. However, for UP’s portion of the route, AEPCO attempted to adjust UP URCS system-average ROI and RPD costs based on data in UP’s valuation section records that were produced in discovery. *See id.* at II-A-36 to 38. AEPCO calculated ROI and RPD unit costs that are 51 percent and 21 percent below UP’s system-average ROI and RPD costs, respectively.

In its opening submission, AEPCO misleadingly claimed that its method of adjusting UP’s system-average costs was “approved by the Board” in *WPL*⁶³ and *FMC*. AEPCO Nar. at II-A-37. In fact, the Board has never used this methodology for adjusting UP’s roadway ownership costs. In *FMC* and *WPL* the Board *rejected* adjustments very similar to the one that AEPCO proposes and relied upon UP’s unadjusted URCS system-average roadway ownership costs. *See FMC* at 79; *WPL* at 54; *WPL Reconsideration* at 15-17.⁶⁴ The United States Court of Appeals for the District of Columbia Circuit recently denied a petition to review the Board’s *WPL* decision on this point. *See Union Pacific R.R. v. STB*, No. 02-1198 (D.C. Cir., Apr. 30,

⁶³ *Wisconsin Power & Light Co. v. Union Pacific R.R.*, STB Docket No. 42051 (STB served Sept. 13, 2001) (“*WPL*”).

⁶⁴ *Wisconsin Power & Light Co. v. Union Pacific R.R.*, STB Docket No. 42051 (STB served May 14, 2002) (“*WPL Reconsideration*”).

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2003) (*per curiam*). AEPCO's adjustment contains the same flaws that led the Board to reject the shipper's proposed adjustment in *WPL*, and the D.C. Circuit relied on the Board's citation of these flaws when it affirmed the Board's decision.

In its opening submission, UP explained in detail why its valuation section records do not provide an appropriate starting point for developing adjustments to URCS system-average road ownership costs. *See* RR Op. Exh. BNSF/UP II.A.6. As explained there, these records provide an incomplete and distorted measure of UP's actual investment in road property used to serve AEPCO's traffic, and the gaps and distortions cannot be corrected through the simple "fixes" that AEPCO offered. Further, AEPCO's proposed fixes do not answer the Board's criticisms of a similar effort to use UP's valuation section data in the recently affirmed *WPL* and *WPL Reconsideration* decisions. Moreover, as the Railroads explained on opening, AEPCO's calculations could not produce an accurate estimate of UP's variable costs for roadway ownership because URCS system-average variability percentages are applied for these categories to line-specific costs. The average density on the UP line at issue in this case is much greater than the average density for the UP system, and thus application of the system-average variability percentage to line-specific costs understates UP's roadway ownership costs.

(i) UP's Valuation Section Records Are Not an Appropriate Starting Point for an Adjustment to URCS Costs

On opening, UP explained in detail why its valuation section records cannot be used to provide a demonstrably superior alternative to unadjusted URCS system-average roadway ownership costs. UP explained that its valuation section records do not fully reflect the investment costs associated with the assets UP acquired in the Union Pacific/Southern Pacific ("UP/SP") merger, that they do not reliably assign all investment necessary to serve AEPCO

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traffic to valuation sections that include the AEPCO route, and that they fail to distinguish which assets within a valuation section are used for specific traffic. AEPCO never squarely confronted these fundamental problems. It summarily asserted that its calculations address these issues, but a careful analysis of its workpapers reveals that AEPCO merely introduced additional errors into the process. AEPCO never demonstrated that UP's valuation section records can be used to make accurate or reliable adjustments to URCS system-average data costs.

UP's valuation section records reflect numerous allocations that are unrelated to the actual dollars invested in specific line segments and are inconsistent with AEPCO's method of allocating investment recorded in default valuation sections. In the Railroads' opening submission, UP explained that the investment recorded in its specific valuation section records reflects the accumulated totals from years of arbitrary allocations from default valuation sections. *See* RR Op. Exh. BNSF/UP II.A.6 at 8 to 17. UP has historically used system-wide and state-wide default valuation sections for investments that cannot readily be assigned to specific valuation sections. It periodically reallocates that investment to specific valuation sections, without attempting to determine where the investments were actually made. UP routinely reallocates investment in its default track asset accounts based on the relative balances of investment already contained in the specific valuation section records. *See id.* at 17. Thus, UP's valuation section records cannot be used reliably to calculate segment-specific investment levels on the route traversed by AEPCO's trains.

When AEPCO developed the numerator of its adjustment factors based on investments in the valuation sections that its trains traverse, it excluded investment that was initially recorded in a default valuation section and later allocated to other valuation sections within the same state. This had the inevitable effect of misstating UP's investment in the route

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traversed by AEPCO trains. In developing its adjustment factors, AEPCO purported to address investment that remains in default valuation sections, but it did not address the underlying problem that specific valuation section records reflect years of accumulated allocations from default valuation sections. Because UP does not maintain (and in many cases never had) the data necessary to untangle years of allocations, this problem is insurmountable. UP's records are sufficient for the purposes for which they are used – to report state-wide levels of investment – but AEPCO's route includes only a fraction of UP's lines in Arizona and New Mexico.

In addition, contrary to its claims, AEPCO failed entirely to account for certain investments that were not assigned to specific valuation sections. As UP explained on opening, UP has a substantial amount of investment in road property assets that are used on a system-wide or state-wide basis. These assets cannot accurately be assigned to specific valuation sections, so they remain assigned to default valuation sections. This includes UP investments recorded in Account 37 (Roadway Machines) and Account 57 (Work Equipment). *See* RR Op. Exh. BNSF/UP II.A.6 at 11. In developing UP's system-wide investment and depreciation totals, AEPCO included those two accounts, even though they are not included in UP's route-specific valuation section data.⁶⁵ As a result, AEPCO compared its compilation of investments for the issue route, which excluded *any* share of UP's investment in roadway machines and work equipment, to a system-wide total that included *all* of UP's investment in these accounts. By not assigning these accounts to the route but including them in the system total on which its adjustment is based, AEPCO understated the variable cost of service to Apache Station.

⁶⁵ AEPCO electronic workpaper "Rd Inv UP AEPCO Opening.123," Tab "URCS Inv."

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UP's valuation section records do not accurately reflect investment costs associated with assets UP acquired in the UP/SP merger, and they cannot be corrected using available information. Even if UP's valuation sections were an otherwise appropriate starting point for adjusting URCS costs, the Board would have to reject AEPCO's adjustment because it did not accurately allocate the UP/SP merger purchase cost to the valuation sections traversed by AEPCO's trains.

In its opening submission, UP explained that its valuation section records understate the investment in road property traversed by AEPCO traffic, because they do not fully reflect UP's investment in the road property assets acquired when UP merged with SP, including the former SP line between Deming and Cochise. *See* RR Op. Exh. BNSF/UP II.A.6 at 6 to 7. UP also explained that existing records do not contain data that would permit an accurate allocation of the UP/SP purchase cost to specific valuation sections, because the valuation study conducted for the acquisition did not contain the necessary level of detail. *See id.* at 7. It was the same lack of information (though with respect to the Union Pacific/Chicago and Northwestern merger) that led the Board to reject the shipper's adjustment to system-average roadway ownership costs in *WPL Reconsideration*.⁶⁶

AEPCO asserted in a footnote to its opening evidence that it "has reflected the writeup of road property that resulted from the [UP/SP] merger," but it did not explain its methodology. *See* AEPCO Nar. at II-A-37 n.32. AEPCO's workpapers reveal that AEPCO attempted to allocate the acquisition cost adjustment by using Southern Pacific ("SP") track

⁶⁶ *See WPL Reconsideration* at 16.

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miles, but that is no substitute for the actual, segment specific data the Board required in *WPL*.⁶⁷ Further, in *WPL Reconsideration*, the Board rejected the shipper's proposed adjustment because "the record did not contain data on the 1995 acquisition costs associated with specific CNW/WRPI line segments (nor do reports filed with the Board)," and thus "no accurate restatement of the acquisition value of those former CNW/WRPI assets now used by [the shipper's] traffic was possible."⁶⁸ AEPCO's submission likewise contains no data on the acquisition costs associated with specific SP line segments used by AEPCO traffic.

UP's valuation sections along AEPCO's route do not include all investment necessary to serve AEPCO. In its opening submission, UP explained that its valuation section records corresponding to AEPCO's route understate the investment in the road property traversed by AEPCO traffic, because assets used to provide service to AEPCO are assigned to valuation sections that are not part of the AEPCO route. The best example involves UP's Harriman Center in Omaha, Nebraska. AEPCO's coal trains moving between Deming and Cochise are dispatched from Harriman Center. UP investments in Harriman Center are reflected in UP's Nebraska valuation section records. None of UP's investment in Harriman Center is reflected in the New Mexico and Arizona valuation sections corresponding to AEPCO's route.

⁶⁷ Moreover, AEPCO's allocation is patently flawed. In order to develop a per-mile adjustment, AEPCO spread the acquisition cost adjustment over the entire SP system on the basis of SP's total track miles – including both running and yard tracks – in 1995. See AEPCO workpaper AEP 01979. In assigning that per-mile cost to its own route, however, AEPCO multiplied the per-mile cost only by the number of miles of running track in the valuation sections that comprised its route, thus understating the total investment associated with its route on a per-mile basis and improperly preventing the Railroads from fully recovering their costs. BNSF/UP.RP.WP.II-A-047.

⁶⁸ *WPL Reconsideration* at 16.

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In its opening submission, AEPCO asserted that “road investment in any system-wide facilities (for example, dispatching facilities) . . . was captured using data reporting those investments.” *See* AEPCO Nar. at II-A-37 to 38. However, AEPCO failed to explain how it actually captured such investment, and there is no indication in its workpapers that it did in fact capture an appropriate share of this investment. In a previous case, a shipper argued that its roadway ownership adjustment had captured UP’s investment in dispatching facilities by assigning a system-average share of Account 26 (Communications Systems) to the issue movement. However, that argument was incorrect, because a portion of UP’s investment in dispatching facilities is also recorded in Account 27 (Signals and Interlockers). Thus, if AEPCO relied on the same logic as the other shipper, it, too, has failed to capture all of UP’s investment. Moreover, AEPCO cannot simply claim to incorporate system-average investment in Account 27, because it used Account 27 data from UP’s valuation section records, rather than UP’s system-average investment levels, to develop its adjustment factor, and it plainly did not include any Account 27 investment recorded in UP’s valuation section that encompasses Omaha, Nebraska.

UP also uses yard facilities in Lordsburg, New Mexico, to handle bad-order cars for AEPCO. *See* RR Op. Nar. at II-13. AEPCO asserted that it captured road investments in UP yard facilities used for the benefit of AEPCO traffic “through the switch engine minute unit cost.” *See* AEPCO Nar. at II-A-38. However, AEPCO did not include any switch engine minute costs for the UP portion of its route. *See* section II.A.1.c.(3), *supra*. Even if it had included such costs, they would reflect only the portion of road property costs associated with switch engine

minutes; they would not reflect the portion of those road property costs associated with gross ton-miles.⁶⁹

UP's valuation section records cannot be used to determine whether specific assets within a valuation section along AEPCO's route are used for AEPCO traffic. In its opening submission, UP explained that it does not maintain further detail about the investment in specific track assets within a valuation section, so there is no way to determine the investment in particular assets used for specific trains. *See* RR Op. Exh. BNSF/UP II.A.6 at 12. AEPCO trains traverse portions of two UP valuation sections – NM-01X and AZ-15. *See id.* Its trains traverse only 49 percent of the route miles in NM-01X and 48 percent of the route miles in AZ-15. *See id.* In using UP's valuation section records, AEPCO assigns UP's investment on a route-mile basis without offering any evidence that its allocation method fairly reflects UP's actual investment in the portion of valuation sections traversed by AEPCO's trains.

(ii) AEPCO's Approach Ignores the Relationship Between Density and Variability

As BNSF and UP explained on opening, AEPCO's attempt to develop line-specific roadway ownership costs ignores the relationship between density and variability. RR Op. Exh. BNSF/UP II.A.6 at 13 to 17. Although AEPCO is estimating total gross investment for some of UP's highest-density lines, its opening evidence indicated that it applied the URCS system-average variability percentage to UP's roadway ownership costs. *See* AEPCO Exh. II-A-6. As a result, AEPCO's adjustment produces significantly understated variable costs for movements to Apache Station.

⁶⁹ *See* URCS Worktables B5 Part 5 and D1 Part 2.

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A fundamental principle underlying URCS is that, as densities increase, so does the portion of total expenses that is variable. This is a logical conclusion driven by the fact that, as densities increase, total costs are increasing. Because fixed costs remain fixed, it must be true that both the total variable costs are increasing, and the variable costs' percentage of total costs is increasing. The AEPCO route between Deming and Cochise has average densities far higher than UP's system-average density. Thus, if AEPCO chooses to develop supposed line-specific roadway ownership costs, it must apply a higher variability percentage that reflects the higher densities of the AEPCO route. *See* RR Op. Exh. BNSF/UP II.A.6 at 16.

(c) Fuel

The parties disagree on the fuel costs associated with the issue movements. On opening, the Railroads developed locomotive fuel costs for the entire route using BNSF's unadjusted URCS system-average unit costs, because BNSF provides both the fuel and the locomotives used for the issue movements. *See* RR Op. Nar. at II-34. In its opening submission, AEPCO calculated fuel costs using a two-step process, and each step was flawed. First, while AEPCO used BNSF fuel costs for BNSF's portion of the route, it used UP fuel costs for UP's portion of the route. Second, AEPCO developed each railroad's costs by adjusting its URCS system-average costs based on a 1985 fuel study AEPCO conducted in a rate case involving The Atchison, Topeka, & Santa Fe Railway ("ATSF") and SP, prior to their mergers with Burlington Northern Railroad Company ("BN") and UP, respectively. *See* AEPCO Nar. at II-A-41 to 43. Application of this adjustment reduced the Railroads' system-average costs by approximately 28 percent. *See* AEPCO Exh. II-A-8.

AEPCO's use of UP costs for the UP portion of the route was improper. As explained above, BNSF provides the fuel and locomotives for the issue movements. Thus, BNSF's costs more closely reflect the actual costs of fuel for AEPCO trains.⁷⁰

AEPCO's use of the 1985 fuel study to reduce the Railroads' system-average costs is an even greater error and is wholly indefensible. The 1985 fuel study move bears little resemblance to the current AEPCO move, as BNSF/UP Table II.A-8 illustrates. The 1985 move involved different railroads, a different origin mine, different locomotive models, a different locomotive consist size, and different train sizes and weights. Moreover, AEPCO's adjustment is based on the relationship of fuel consumption shown in the 1985 fuel study to the ATSF and SP's system-average fuel consumption at that time. But those railroads' system-average fuel consumption figures were based on locomotive fleets, traffic mixes, and railroad operations that are far different from the BNSF or the UP's current fleets, traffic mixes, and operations. The proposition that there is a consistent relationship, over a two-decade period, between a particular movement's fuel consumption and the railroad's system-average fuel consumption, even for the same railroad, is implausible. Here, where four different railroads are involved and the movement characteristics have changed significantly, the proposition is simply inconceivable.⁷¹

⁷⁰ Although UP pays BNSF a fixed amount per train to reflect BNSF's fuel costs for movements of AEPCO trains between Deming and Cochise, UP's payments to BNSF are transfer payments between carriers that must be disregarded under Board precedent. *See Bituminous Coal — Hiawatha, UT, to Moapa, NV*, 6 I.C.C. 2d 1, 26 (1989).

⁷¹ When the Railroads asked for workpapers supporting AEPCO's claim that ATSF and SP system-average fuel consumption figures used in the 1985 study were comparable to BNSF and UP figures used in the current study, AEPCO said that it made no such claim. BNSF/UP.RP.WP.II-A-048. But, if the system-average figures are not comparable (and they are not), then it is nonsensical to apply to 2001 and 2002 system-average costs the same percentage reduction that was developed for 1985 system-average costs.

**Table BNSF/UP II.A-8
Comparison of 1985 AEPCO Fuel Study
Trains to Current Service**

	1985 Fuel Study Trains	2Q02 AEPCO Trains (98-Ton)	3Q02 AEPCO Trains (115-Ton)
Railroads	ATSF, SP	BNSF, UP	BNSF, UP
Predominant Loco Type	3,000HP SD40-2	4,400HP C44-9W	4,400HP C44-9W
Average Number of Locos	5.72	4.87	4.38
Number of Cars	104.5	112.2	107.1
Average Trailing Weight	13,500	14,900	15,300
Origin Mine	Mentmore, NM	Lee Ranch	Lee Ranch (McKinley at 108-Tons)

There is no reason to conclude that the relationship between fuel consumption for AEPCO trains and system-average fuel consumption has remained the same over the past 18 years, given the changes in movement characteristics, locomotives used in AEPCO service, and ATSF/SP and BNSF/UP locomotive fleets and traffic mixes. The Board has recognized the dangers of using stale studies, and it has regularly rejected them in the context of fuel studies.⁷² The Board should reject AEPCO's fuel costs because AEPCO has made "no attempt to show that the [1985] study is applicable to [BNSF's and UP's] current operations."⁷³ The Board should instead rely on the Railroads' use of unadjusted BNSF URCS system-average costs as the best evidence of record.

(d) Locomotive Maintenance Costs

The parties disagree on locomotive maintenance costs. On opening, the Railroads used BNSF's unadjusted URCS system-average locomotive maintenance costs for the entire AEPCO route. *See* RR Op. Nar. at II-34. In its opening submission, AEPCO developed

⁷² *See WPL* at 55 & n.109 (rejecting WPL's reliance on fuel consumption from a 1980's *Nevada Power* case); *San Antonio, Texas, Acting By and Through Its City Public Service Board v. Burlington Northern R.R. Co.*, 1 I.C.C.2d 561, App. B at B-26 (1986).

⁷³ *TPMA* at 45.

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adjustments to BNSF's and UP's system-average maintenance costs. AEPCO developed a 30-percent reduction to BNSF's system-average locomotive maintenance costs by misapplying the carrier's maintenance contracts with the locomotive manufacturers. *See* AEPCO Exh. II-A-7A. AEPCO developed a 23-percent reduction to UP's system-average locomotive maintenance costs by misinterpreting an analysis that UP used to evaluate outsourcing its locomotive maintenance, and which UP had previously produced in the *Northern States Power* case.⁷⁴ *See* AEPCO Exh. II-A-7B. AEPCO then weighted the BNSF and UP adjustments based on locomotive hours to arrive at a composite locomotive maintenance adjustment for all locomotives in AEPCO service.⁷⁵

In this Reply, the Railroads continue to rely on BNSF's unadjusted URCS system average for locomotive maintenance costs. BNSF provides virtually all of the locomotives for the entire AEPCO movement. *See* RR Op. Nar. at II-34.⁷⁶ Moreover, as explained in the Railroads' opening submission, BNSF does not maintain data that capture the costs of maintaining any specific locomotive or class of locomotive. *See id.*

AEPCO claimed to have developed an adjustment to BNSF's URCS system-average locomotive maintenance unit costs based on locomotive maintenance costs that BNSF produced in discovery. *See* AEPCO Nar. at II-A-39. However, as the Board recognized in *TMPA*, payments made pursuant to BNSF's locomotive maintenance contracts account "for only

⁷⁴ *Northern States Power Co. v. Union Pacific R.R.*, STB Docket No. 42059.

⁷⁵ *See* AEPCO electronic workpaper "Composite Loco Inputs.123."

⁷⁶ The Railroads used BNSF's system-average costs in order to simplify their cost calculations. In 2001, AEPCO calculated that UP units accounted for less than 40 of more than 22,000 locomotive hours in AEPCO service for movements between New Mexico origins and Apache Station. *See id.* AEPCO calculated its adjustment to system-average locomotive maintenance based on locomotive hours in 2001, and applied this adjustment to all quarters.

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routine locomotive maintenance costs.”⁷⁷ These amounts do not include substantial expenses that BNSF incurs for { }.⁷⁸ BNSF is unable to identify these latter costs on a locomotive series, pool, or unit-specific basis. Because there is no way to discern the magnitude of these items, the Board should find, as it did in the recent *TMPA* decision at 58, that system-average locomotive maintenance costs should be used for BNSF units that power AEPCO trains.

AEPCO also improperly accounted for the cost of locomotive overhauls. AEPCO included the cost of an overhaul only for those locomotives that were estimated to be overhauled in 2001, based on utilization in AEPCO service. AEPCO’s approach is inconsistent with URCS, which normalizes locomotive repair costs over a three-year period.⁷⁹ Normalization of these costs recognizes that such costs can vary significantly from year-to-year, and a longer maintenance cycle should be recognized when calculating variable costs. In fact, AEPCO’s approach, which departed from the way shippers have treated overhaul costs in prior cases, appears to be results-oriented in this case, as it estimated that very few locomotives were due for an overhaul in 2001.⁸⁰

AEPCO also misapplied the terms of the contracts in calculating BNSF’s monthly maintenance costs. Rather than rely on locomotive maintenance bills produced in discovery, AEPCO calculated the payments that AEPCO apparently believed BNSF should have paid under

⁷⁷ *TMPA* at 58.

⁷⁸ BNSF/AEPCO 18805, included as BNSF/UP.RP.WP.II-A-054.

⁷⁹ See URCS Worktable D3.

⁸⁰ AEPCO electronic workpaper “BN Loco Maint. 123.”

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its locomotive maintenance contracts.⁸¹ In calculating BNSF's fictional payments under these contracts, AEPCO also failed to account for the fact that the per-mile rates BNSF pays under its maintenance contracts are based on a { }.⁸² If BNSF utilizes the locomotives covered by those contracts {

} AEPCO, however, based its adjustment to system-average locomotive maintenance on the number of miles it estimated that BNSF utilized the locomotives. AEPCO's estimate of BNSF locomotive utilization overstated the locomotive miles per year.

AEPCO failed to include the miles BNSF locomotives power the AEPCO train between Rincon and Cochise, and failed to include the associated cycle time. BNSF incurs locomotive operating and ownership costs, including a per-mile maintenance cost, over the entire round-trip from the mine to Apache Station and back, and those costs must be included in the Railroads' variable costs for the issue service. When correct mileages and cycle times are considered, BNSF locomotives on the AEPCO train are utilized less than the {

}, which results in higher costs per mile.⁸³

Finally, AEPCO's approach significantly understated the payments BNSF makes under the contracts. Normalizing the locomotive overhaul costs per mile, basing the monthly

⁸¹ AEPCO's development of the BNSF locomotive maintenance costs also erroneously assumed all locomotives in AEPCO service were subject to a maintenance agreement. However, almost 375 locomotive hours were not covered by a maintenance agreement. *See* AEPCO electronic workpaper "BNSF loco hrs-maint gp.xls." These hours should have been included in AEPCO's calculation at system average. *See* AEPCO electronic workpaper "BN Loco Maint.123."

⁸² BNSF/UP.RP.WP.II-A-057 to 069.

⁸³ BNSF/UP Reply electronic workpaper "BN Loco Maint_RR_Reply.xls." The locomotive maintenance bills show that BNSF was charged at the { } and not at the higher monthly miles calculated by AEPCO.

costs on actual bills produced in discovery, and accounting for the difference between the actual miles traveled and { } produces a { } percent *increase* to BNSF's system-average locomotive maintenance costs.⁸⁴

AEPCO also developed an adjustment to UP's system-average locomotive maintenance costs. AEPCO's adjustment is incorrect, but it has virtually no effect on the cost calculations in this case.⁸⁵ Since AEPCO weighted its adjustments to BNSF and UP system-average locomotive maintenance costs by the relative number of locomotive hours, the weighted average adjustment is almost identical to the BNSF adjustment because almost all of the locomotive hours are incurred by BNSF locomotives.

(e) Other GTM

The differences between the Railroads and AEPCO in the category of other gross ton-mile expenses are primarily due to the impact on overhead costs of AEPCO's fuel and locomotive maintenance adjustments, discussed above.

(7) Train-Mile Expense - Other than Crew (Item 7)

Differences between the parties' "train mile-other" expenses are minimal, accounting for less than one quarter of one percent of the total difference in variable costs. The biggest source of difference arises from the Railroads' use of base-year 2002 URCS costs on Reply, as compared to AEPCO's reliance on costs indexed from its 2001 URCS.

⁸⁴ *Id.*

⁸⁵ In developing its adjustment to UP's system-average locomotive maintenance costs, AEPCO relied on the same data and methodology that the shipper used in *Northern States Power*. UP explained in *Northern States Power* why that data and methodology cannot be used to produce a reliable and accurate adjustment to UP's URCS costs. An updated version of the locomotive maintenance portion of UP's narrative from the *Northern States Power* case is attached as BNSF/UP Exh. II.A-5.

(8) Locomotive Unit-Mile Expense (Item 8)

The parties disagree about the locomotive unit-mile expense. This expense (excluding locomotive ownership⁸⁶) is comprised of (1) fuel; (2) locomotive maintenance; (3) locomotive servicing; and (4) other expenses including overhead. The differences between the parties with respect to fuel and locomotive maintenance are addressed in sections II.A.1.c.(6)(c) and II.A.1.c.(6)(d), respectively. The parties agree on the unit costs for locomotive servicing. They present differing costs for other expenses, due to the impact on overhead costs of AEPCO's inappropriate adjustments to fuel and locomotive maintenance expenses.

(9) Train-Mile Expense - Crew (Item 9)

The parties disagree on the calculation of train crew expenses. The Railroads developed crew expenses using BNSF and UP payroll records produced in discovery. AEPCO also used the payroll records produced in discovery, but its calculations contained omissions and unsubstantiated adjustments to those records that resulted in an understatement of variable costs.

(a) BNSF Wages

AEPCO committed three significant errors in its calculation of the crew wage costs for BNSF's portion of the move. First, AEPCO failed to include all payments made to engineers that worked the AEPCO trains. Second, AEPCO improperly assigned certain pay in its development of a mark-up ratio to account for BNSF's full wage expense. Third, AEPCO applied an unsupported reduction to estimate crew wages for originations from McKinley.

First, in its crew wage calculations, AEPCO inappropriately excluded guarantee payments made to engineers that worked the AEPCO trains. BNSF produced materials to

⁸⁶ Locomotive ownership is discussed in section II.A.1.(c)(15).

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AEPCO in discovery that identified that wages paid to Engineers are reported to Occupation Codes 00, 01, 11, 50, and 51.⁸⁷ Although the discovery documents identified pay assigned to occupation code 51 as “Special Rest Cycle Guarantee 01,” indicating that it was guarantee pay associated with Occupation Code 01 – “Road Engineers,” AEPCO inexplicably excluded this pay from its calculations. Further, AEPCO treated Occupation Codes 00 – “Special Guarantee Engineer 01” and 50 – “Special Rest Cycle Guarantee 00” inconsistently, including them in its crew wage costs in either 2001 or 2002, but not both.⁸⁸ AEPCO’s approach prevents the Railroads from recovering their actual wage expenses and should be rejected.

Second, although AEPCO’s improper exclusion of guarantee pay is a source of the difference between the parties’ mark-up ratios, there is further disagreement regarding the treatment of other constructive allowances. To develop a wage mark-up ratio to account for pay that is not assigned to a specific train, the parties determine the relation between “train-related” and “non-train related” pay. By incorrectly assigning certain pay to “train-related” that is in fact “non-train related,” however, AEPCO further understated its mark-up ratios and, as a result, the variable costs for the issue traffic. The largest difference in assignment is “Held Away from Home” pay (Constructive Allowance code 30). Not only has the Board previously found that such pay is non-train related,⁸⁹ AEPCO treated such pay as non-train related in its analysis of UP

⁸⁷ BNSF/AEPCO 07853, included as BNSF/UP.RP.WP.II-A-071.

⁸⁸ AEPCO electronic workpapers “BN2001 Mark Ups.xls” and “BN2Q01-1Q02 Mark Ups.xls” indicate that AEPCO included Occupation Code “00” pay in its 2001 calculations but not in its 2002 costs, and included wages reported to Occupation Code “50” in its 2002 costs but not in 2001.

⁸⁹ *FMC* at 80.

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wages.⁹⁰ AEPCO has presented no explanation for departing from established precedent and treating the BNSF pay differently.⁹¹

Finally, AEPCO estimated wages for McKinley originations that are significantly less than those it calculated for Lee Ranch. Last month, and a full two months after the filing of Opening Evidence, AEPCO filed Errata in which it modified its crew wages for McKinley originations. In light of the fact that the first McKinley shipments to AEPCO were not complete until after the discovery cut-off, wage data for the crews working the McKinley trains were not available. As such, AEPCO claimed in that Errata that in the absence of wage data for McKinley crew, it had “intended to utilize, as a surrogate, the crew wages paid by BNSF to crews (operating out of the same yard) that serve the Lee Ranch Mine.” *See* AEPCO’s Third Errata to Opening Evidence at 2-3, included as BNSF/UP.RP.WP.II-A-073 to 074. Notwithstanding this suggestion, however, review of the Exhibits filed with the Errata indicated that AEPCO did not utilize the Lee Ranch wages as a surrogate, but used a wage figure for McKinley trains that was *lower* than its understated figure for originations from Lee Ranch. *See* AEPCO Errata Exh. II-A-9A, included as BNSF/UP.RP.WP.II-A-075. It offered no explanation for its reduction to, not acceptance of, the Lee Ranch wages for costing McKinley traffic. In fact, given the additional miles and crew requirements for McKinley originations described in section II.A.1.b.(14), such an outcome is indefensible. First, the movement from McKinley is 11 percent longer, not

⁹⁰ AEPCO electronic workpaper “UP CA Codes.xls.”

⁹¹ In this Reply, BNSF further narrows the disputed pay by accepting AEPCO’s “train-related” assignment of meal allowances (Constructive Allowance code 09) and “non-train related” assignment of pay for nine constructive codes. BNSF/UP.RP.WP.II-A-072.

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shorter, than the Lee Ranch originations.⁹² Further, BNSF's operating witness Mr. Ellis testifies that the planned (*i.e.*, the minimum) number of Gallup crews required to bring the empties from Belen to Gallup, take the empties from Gallup to the mine, load the train, return the loads to Gallup, and then bring the train to Belen for movement south is three. BNSF's workpapers indicate that most Lee Ranch originations, in fact, required only two Gallup crews to make the round-trip from Belen to the mine and back.⁹³ Thus it is clear that crew wages for McKinley trains should be *higher*, not lower, than those for shipments from Lee Ranch.

In order to estimate better the BNSF wages associated with McKinley shipments, BNSF used the average wages per train-mile produced from the Lee Ranch records. This approach produced wages that were 11-percent higher per train for McKinley, reflecting the same mileage relationship identified above. This approach is sensible and produces a more realistic result than AEPCO's understated estimate for the longer haul to McKinley that requires more crews.⁹⁴

(b) UP Wages

AEPCO's crew wage calculations also significantly understated UP's crew wage costs for three reasons: AEPCO improperly (i) omitted crews that work the AEPCO train and report to a "CCQCQ" Train Symbol; (ii) eliminated certain crew members that it claimed were "double-counts"; and (iii) treated certain non-train related wages paid to crew members as train-related.

⁹² Compare McKinley train miles of 636 with 572 for Lee Ranch shipments. BNSF/UP Reply electronic workpaper "BNSF-0102-T&E-ADJ-Reply.123."

⁹³ BNSF/UP Reply electronic workpaper "aepco.bnsf roadcrew wages reply.xls," at Tab "segments."

⁹⁴ BNSF/UP.RP.WP.II-A-077.

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First, as described in the Railroads' opening submission, UP's production of data in response to AEPCO's discovery request for wage data for crew members for each AEPCO train did not include wages paid to crews that worked on AEPCO trains designated with the symbol CCQCQ. *See* RR Op. Nar. at II-35 n.42. As the Railroads explained, that symbol was first used in mid-2001 to identify crews operating in turnaround service from Tucson. *See id.* However, as the Railroads further explained, other wage data that UP produced in discovery included wages that crews earned for work on AEPCO trains reported to the CCQCQ symbol. The Railroads' calculations on opening included these wages, and they continue to include those wages in this Reply.⁹⁵

Second, AEPCO improperly excluded wages of certain UP crew members on AEPCO trains as "double-counts." When the Railroads asked AEPCO for workpapers relating to its determination that certain wages reflected "double-counts," AEPCO responded that "[a]ll data used to determine the 'double count of engineers – 2/crew district' appears on the worksheets '2001 Train Count' and '2002 Train Count.'"⁹⁶ In fact, UP's data did not include any double-counts. The worksheets AEPCO cited indicate that the wages AEPCO excluded as "double-counts" involve employees with names and social security numbers different from those for the other employees on the same AEPCO trains – they were wages paid to different people, not "double-counts."⁹⁷

AEPCO's vague reference to "2/crew district" suggests that it assumed that UP always operated AEPCO trains with two crew members and that a wage record for a third crew

⁹⁵ BNSF/UP.RP.WP.II-A-081.

⁹⁶ BNSF/UP.RP.WP.II-A-049.

⁹⁷ AEPCO electronic workpaper "Wage by Train-AEPCO UP.xls."

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member reflected a data flaw. However, AEPCO trains occasionally include a third crew member, and AEPCO simply cannot ignore such realities in favor of a presumed operation that excludes costs actually incurred on its trains. AEPCO has proffered no evidence that the records are erroneous, and by not including them, is precluding UP from recovering the full crew wage expense of providing service to AEPCO.

Finally, AEPCO's calculation of mark-up ratios contained errors in the assignment of certain UP wages to train-related or non-train related categories. Specifically, AEPCO treated many UP constructive allowances as "train related," despite the fact that the allowances were not specific to any particular service. For example, pay reported to "2nd Trip out of Terminal" (Class of Time code F2) and "22½ Hour Rule" (code D1) is associated with working multiple shifts and should be spread across all trains, not arbitrarily assigned to any one. By incorrectly treating such pay as train-related, AEPCO would prevent UP from recovering its actual wage expense, as such pay cannot be assigned to one train. To narrow the disputed pay amounts, the Railroads accept AEPCO's treatment of pay as train-related for three class of time codes for which valid Train Symbols are reported: 07 – "Meals Enroute," D6 – "Step-Up / Make Whole Pay," and U4 – "Used in 25-30 Mile Zone."

Table BNSF/UP II.A-9 compares the parties' calculations of BNSF and UP crew wages per train for AEPCO shipments.

Table BNSF/UP ILA-9
Comparison of Railroads and AEPCO Crew Wages per Train

	BNSF			UP		
	Railroads Reply	AEPCO Open	Percent Difference	Railroads Reply	AEPCO Open	Percent Difference
<i>Lee Ranch</i>						
1Q 2001	{ }	{ }	2%	{ }	{ }	-22%
2Q 2001	{ }	{ }	-5%	{ }	{ }	-15%
3Q 2001	{ }	{ }	4%	{ }	{ }	-37%
4Q 2001	{ }	{ }	-7%	{ }	{ }	-38%
1Q 2002	{ }	{ }	-9%	{ }	{ }	-30%
2Q 2002	{ }	{ }	-9%	{ }	{ }	-29%
3Q 2002	{ }	{ }	-9%	{ }	{ }	-19%
4Q 2002	{ }	{ }	-5%	{ }	{ }	-16%
1Q 2003	{ }	{ }	-7%	{ }	{ }	-18%
<i>McKinley</i>						
2Q 2002	{ }	{ }	-22%	{ }	{ }	-20%
3Q 2002	{ }	{ }	-22%	{ }	{ }	-19%
4Q 2002	{ }	{ }	-19%	{ }	{ }	-16%
1Q 2003	{ }	{ }	-20%	{ }	{ }	-18%

(10) Helper Expense - LUM (Item 10)

The parties agree that there are no such expenses associated with AEPCO trains.

(11) Helper Expense - Crew (Item 11)

The parties agree that there are no such expenses associated with AEPCO trains.

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(12) User Responsibility for Freight Car Repairs (Item 12)

Both parties calculated this expense using 9.51 percent of URCS system-average costs as specified by the ICC.⁹⁸ The Railroads applied 9.51 percent respectively of BNSF's and UP's URCS freight car repair cost per mile to each carrier's portion of the AEPCO move. Although the parties' approaches were methodologically similar, the Railroads' use of a base-year 2002 URCS in this Reply introduces different unit costs for the variable cost calculations for each of 1Q02 through 1Q03.

(13) Car Expense (RR-Owned Only) (Item 13)

Both parties included costs to reflect the use of railroad-owned cars substituted in AEPCO trainsets, but they disagree on the costs associated with substitute cars. The most significant source of AEPCO's lower cost is an adjustment that AEPCO describes as "a standard active to calendar-day adjustment." AEPCO Nar. at II-A-49. In *TMPA*, the Board correctly described this adjustment as "a collateral attack on the [URCS] model itself." *TMPA* at 63. For the same reason that the Board rejected this adjustment in *TMPA*, it should reject it here.

(14) Loss and Damage Expenses (Item 14)

The parties disagree on the amount of loss and damages expenses to include in their variable cost calculations. On opening, the Railroads applied UP and BNSF 2001 URCS system-average loss and damage costs for coal to develop variable costs for the UP and BNSF portions of the AEPCO route. See RR Op. Nar. at II-38. In its opening submission, AEPCO used loss and damage records for AEPCO movements that the Railroads produced in discovery,

⁹⁸ See *Car Service Compensation – Basic Per Diem Charges – Formula Revision in Accordance with the Railroad Revitalization and Regulatory Reform Act of 1976*, 358 I.C.C. 716, 804 (1977).

which are significantly higher than the system average used by the Railroads. *See* AEPCO Nar. at II-A-53. In this Reply, the Railroads continue to use URCS system-average costs, which they believe provide the best measure of loss and damage expenses likely to be incurred in the medium to long run.

(15) Locomotive Ownership Expense (Item 15)

The parties disagree about the proper calculation of locomotive ownership expense. The differences in the parties' calculations are primarily due to the different approaches they take with respect to the following factors: (a) spare margin; (b) development of lease costs; (c) calculation of average consist size; and (d) development of cycle times. The parties' calculations also differ because, on opening, the Railroads relied solely on data regarding BNSF locomotives in AEPCO service, while AEPCO developed ownership costs based on BNSF and UP locomotives weighted by usage. As discussed above in connection with locomotive maintenance expenses, UP locomotives are rarely used on AEPCO trains – they accounted for only 1.5 out of more than 900 locomotive days in AEPCO's own calculations for 2001.⁹⁹ The Railroads continue to develop locomotive ownership costs using BNSF locomotives in this Reply.

(a) Spare Margin

The Board has often applied a 10-percent spare margin in rate reasonableness cases, but has acknowledged that a different percentage may apply if supported by empirical

⁹⁹ In weighting the BNSF and UP locomotive costs to calculate a composite for 2002 New Mexico shipments under the challenged rates, AEPCO mistakenly included UP locomotives used to deliver Power River Basin coal to Apache Station. By doing so, AEPCO erroneously applied a 23-percent weighting to UP locomotives rather than a weighting much closer to the 0.2 percent that AEPCO calculated for UP's units in New Mexico service in 2001.

evidence.¹⁰⁰ In their opening evidence, the Railroads presented empirical evidence supporting BNSF spare margins of { } and { } percent and explained the basis for these spare margins. See RR Op. Nar. at II-40 to 44. AEPCO argues for a spare margin of { } percent for BNSF locomotives. See AEPCO Nar. at II-A-16.¹⁰¹ AEPCO provided no explanation of the basis for its spare-margin calculation in its narrative. AEPCO's workpapers suggest that it calculated BNSF's spare margin based on the "availability guarantees" provided by the equipment manufacturers in BNSF locomotive maintenance contracts. AEPCO incorrectly assumed that the contract unavailable time is BNSF's locomotive spare margin.¹⁰²

However, the "availability guarantees" in BNSF's contracts are not an appropriate basis for developing BNSF's locomotive spare margin. "Unavailability" time under the contract does not include all time that a locomotive is unavailable to the railroad for revenue service. For example, locomotives involved in { } would not be considered as "unavailable" under the contract but clearly are not available to the railroad for revenue service.¹⁰³ Further, AEPCO's reliance on the contract availability guarantees improperly failed to account for time that a locomotive is "available" but not utilized.

In their opening evidence, the Railroads relied upon the BNSF locomotive availability and utilization materials provided to AEPCO in discovery to develop their locomotive spare margin. As the Railroads explained, these materials reported total time, time

¹⁰⁰ See, e.g., *West Texas Utils. Co. v. Burlington Northern R.R. Co.*, 1 S.T.B. 638, 728 (1996) (stating that BN had failed to "substantiate the use of a spare margin different from the 10% accepted in past cases").

¹⁰¹ For UP locomotives, AEPCO relied on a 10-percent spare margin. AEPCO electronic workpaper "Composite Loco Inputs.123."

¹⁰² AEPCO Exh. II-A-7A.

¹⁰³ BNSF/AEPCO 18807, included as BNSF/UP.RP.WP.II-A-056.

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that the locomotives are available vs. unavailable, and the time that the locomotives are utilized vs. unutilized.¹⁰⁴ RR Op. Nar. at II-40 to 44. In this reply, the Railroads modify the spare margin calculations to make two corrections. First, BNSF recently determined that its “available” time figures were incorrect due to a programming error and has re-run its earlier summaries to correct this error. Second, BNSF modified the unavailable time calculation to prevent any possible double-count. BNSF’s unavailable time includes the following three components: (1) In Shop, (2) Sanding / Fueling / Servicing, and (3) Other Unavailable (which includes locomotives in a defect status). While the vast majority of unavailable time constituted time that the units were in the shop, approximately { } percent was time associated with the Sanding / Fueling / Servicing category. Although it is unclear whether this Sanding / Fueling / Servicing time is already included in the cycle times to which the Railroads apply the spare margin, the Railroads have removed this category of time from “unavailable” time and thereby included it in “available” time. By doing so, the Railroads have avoided any possible double-count in their spare margin calculations.

As a result of these corrections, the overall locomotive spare margin calculated by the Railroads are { } percent for 2001 and { } percent for 2002.¹⁰⁵

(b) Development of BNSF Lease Costs

AEPCO developed lease costs by identifying the specific payments provided for in the lease payments schedules for 2001 and 2002. As the Railroads explained on opening, this approach cannot be used to develop lease costs for any particular period under a sawtooth lease

¹⁰⁴ Available time includes utilized and non-utilized time.

¹⁰⁵ BNSF/UP.RP.WP.II-A-038 and BNSF/UP Reply electronic workpaper “Spare Margin Reply.xls.”

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payment schedule, and is at odds with GAAP and with BNSF's regulatory reporting practices. RR Op. Nar. at II-39 to 40. In contrast, the Railroads developed locomotive lease costs by normalizing lease costs over the life of the leases, consistent with FASB No. 13 and the manner in which BNSF reports locomotive lease costs in the R-1. *Id.* The Railroads' evidence provides a truer picture of BNSF's locomotive lease costs and is the better evidence of record, and they continue to use it in this Reply.

(c) Development of Average Consist Sizes

As discussed above, the parties disagree on the average consist sizes used to develop locomotive ownership costs. On opening, the Railroads used BNSF train movement data produced in discovery to develop average locomotive consist sizes by quarter for the entire route. *See* section II.A.1.b.(12), *supra*. By contrast, in its opening submission, AEPCO developed locomotive consist sizes using BNSF records when trains were on BNSF lines and UP records when trains were on UP lines. *See id.* AEPCO's methodology is inferior for two reasons.

First, AEPCO unnecessarily complicated the costing process by using two data sources for locomotive consist sizes. As the Railroads explained on opening, BNSF provides the locomotive power for the issue movements under a run-through agreement with UP. *See* RR Op. Nar. at II-24 n.33. According to Mr. Salzman, UP does not add or remove locomotives while AEPCO trains are on the UP portion of the route. Absent an unusual event (such as a complete mechanical breakdown requiring a unit's removal from the consist), UP moves AEPCO trains from Deming to Apache Station and back using the same BNSF locomotives it receives on the loaded train at Deming. Thus, there is no need to use both Railroads' data.

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Second, UP's data contain obvious errors that led AEPCO to understate the average number of locomotives on AEPCO trains for the UP portion of the route. For example, loaded BNSF train COLRMDCH05A departed Lee Ranch on January 20, 2002 with five locomotives. UP data show the same train at Deming with no locomotives. UP data for Wilna, Lordsburg, and Vanar, New Mexico, and Olga, Arizona, show the train with three of the BNSF locomotives. Finally, UP data for Cochise show the train with the same five locomotives that were on the train on the BNSF.¹⁰⁶ According to AEPCO's calculations, this train had an average consist size of 5.0 locomotives on BNSF's lines, and an average consist size of 3.6 locomotives on UP's lines.¹⁰⁷ However, it should have been obvious to AEPCO that UP's data understated the average consist size by omitting all locomotives between Deming and Wilna, and by omitting two of the five locomotives between Wilna and Cochise. Moreover, BNSF's fuel bills provided to AEPCO in discovery show that UP was billed for fueling five locomotives at Deming.¹⁰⁸

Similarly, BNSF train COLRMDCH04A departed Lee Ranch on January 11, 2001 with five locomotives and arrived at Deming with the same five locomotives. UP data show the same train at Deming with no locomotives. UP data for Wilna, Lordsburg, Vanar, and Olga show the train with one locomotive. Finally, UP data for Cochise show the train with three locomotives.¹⁰⁹ According to AEPCO's calculations, this train had an average consist size of 5.0

¹⁰⁶ BNSF/UP.RP.WP.II-A-022 and BNSF/UP Reply electronic workpaper "UP & BNSF Locos from Trn Mvmt.xls."

¹⁰⁷ AEPCO electronic workpapers "BNSF Train Movement Summary T&O.123" (which shows 5 locos throughout) and "UP Trn Mvmt 2001 Deming-Cochise.xls", Tab "Dem-Cochise" (which calculates 521 LUM and 145 train miles, resulting in 3.6 locos per train).

¹⁰⁸ BNSF/UP.RP.WP.II-A-027.

¹⁰⁹ BNSF/UP.RP.WP.II-A-023 and BNSF/UP Reply electronic workpaper "UP & BNSF Locos from Trn Mvmt.xls."

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locomotives on BNSF's lines, and an average consist size of 1.6 locomotives on UP's lines.¹¹⁰

Again, it should have been obvious that UP's data were flawed, since UP would be unable to move a loaded coal train between Deming and Olga with only *one* locomotive.

The apparent differences between BNSF consist sizes and UP consist sizes reflect failures of UP's AEI readers or software to record or properly identify all of the BNSF locomotives moving past a reader, rather than actual changes in consist size as AEPCO trains moved over UP's portion of the route. AEPCO never explained its counterintuitive conclusion that locomotive consist size would be different on BNSF's and UP's portions of the route or why it relied on erroneous UP data rather than readily available BNSF data it used for a portion of the move.

As explained above in section II.A.1.b.(12) of this Reply, the Railroads generally accept AEPCO's reliance on average consist sizes developed from BNSF data¹¹¹ and correctly recognize that the consist sizes do not decrease on UP's portion of the route.

(d) Cycle Times

As discussed above, the parties disagree on cycle times because AEPCO failed to include a significant portion of the time its trains spend in AEPCO service between Rincon and Deming. See section II.A.1.b.(13), *supra*. AEPCO understated cycle times because (1) for the period before BNSF paid SWRR to handle AEPCO's trains between Rincon and Deming, AEPCO omitted the interchange time between train arrivals and train departures at Deming; and (2) for the period after SWRR began handling AEPCO's trains, AEPCO omitted the time that the

¹¹⁰ AEPCO electronic workpapers "BNSF Train Movement Summary T&O.123" (which shows 5 locos throughout) and "UP Trn Mvmt 2002 Deming-Cochise.xls", Tab "Dem-Cochise" (which calculates 231 LUM and 145 train miles, resulting in 1.6 locos per train).

¹¹¹ BNSF/UP.RP.WP.II-A-021.

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Item	AEPCO Opening Combined Move	Railroads' Reply Combined Move
escalation and date		
16. Cars per train or per shipment	112.2	112.2
17. Loaded miles (excluding loop track)	BNSF--247.1 UP--148.4	BNSF--244.1 UP--145.6 SWRR--54.3
18. Empty miles	See Item 17	See Item 17
19. Length of origin loop track	41.5 loaded 42.3 empty	41.5 loaded 42.3 empty
20. Length of destination track	4.1 loaded 5.4 empty	4.1 loaded 5.4 empty
21. Number of locomotives	4.87 on BNSF 4.78 on UP	4.87
22. Loading hours	Included in 24	Included in 24
23. Unloading hours	Included in 24	Included in 24
24. Cycle hours	64	78
25. Number of train sets	N/A	N/A
26. Trips/year per train set	N/A	N/A
27. Crew districts, loaded	See Below	See Below
28. Crew districts, empty	See Item 27	See Item 27
29. Turnaround crews	See Below	See Below
30. Locomotive units	See Item 21	See Item 21
31. Cars required (RR-owned)	See Below	See Below
32. Caboose	N/A	N/A
33. Locomotive spare margin	{ }	{ }
34. Car spare margin	10%	N/A
35. Caboose spare margin	10% (EOTDs)	10% (EOTDs)
36. Switching by road-haul locomotives	See Below	See Below
37. Switching by yard locomotives	See Below	See Below
38. Helper service	N/A	N/A
39. Helper crew	N/A	N/A
40. Location of interchanges	N/A	N/A
41. Location of inter- and intra-train switches	See Below	See Below
42. Joint facility payments	N/A	N/A

(1) Name of Mine and Power Plant (Item 1)

On opening, the Railroads and AEPCO developed costs for shipments originating at Lee Ranch Mine. In its opening submission, AEPCO also developed costs for shipments

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trains were being handled by SWRR, as well as the interchange time at each of Rincon and Deming. As a result of these omissions, AEPCO failed to include costs related to locomotive ownership.

AEPCO's first omission resulted from the fact that, in calculating cycle times for loaded trains, it "stopped the clock" on movements once they arrived in Deming on BNSF and did not "start the clock" until the loaded trains departed Deming for Apache Station on UP. Consequently, AEPCO's cycle time calculations unjustifiably omitted all of the time required to interchange the train at Deming. For the empty return, AEPCO committed the same error in reverse.

AEPCO's second omission was even more blatant and extreme. Once BNSF began using SWRR to handle AEPCO trains between Rincon and Deming, AEPCO entirely omitted all of the time between the train arrival in Rincon and the train departure from Deming. On empty movements, AEPCO entirely omitted the time between train arrival in Deming and train departure from Rincon. There is simply no basis for excluding the time associated with *more than 100 miles* of movement (as well as the interchange time) from the calculation of the locomotive costs of the AEPCO service.

AEPCO never explained its omission of this time. When the Railroads asked for workpapers to justify these omissions, AEPCO responded that the time "occurs over the Southwestern Railroad, not BNSF."¹¹² This response makes no sense. The locomotives on AEPCO trains remain in AEPCO service for the entire round-trip between the origin mines and

¹¹² BNSF/UP.RP.WP.II-A-047.

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Apache Station, and the Railroads are entitled to recover locomotive ownership costs for the entire movement.

The Railroads' cycle times are based on BNSF train movement data produced in discovery. The use of a single data source avoids inconsistencies introduced by AEPCO's attempt to match BNSF and UP data, and it allows the capture of all time, including periods when the trains were handled by SWRR.

The Railroads continue to rely on their evidence of cycle times in this Reply.

(16) Caboose and EOTD Ownership Expenses (Item 16)

The parties disagree slightly in their calculation of EOTD ownership expenses. First, AEPCO understated EOTD costs because it used incomplete cycle times and a general overhead ratio that improperly excluded the Railroads' investments reported to Account 90. These differences are discussed in sections II.A.1.b.(13) and II.A.1.a.(2). Next, the parties' unit costs differ because AEPCO included UP's EOTD costs. By contrast, similar to their treatment of locomotive costs, the Railroads used BNSF's EOTD investments for the entire movement, since BNSF supplies virtually all of the locomotives used in the New Mexico movement. Finally, when developing its average price for BNSF's EOTDs, AEPCO excluded from its calculation the purchase of 173 units that was documented in the discovery materials.¹¹³

(17) SWRR Handling Charge (Item 17)

The differences in the parties' treatment of the SWRR handling charge are discussed above in Section II.A.1.a.(3).

¹¹³ Compare AEPCO electronic workpaper "BNSF EOTD.123" with BNSF/AEPCO 01724, included in BNSF/UP opening electronic workpaper "BNSF EOTD Data 2001.123."

(18) Indexing

Differences between the parties' quarterly indices primarily result from AEPCO's reliance on inappropriate source indices and application errors.

First, while the Railroads used the AAR's December 2002 index publication as the starting point for its group indices, AEPCO employed an earlier (September 2002) version. By incorporating the AAR's forecasts used to determine the RCAF, and not the AAR's more current indices, AEPCO's data are inconsistent and stale. In this Reply, the Railroads update their index calculations with the AAR's March 2003 index publication and current PPI materials.

Second, in developing its quarterly indices, AEPCO used the annual "Wage Rates" index and "Wage Supplements" index. As explained in the AAR source materials, these annual indices are inappropriate sources for developing quarterly costs in that same year.¹¹⁴ The Railroads' use of the average of the four quarters' values is the better evidence of record for the development of the base "Wage Rates" and "Wage Supplements" indices.

Third, AEPCO also improperly used the AAR's "Fuel" indices to develop its variable fuel costs. The Railroads used BNSF's actual fuel cost per gallon in each quarter, obtained from publicly available financial reports. For this Reply, the Railroads have updated fuel costs using BNSF's specific fuel cost per gallon in each of the quarters for which variable costs are determined.

A fourth error in AEPCO's index application relates to crew wages. Despite the fact that its special study of UP train crew wages produced results that are specific to each quarter in 2001, AEPCO's variable cost program applied an index to the special study results. In

¹¹⁴ See, e.g., BNSF/UP.RP.WP.II-A-090.

fact, both parties made this error in their opening filings. While the Railroads' errata fixed the problem in the calculations for BNSF and UP, AEPCO submitted a corrected cost program for only BNSF.

A minor difference between the parties is due to an input error in the Railroads' development of BNSF's indices. Specifically, BNSF's T&E wage expenses for 2001 were overstated by \$300,000, which produced an understatement of non-T&E wages used to calculate certain indices. BNSF corrects the error in this Reply.

Finally, as explained above in section II.A.1.a.(1), in this Reply the Railroads calculate variable costs for 1Q02 and later periods based on 2002 URCS costs. To index base-year 2002 costs to each quarter of 2002 and 1Q03, the Railroads utilize the same approach that they used to calculate the indices for each quarter of 2001 that was submitted on opening.¹¹⁵

2. Rate and Resulting R/VC Calculations

Tables BNSF/UP II.A-10 and BNSF/UP II.A-11 present the rates, variable costs, and resulting R/VC calculations for the AEPCO traffic that moved under the challenged rates from 1Q01 through 1Q03 for Lee Ranch and McKinley, respectively.

¹¹⁵ BNSF/UP.RP.WP.II-A-083 to 146 and BNSF/UP Reply electronic workpapers "BNSF-02-IE3-Index-Reply.123" and "UP-02-IE3-Index-Reply.123."

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Table BNSF/UP II.A-10
Rates, Variable Costs Per Net Ton, and R/VC Ratios
For Shipments from Lee Ranch to Apache Station

Period	Rate	AEPKO Opening		Railroads Reply	
		Variable Cost	R/VC Ratio	Variable Cost	R/VC Ratio
98-Ton Rate					
1Q01	\$9.35	\$4.26	219%	\$5.28	177%
2Q01	\$9.35	\$3.85	243%	\$4.79	195%
3Q01	\$9.35	\$3.97	236%	\$5.14	182%
4Q01	\$9.35	\$3.44	259%	\$5.26	178%
1Q02	\$9.54	\$3.12	292%	\$4.94	193%
2Q02	\$9.54	\$3.33	273%	\$5.07	188%
3Q02	\$9.54	\$3.32	274%	\$4.93	194%
4Q02	\$9.54	No Shipments Under Challenged Rate			
1Q03	\$9.73	No Shipments Under Challenged Rate			
115-Ton Rate					
1Q01 – 4Q01	\$9.05	No Shipments Under Challenged Rate			
1Q02 – 2Q02	\$9.23	No Shipments Under Challenged Rate			
3Q02	\$9.23	\$2.84	311%	\$4.37	211%
4Q02	\$9.23	\$2.92	303%	\$4.37	211%
1Q03	\$9.41	\$2.95	300% ¹¹⁶	\$4.52	208%

Table BNSF/UP II.A-11
Rates, Variable Costs Per Net Ton, and R/VC Ratios
For Shipments from McKinley to Apache Station

Period	Rate	AEPSCO Opening		Railroads' Reply	
		Variable Cost	R/VC Ratio	Variable Cost	R/VC Ratio
98-Ton Rate					
1Q01 – 4Q01	\$9.35	No Shipments Under Challenged Rate			
1Q02	\$9.54	No Shipments Under Challenged Rate			
2Q02	\$9.54	\$3.87	235%	\$5.85	163%
3Q02	\$9.54	\$3.69	246%	\$5.50	173%
4Q02	\$9.54	No Shipments Under Challenged Rate			
1Q03	\$9.73	No Shipments Under Challenged Rate			
108-Ton Rate					
1Q01 – 4Q01	\$9.05	No Shipments Under Challenged Rate			
1Q02 – 2Q02	\$9.23	No Shipments Under Challenged Rate			
3Q02	\$9.23	\$3.34	264%	\$4.78	193%
4Q02	\$9.23	\$3.59	246%	\$5.17	178%
1Q03	\$9.41	\$3.54	249% ¹¹⁶	\$5.20	181%

¹¹⁶ AEPCO R/VC calculations for the 1Q03 are based on the year-2002 rate of \$9.23 instead of the correct rate of \$9.41.

**IV. Witness Qualifications
and Verifications**

IV. WITNESS QUALIFICATIONS AND VERIFICATIONS

1. Paul J. Bendon, Jr.

Paul J. Bendon, Jr., is Director-Property Accounting for Union Pacific Railroad Company ("UP"). As UP's Director-Property Accounting, he manages and directs all aspects of the property accounting function, including proper accounting for capital expenditures, real estate transactions, and depreciation.

He has been employed with UP since 1973, and he held positions in costing and profit measurement before being promoted to his current position in 1990. He is a graduate of Bellevue University, where he earned a B.A. in Business Administration with a concentration in Accounting.

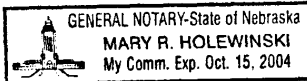
Mr. Bendon has previously submitted testimony to the Surface Transportation Board in Docket No. 42051, *Wisconsin Power & Light Co. v. Union Pacific Railroad Co.*, and Docket No. 42059, *Northern States Power Company Minnesota v. Union Pacific Railroad Co.* In both proceedings he sponsored evidence relating to UP's valuation section records.

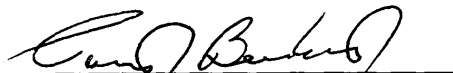
In this filing, as he did on opening, Mr. Bendon is sponsoring evidence relating to the information contained in UP's valuation section records. His evidence addresses why those records do not provide an accurate measure of UP's investment in road property used to provide service on UP's lines between Deming, New Mexico, and Apache Station in Cochise, Arizona. His evidence is incorporated in Section II.A.1.c.(6)(b) of the Narrative. Mr. Bendon has signed a verification of the truth of the statements contained therein. A copy of Mr. Bendon's verification is attached hereto.

STATE OF NEBRASKA)
) ss
COUNTY OF DOUGLAS)

VERIFICATION

Paul J. Bendon, Jr., being duly sworn, deposes and says that he has read the Reply Evidence that he has sponsored, as described in his foregoing Statement of Qualifications, and that the contents thereof are true and correct to the best of his knowledge and belief.




Paul J. Bendon, Jr.

Subscribed and sworn to before me on this 22 day of May, 2003.


Notary Public

My Commission expires: October 15, 2004

2. Richard C. Ellis

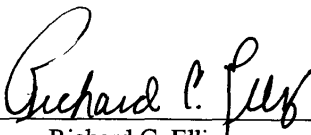
Richard C. Ellis is Assistant Vice President, Unit Train Operations of The Burlington Northern and Santa Fe Railway Company ("BNSF"). His business address is 2600 Lou Menk Drive, Fort Worth, Texas 76131-2830. He has responsibility for all unit train operations on the BNSF.

He has been employed by BNSF and its predecessors since 1972, spending his entire career in operations. He has been in management positions since 1978, most of which have involved management of unit coal train operations. He has extensive experience in unit coal train operations both at the origination and at the delivery end of particular movements. He was Terminal Superintendent at BNSF's Alliance, Nebraska Yard from 1984-88 and at the Northport Yard in Minneapolis, Minnesota from 1988-92. He was the General Superintendent in Minneapolis from 1992-96. He was the Assistant Vice-President, Transportation for the BNSF system in Fort Worth from 1996-97. He has held his current position since 1997. In that position, he has had responsibility for unit coal train operations originating at New Mexico mines.

Mr. Ellis is sponsoring evidence relating to the operation of BNSF unit coal train service between various New Mexico mines and the interchange with the Southwestern Railroad at Rincon, New Mexico. His evidence is incorporated in Sections II.A.1.b.(14), (19), (20) and II.A.1.c.(3) of the Narrative. Mr. Ellis has signed a verification of the truth of the statements contained therein. A copy of Mr. Ellis's verification is attached hereto.

I declare under penalty of perjury that I have read the Reply Evidence that I have sponsored, as described in the foregoing Statement of Qualifications, and that the contents thereof are true and correct. Further, I certify that I am qualified and authorized to sponsor this testimony.

Executed on May 22, 2003


Richard C. Ellis

3. Benton V. Fisher

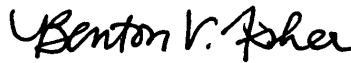
Benton V. Fisher is a Director at FTI Consulting, Inc., an economic and financial consulting firm. His business address is 1201 Eye Street, N.W., Suite 400, Washington, DC 20005. Since 1991, Mr. Fisher has been involved in various aspects of transportation consulting including economic studies involving costs and revenues, traffic and operating analyses, and work with performance measurement and financial reporting systems.

Mr. Fisher holds a Bachelor of Science in Engineering degree from Princeton University. In 1991, he joined Klick, Kent & Allen, Inc. ("KK&A"), which was acquired by FTI Consulting, Inc. in 1998. While with KK&A and FTI, Mr. Fisher has performed numerous analyses for and assisted in the preparation of expert testimony related to merger applications, rate reasonableness proceedings, contract disputes, and other regulatory costing issues before the Interstate Commerce Commission, Surface Transportation Board, Federal Energy Regulatory Commission, Postal Rate Commission, Federal Court, and State Utility Commissions.

Mr. Fisher is sponsoring evidence relating to BNSF's and UP's variable costs for the issue movement. His evidence is contained in Section II.A of the Narrative. Mr. Fisher has signed a verification of the truth of the statements contained therein. A copy of Mr. Fisher's verification is attached hereto.

I declare under penalty of perjury that I have read the Reply Evidence that I have sponsored, as described in the foregoing Statement of Qualifications, and that the contents thereof are true and correct. Further, I certify that I am qualified and authorized to sponsor this testimony.

Executed on May 23, 2003

A handwritten signature in black ink, reading "Benton V. Fisher". The signature is written in a cursive style with a large initial "B".

Benton V. Fisher

4. Mark J. Gallagher

Mark J. Gallagher is Director-Budgets, Administration, and Planning for Union Pacific Railroad Company ("UP"). As UP's Director-Budgets, Administration, and Planning, he oversees the operating and capital expense budget for UP's Mechanical Department.

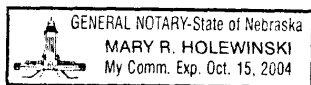
Mr. Gallagher has been employed with UP since 1976. He began his career as an auditor after receiving a B.S.B.A. in Accounting from Creighton University. From 1979 through 1991, he held positions of increasing responsibility in UP's Finance Department. In 1991, he joined the Mechanical Department. He assumed his current position in 1995.

Mr. Gallagher is sponsoring evidence relating to UP's study of locomotive outsourcing that AEPCO attempted to use to adjust UP's URCS system-average costs for locomotive maintenance. His evidence is incorporated in BNSF/UP Reply Exh. II.A-5. Mr. Gallagher has signed a verification of the truth of the statements contained therein. A copy of Mr. Gallagher's verification is attached hereto.

STATE OF NEBRASKA)
) ss
COUNTY OF DOUGLAS)

VERIFICATION

Mark J. Gallagher, being duly sworn, deposes and says that he has read the Reply Evidence that he has sponsored, as described in his foregoing Statement of Qualifications, and that the contents thereof are true and correct to the best of his knowledge and belief.



Mark J. Gallagher
Mark J. Gallagher

Subscribed and sworn to before me on this 20 day of May, 2003.

Mary R. Holewinski
Notary Public

My Commission expires: October 15, 2004

5. Dale W. Salzman

Dale W. Salzman is Director-Transportation Research for Union Pacific Railroad Company ("UP"). As UP's Director-Transportation Research, he is responsible for conducting studies of rail operations for various railroad departments.

Mr. Salzman began his career in 1965 with Missouri Pacific. Since 1974, he has been employed at UP in a variety of transportation management positions. He assumed his current position in 1996.

Mr. Salzman has been involved in many rail consolidation cases and has submitted testimony to the Interstate Commerce Commission and the Surface Transportation Board on a number of occasions, including the Union Pacific/Southern Pacific merger proceeding and the *FMC Wyoming Corp. v. Union Pacific Railroad Co.* and *Wisconsin Power & Light Co. v. Union Pacific Railroad Co.* rate reasonableness proceedings. More recently, he submitted testimony to the Surface Transportation Board in Docket No. 42059, *Northern States Power Company Minnesota v. Union Pacific Railroad Co.* In that testimony, he described how UP moved the shipper's coal trains between the Powder River Basin in Wyoming and the Twin Cities area in Minnesota.

In this filing, as he did on opening, Mr. Salzman is sponsoring evidence relating to the operation of UP unit coal train service between Deming, New Mexico, and Apache Station in Cochise, Arizona. His evidence is incorporated in Sections II.A.1.b.(19) and (20), and Sections II.A.1.c.(3) and (15)(c) of the Narrative. Mr. Salzman has signed a verification of the truth of the statements contained therein. A copy of Mr. Salzman's verification is attached hereto.

STATE OF NEBRASKA)

) SS

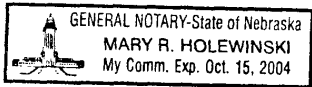
COUNTY OF DOUGLAS)

VERIFICATION

Dale W. Salzman, being duly sworn, deposes and says that he has read the Reply

Evidence that he has sponsored, as described in his foregoing Statement of Qualifications, and

that the contents thereof are true and correct to the best of his knowledge and belief.



Dale W. Salzman

Subscribed and sworn to before me on this 22 day of May, 2003.

Mary R. Adamson
Notary Public

Notary Public

My Commission expires: October 15, 2004

Exhibits

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UP Locomotive Maintenance Costs

The Railroads did not use UP costs to develop maintenance costs for locomotives used on AEPCO trains because BNSF supplied the overwhelming majority of locomotives. AEPCO used UP and BNSF costs to develop a weighted average maintenance cost, but it developed an adjustment to UP system-average URCS costs that understated UP's road locomotive maintenance costs. Thus, even if UP costs were relevant, AEPCO used costs that were incorrect.

AEPCO based its adjustment to UP system-average URCS costs on a study prepared in connection with a maintenance outsourcing proposal, which UP produced in discovery. *See* AEPCO Op. at II-A-39. That study, however, was not designed to reflect UP's variable locomotive maintenance costs. As UP explained when it produced the study to AEPCO, the purpose of the study was to help evaluate a particular outsourcing proposal, and UP did not rely on it even for that purpose.¹

There are many reasons why the outsourcing study fails to provide a reliable source of information for the development of movement-specific adjustments to UP's URCS system-average road locomotive maintenance costs.² UP manages locomotive maintenance costs

¹ *See* Union Pacific's Objections and Responses to Complainant's Amended and Supplemented Interrogatories and Request for Production of Documents, *reproduced in* AEPCO Op. Workpapers Vol. 4, p. 01940 ("Subject to and without waiving its objections, UP states that it has located a special study conducted for purposes of considering maintenance outsourcing alternatives . . .").

² The factual information in this section is sponsored by Mark Gallagher, Director, Budgets, Administration & Planning in UP's Mechanical Department, who supervised the outsourcing study.

by shop, and it does not have systems in place to track maintenance costs accurately by locomotive unit or model. The study results reflect allocations based on the very limited information that was available, not actual costs associated with particular units or models.

Even if the information in the study were accurate, it could not be used to adjust UP's URCS system-average road locomotive maintenance costs, because it includes yard and switch locomotives, which are not used to develop URCS road locomotive maintenance costs. The study also includes categories of costs, such as locomotive servicing and fringe benefits, that are not used to develop URCS road locomotive maintenance costs. Finally, AEPCO improperly reduced UP's costs by using locomotive days rather than locomotive miles to develop a weighted-average maintenance cost per mile for UP locomotives in AEPCO service. URCS calculates road locomotive maintenance costs on a per-mile basis, not per-day.

A. UP's Outsourcing Study Does Not Provide a Reliable Measure of Repair Costs by Locomotive Model

UP produced the outsourcing study in discovery because it fell within the broad scope of AEPCO's requests for information about locomotive maintenance costs, not because it provides an accurate measure of the costs appropriate for this proceeding.³ The study was not designed to be used as AEPCO attempted to use it. Indeed, the study contains significant limitations that render it unreliable as a basis for adjusting URCS locomotive maintenance costs.

³ See, e.g., *Public Serv. of Colorado v. The Burlington Northern & Santa Fe Ry.*, STB Docket No. 42057 (STB served Sept. 25, 2002), slip op. at 2-3 ("the possibility of defects in the potential evidence is an issue that goes to the merits of the case, and it more appropriately addressed in the evidentiary phase of the proceeding"). AEPCO bears the burden of demonstrating that its use of the outsourcing study produces results that are superior to those produced by unadjusted system-average URCS costs. See *WPL I* at 54; *FMC* at 79.

In particular, (a) the vast majority of dollars reflected in the study are allocated to locomotive models on the basis of limited, and recognizably incomplete, data; (b) the study excludes overhaul costs (which URCS includes) and includes servicing (which URCS excludes); (c) the study considers only locomotive miles, not gross tons hauled, whereas URCS costs are allocated on the basis of both locomotive unit-miles and gross ton-miles; and (d) the study predates the shipments of AEPCO's coal under the rates at issue in this proceeding.

1. UP Does Not Have Accurate Records of Maintenance Expenses by Locomotive Model

Because UP does not have specific records of maintenance expenses by locomotive model, the dollars reflected in the outsourcing study are largely based on allocations.⁴ In practice, UP can attribute only a fraction of labor and materials costs directly to a specific locomotive unit. The amount, which varies by shop and by maintenance activity, depends on whether employees recorded accurate locomotive unit identification numbers as their work progressed throughout the day. In developing labor costs for the study, UP used employee time records that were associated with specific locomotive units in its Equipment Data Collection System and Labor Data Collection System ("EDCS/LDCS"). The study allocated to UP's various locomotive models the remaining "direct labor" costs that were not associated with specific locomotive units based on the percentage of the "direct labor" costs that were associated with specific units. UP also allocated to the various models "headquarters" and "indirect/

⁴ According to Mr. Gallagher, when it designed the study, UP understood that these allocations made the study unreliable, and thus it used the study as only one of many information sources in making decisions about outsourcing locomotive maintenance.

overhead labor” costs based on the allocation of “direct labor” costs. In the study, out of {
} total labor costs, { }, or fully 60.8 percent, was based on allocations.⁵

The EDCS/LDCS systems, which some UP employees use to record the time spent on their assignments throughout the day, are in place at approximately 17 of the 60 locations at which UP mechanical forces perform locomotive maintenance work. The primary use of these systems is to track labor hours reported for payroll purposes. Employees are instructed, but not required, to enter in these systems the unit number of the locomotive on which they are working, and to enter new unit numbers as they change assignments during the day. Many employees do not enter a unit number, enter a unit number at the beginning of the day and keep the same number even as they change assignments, or enter a number that does not correspond with any actual locomotive.

In conducting the study, UP did not attempt to correct for any errors or omissions in EDCS/LDCS records. If an employee did not enter a new unit number when he or she changed jobs, the study includes all of his labor under the original number. If records contained no unit number or the unit number did not correspond with an actual locomotive, those dollars were allocated on the basis of other units that were specifically identified.

UP followed a similar approach in developing material costs. UP’s Material Management System (“MMS”) contains a function that allows employees to record the unit identification number of locomotives for which parts are requisitioned. This function is available only at UP’s nine major locomotive shops. In the study, UP used the requisitions that were

⁵ AEPCO Electronic Workpaper “UP Loco Maint Adjust 2001.123.”

matched with unit numbers to allocate material costs that were not associated with a unit number.

Out of { } in material costs, { }, or fully 38.2 percent, was based on allocations.⁶

As with EDCS/LDCS, even when dollars are associated with units, the information is not perfect. UP employees often do not enter unit numbers, and even when they do, the numbers are rarely checked for accuracy. Moreover, MMS is a requisition system – unit numbers are entered when materials are ordered, not when those materials are installed in a locomotive, so there can be instances in which parts are ordered for one locomotive but used for another. In addition, employees will often place a bulk order for parts using a single unit number. The last two issues would not matter if the locomotive models listed in UP's outsourcing study all used different parts, but many use the same parts. For example, there are no major differences between the locomotives listed as C44AC, C44AC (SP PBYM), and C44AC (CNW MCPP). Indeed, many parts in C44ACs and C44-9Ws are interchangeable. For outsourcing purposes, UP has no reason to distinguish between the model types, so the flaws are unimportant. AEPCO, however, relied on these distinctions in calculating its adjustment to URCS costs. With respect to both labor and materials, the data do not allow for such fine distinctions.

⁶ AEPCO Electronic Workpaper "UP Loco Maint Adjust 2001.123." In addition, the "servicing" portion of the study allocates { } of labor, material, purchased services, and headquarters and indirect/overhead expenses to locomotive models solely on the basis of the number of servicings for each model. *See id.*

2. The Study Uses Data That Do Not Tie to UP's URCS Costs

AEPCO's adjustment is improper for the additional reason that it relies on cost categories that are different from those used to develop the URCS system-average locomotive maintenance cost that AEPCO adjusted. The outsourcing study includes some categories of costs that are not used to calculate UP's URCS road locomotive maintenance costs, and it excludes other categories of costs that are used to calculate URCS costs. The disconnect is readily apparent. The outsourcing study allocates a total of { } in maintenance costs to the locomotives UP used, and it also notes an additional { } related to overhauls, which UP reports on line 202 of Schedule 410, but which were not allocated in the study.⁷ By contrast UP reported only \$439.4 million as freight locomotive "Repair & Maintenance" costs on line 202 of Schedule 410 to its 2000 Annual Report R-1, which provides the input used to calculate UP's URCS road locomotive maintenance costs.

The difference between the total costs reported in the outsourcing study and the total costs reported on line 202 of Schedule 410 is due to the different purposes of these sources. For example, the outsourcing proposal did not include overhauls, so the study excludes overhaul costs, even though those costs are included in URCS locomotive maintenance costs. Other categories of costs were included in the study because they were part of the outsourcing proposal, even though they are not included in URCS locomotive maintenance costs. For example, the study includes wages related to servicing locomotives, which are reported as "Servicing Locomotives" on line 411 of Schedule 410. This is a transportation account, not a

⁷ AEPCO Electronic Workpaper "UP Loco Maint Adjust 2001.123."

locomotive maintenance account, and it is not included in the URCS cost that AEPCO adjusted. The study also includes medical benefits, retirement plan benefits, and railroad taxes, which are reported as “Fringe Benefits” in various lines on Schedule 410; shop machinery labor, which is reported as “Shop Buildings Locomotives” in line 28 on Schedule 410; and certain materials for servicing locomotives, which are reported in “Train Inspection & Lubricants” and “Servicing Locomotives,” in lines 408 and 411, respectively.

3. The Study Does Not Include Information That Would Permit an Adjustment of URCS Gross Ton-Mile Costs Associated With Locomotive Maintenance

AEPCO’s adjustment is also improper because it attributed the costs only to locomotive miles. URCS apportions road locomotive maintenance costs between gross ton-mile (“GTM”) expenses and locomotive unit-mile (“LUM”) expenses. However, UP’s outsourcing study does not contain any information that can be used to relate the maintenance costs it reflects with gross ton-miles. The study provides only the number of miles associated with the various locomotive models. Even if the study provided a reliable means of comparing maintenance costs for locomotives in AEPCO service with UP’s system-average costs on a mileage basis, it provides no means for comparing the same costs on a gross ton-mile basis. In the absence of supporting evidence, the Board cannot assume that maintenance costs for locomotives in AEPCO service will merit the same adjustment to system-average LUM and GTM costs. It thus should reject AEPCO’s evidence regarding adjustment of the locomotive maintenance component of URCS GTM expenses.

4. The Study Reflects a Limited and Inappropriate Time-Frame

AEPCO's use of UP's outsourcing study to adjust URCS was also inappropriate because the study reflects the maintenance costs for only a single year. The 2000 maintenance costs AEPCO used as the basis for adjusting URCS road locomotive maintenance costs do not reflect UP's actual costs in 2001, 2002, and 2003 – the years in which the issue traffic actually moved. Nor are the 2000 costs necessarily representative of UP's locomotive maintenance costs in subsequent years. URCS road locomotive maintenance costs are based on a three-year average to account for the longer-term cost cycle for locomotive maintenance and the fact that railroads have some flexibility about when to engage in locomotive maintenance.

B. AEPCO Erroneously Included Yard and Switch Locomotives in Calculating Its Baseline for the Adjustment to UP's URCS Costs

AEPCO's special study adjusted UP's URCS system-average road locomotive maintenance cost by comparing the cost of maintaining locomotive models in AEPCO service with the cost of maintaining all of UP's locomotive models. The few UP locomotives used in AEPCO service were road locomotives – C44ACs, C44-9s and GP60s. By constructing its adjustment factor with a baseline that includes both road locomotives and yard and switch locomotives, AEPCO reduced the adjustment factor, thereby understating the relative cost of maintaining the road locomotives in AEPCO service.

UP's outsourcing study includes maintenance data for both road and yard locomotives. In developing its adjustment factor, AEPCO did not remove the yard locomotives from the study. Instead, it developed a numerator based on maintenance costs for the road locomotives in AEPCO service and a denominator based on maintenance costs for all UP

locomotives (both road and yard locomotives). AEPCO used the resulting percentage to reduce UP's URCS system-average road locomotive maintenance costs by more than twenty percent.

C. AEPCO Used an Inappropriate Measure to Develop Weighted Costs

AEPCO's adjustment to UP's URCS system-average road locomotive maintenance costs is flawed for the additional reason that it is based on the number of days particular models operated in AEPCO service, rather than the number of miles the locomotives operated in AEPCO service. As discussed above, URCS calculates road locomotive maintenance costs in part based on locomotive unit miles and in part based on gross ton-miles. It does not allocate locomotive maintenance costs on the basis of time.⁸ The result of allocating costs on the basis of time, rather than locomotive unit miles, is to shift a higher percentage of locomotive utilization to lower-cost locomotives. Weighting locomotive maintenance costs on a different measure than the one used to calculate URCS system-average costs is inappropriate. AEPCO's use of locomotive days rather than LUMs to develop its weighted-average cost per mile appears to serve no purpose other than to reduce AEPCO's locomotive maintenance costs even further below system average.

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Because there is no reasonable way to correct the problems identified above, AEPCO cannot carry its burden of proving that its adjustment produces results that are superior to unadjusted URCS system-average costs. The Railroads continue to use BNSF costs only in

⁸ AEPCO's use of days would be more appropriate if it were applied to yard locomotives, because URCS develops those costs based on switch-engine-minutes.

calculating locomotive maintenance costs for this Reply, but if the Board determines that UP costs should be used, it should use UP system-average costs.