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April 14, 2004

BY HAND DELIVERY

The Honorable Vernon A. Williams
Secretary
Surface Transportation Board
1925 K Street, N.W.
Room 711
Washington, D.C. 20423-0001

ENTERED
Office of Proceedings

APR 14 2004

Part of
Public Record



Re: Docket No. 42070, Duke Energy Corporation
v. CSX Transportation, Inc.

Dear Secretary Williams:

Enclosed for filing in the above-referenced proceeding please find an original and sixteen copies of Duke Energy Corporation's ("Duke") Reply to the Petition for Reconsideration filed by CSX Transportation, Inc. In addition, we have enclosed three disks which each include a copy of Duke's reply in WordPerfect 9.0 format.

Finally, an extra copy of the reply is enclosed. Kindly indicate receipt and filing by time-stamping this copy and returning it to the bearer of this letter. Thank you for your attention to this matter.

Sincerely,

Robert D. Rosenberg

Robert D. Rosenberg

Enclosures

cc: Counsel for Defendant

BEFORE THE
SURFACE TRANSPORTATION BOARD

210594

DUKE ENERGY CORPORATION

Complainant,

v.

CSX TRANSPORTATION, INC.

Defendant.

Docket No. 42070



ENTERED
Office of Proceedings

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REPLY TO
PETITION FOR RECONSIDERATION

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Date Due: April 14, 2004

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**REPLY TO
PETITION FOR RECONSIDERATION**

Duke Energy Corporation (“Duke”) hereby files this reply to the March 25, 2004 petition for reconsideration (“Petition” or “Pet.”) filed by CSX Transportation, Inc. (“CSXT”) regarding the Board’s Decision served February 4, 2004 in this proceeding (“Decision”).

PREFACE

“For the good of the regulatory process,” CSXT has filed a petition for reconsideration in which it seeks a revision of several aspects of the Board’s Decision. See Pet. at 1. The fact of the matter is that CSXT’s petition is largely irrelevant to both the regulatory process and the outcome of Duke’s complaint case.

In the event that the Board fails to reconsider and revise its findings on SARR operating costs, CSXT’s points are meaningless.¹ If the Board corrects its analysis of SARR operating costs for the errors identified by Duke and/or reopens the record for supplemental evidence, CSXT’s points will also be irrelevant. In short, with a single exception, addressing the issues raised by CSXT is a waste of time.²

The exception relates to CSXT’s discussion of evidentiary fairness and the scope of permissible, new rebuttal evidence. Until recently, the Board accorded captive shippers “broad” latitude in presenting new evidence in SAC cases. See, e.g., Docket No. 41989, Potomac Electric Power Co. v. CSX Transp., Inc. (STB served Nov. 24, 1997), at 3 (the STB’s

¹ As matters now stand, the Decision permits CSXT to charge Duke over \$20.00 per ton for coal moving circa 350 miles in trainload service.

² Duke would be remiss if it did not explain to the Board that as a regulated investor-owned electric company, Duke engages in a classic lose/lose endeavor when it brings a rate case. Its owners pay the notorious costs for the case and any and all rewards go to the ratepayers. Accordingly, Duke’s incentive to respond to CSXT’s make-weight points is slight.

standard regarding rebuttal evidence “has been broadly interpreted and does not bar the introduction in rebuttal of new, but responsive, evidence and argument.”). Similarly, in Nevada Power, the agency stated that:

There is no bar to the presentation of new evidence on rebuttal, however, as long as it is responsive to the reply.

Docket No. 37038, Bituminous Coal – Hiawatha, Utah to Moapa, Nevada (ICC served Dec. 7, 1988), at 4.

Recently, however, the Board has restricted the scope of permissible rebuttal evidence. See Decision at 13. In considering CSXT’s evidentiary fairness claims, the Board should also consider the root cause of most evidentiary disputes in SAC cases; namely, the failure of the carrier to produce meaningful data in a timely fashion. Because captive shippers are compelled to assemble their opening cases with only a “half-deck” of the necessary information possessed by the railroad, the need to introduce new evidence on rebuttal is inevitable and the Board needs to better understand the situation.

The record in this proceeding offers a classic case. CSXT ignored the discovery deadlines and failed to produce usable traffic data until slightly more than a month before Duke’s opening evidence was due. See Duke Op. at I-11; Duke Reb. at I-7. The Board bemoans the challenges of deciding these cases in 9+ months, but these challenges pale in comparison to the burden placed upon a shipper to assemble its entire affirmative case in one month. When the Guidelines were adopted, it was recognized that the key to their success was shipper access to information. See Coal Rate Guidelines, Nationwide, 1 I.C.C.2d 520, 549 (1985) (Chairman Taylor, commenting). In administering the Rules of Practice on the scope of rebuttal evidence, captive shippers should be given great leeway in situations where, as here, the defendant railroad

has failed to divulge crucial data on a timely basis. Any pronouncements by the Board about the scope of permissible rebuttal evidence should be accompanied by directives that the railroads produce usable data within the allotted time for discovery. If the railroads produce the requisite data on a timely basis, the need for new rebuttal evidence will diminish or disappear.

ARGUMENT

Under 49 C.F.R. § 1115.3(b), reconsideration is appropriate only where: (1) the prior action will be affected materially because of new evidence or changed circumstances; and/or (2) the prior action involves material error. See Docket No. 42006, Omaha Pub. Pwr. Dist. v. Union Pac. R.R. (STB served Nov. 15, 2000), at 2.

A. Traffic and Revenue

CSXT contends that the Board erred in its SARR volume forecasts by using EIA's AEO 2002 and AEO 2003 Reports instead of more recently published volume forecasts. See Pet. at 2. Specifically, CSXT faults the Board for failing to rely upon EIA's AEO 2004 Report, which – by CSXT's own admission – was released only “three weeks” before the Decision. Id. In support of its claim that the Board erred by failing to pro-actively monitor the EIA's issuances during its final preparations of the Decision, CSXT states that the Board “should rely upon the most up-to-data (sic) government forecast available prior to the issuance of a final decision.” Id. at 3.

Significantly, in its February 4, 2004 Decision, the Board explicitly found that the AEO 2004 Report “was released too late to be relied upon in this decision.” See Decision at 47. Consistent with this finding, ample precedent recognizes that it is fundamentally necessary and appropriate for an agency in complex and lengthy agency proceedings to have the discretion to

the Board has already determined that Duke did in fact meet its burden of proof. See Decision at 79.

1. 3 CY Shovel

Contrary to CSXT's statements (Pet. at 4), Duke did not concede on rebuttal that its opening equipment selections were improper. Rather, Duke merely demonstrated that different, larger equipment than it utilized in its opening evidence could also do much of the same work for similar costs. See Duke Reb. at III-F-42 to 43. Indeed, the Board properly recognized the similarities in cost and equipment by accepting Duke's 3 CY power shovel as the appropriate equipment for common earthwork north of Bostic and for excavating and loading blasted rock. As demonstrated below, the Board's Decision on these issues is well supported.

First, Duke notes that CSXT apparently has abandoned its erroneous position that it took at oral argument (i.e., that Duke's 3 CY shovel is a crane and not a shovel). CSXT now takes a new and untenable position that a shovel is not capable of both excavating common earth and loading blasted rock into dump trucks. CSXT's new argument is without merit.

CSXT suggests that Duke has not shown that a 3 CY shovel is suitable for loading blasted rock. However, in its January 15, 2003 brief (at 11), CSXT argued (albeit for other purposes) that Duke's rebuttal earthmoving equipment was improper for use by the SARR because it was designed for quarrying operations. Quarrying, of course, consists principally of moving rock, but now for the purposes of reconsideration, CSXT suggests that the shovel is inadequate for the very purpose CSXT previously specified. Even beyond CSXT's contradictory positions, Means itself notes the shovel's suitability for loading blasted rock. In particular, Means states that "[p]ower shovels are primarily used for earth, sidehill cuts; unrippable, blasted,

solid rock cuts; and mixed rock/large boulder/earth cuts.” See Means Heavy Construction Handbook at 240 (attached hereto as Exhibit 1) (emphasis added).

CSXT also claims that Duke has wrongly assumed that the cost and production rates of using the 3 CY shovel for both activities would be similar. The record shows otherwise. In particular, Duke used two different Means costs for the 3 CY shovel: (i) line item 2315-400-3900, 3 CY shovel for excavating, which assumed a cost of \$1.07 per CY and a daily output of 2,000 CY; and (ii) line item 02315-340-5200, excavate and load blasted rock, 3CY power shovel, which assumed a cost of \$1.40 per CY (or 31% greater) and a daily output of 1,530 CY. See Duke Reb. Workpapers Vol. 1, pp. 0153 and 0152, respectively. Duke selected the proper cost item in each case. CSXT’s suggestion that the Means costs and production rates are wrong, simply because they are somewhat similar, has no basis and should be rejected.

CSXT also attempts to revive an argument it raised in reply that Duke’s SARR would have to move boulders and not blasted rock. See CSXT Reply at III-F-27 and Duke Reb. at III-F-52 to 53 for Duke’s response. CSXT’s attempt to revert to its boulder loading costs should be rejected because: (a) the Board accepted Duke’s solid rock costs, which included moving blasted rock not boulders (see Decision at 82); and (b) CSXT has raised no new arguments justifying its boulder-loading approach.

Duke also notes that CSXT’s boulder moving costs do not assume the moving of blasted rock at all. Rather, CSXT’s costs merely assume the excavating and loading of boulders – apparently without the benefit of blasting.³ Duke’s costs, on the other hand, are based on the

³ The fact that blasting was not included in the boulder moving costs posited by CSXT was recently confirmed by the publisher of Means. See Supplemental Rebuttal filing of Arizona Electric Power Coop., Inc., p. III-F-54 (Docket No. 42058, public version, filed April 2, 2004).

excavating and loading of blasted rock without any specific rock size limit. Since Duke has included the considerable costs associated with blasting, its costs for loading that blasted rock are entirely appropriate.

As mentioned supra, CSXT is once again positing that Duke's SARR would have to move a wide range of sizes of rock after blasting, and therefore, that the Board should use the cost of moving boulders (i.e., the cost for moving rock is based on size and blasting therefore is irrelevant). This is the exact argument CSXT raised in its reply evidence, and which the Board rejected. Briefly summarized, the act of blasting rock makes it much easier to excavate and load, hence the lower unit cost for that activity in Means. CSXT has failed to offer any new rationale as to why that cost is inapplicable to the blasting the SARR will perform – except to proffer its costs for excavating unblasted boulders. Moreover, as noted supra, Means recognizes the benefits inherent in blasting.

Finally, Duke notes that the 3 CY shovel is even better suited to moving the occasional larger rock than the 2 ½ cubic yard front-end loader used by CSXT, because its bucket is larger, it can swivel on its base rather than having to turn around to load and dump as the front-end loader does, and it excels at rock face work, as CSXT itself conceded in its brief (at 9).

2. CSXT's Backhoe Excavator

CSXT also suggests that the Board should revisit its acceptance of Duke's equipment selections because Duke failed to meet its burden of proof by demonstrating that CSXT's proposed 3 CY hydraulic backhoe excavator was infeasible and unrealistic. See Pet. at

13.⁴ As Duke stated in its rebuttal at III-F-46, however, and as the Board recognized in its Decision, the primary use for a backhoe excavator is digging below grade. Therefore, it would be “relatively inefficient for other types of excavation,” including the excavation required here, which is almost exclusively at or above grade. See Decision at 79.

The Board’s view is overwhelmingly supported by third-party sources. For example, the Means Heavy Construction Handbook states that a backhoe “is used to cut trenches for pipe or other longitudinal structures, to dig foundations, or to do other digging that permits pulling the bucket close to the chassis.” See Exhibit 2 hereto. The Handbook even notes that a “backhoe can reach high enough to dump the bucket into many types of hauling machines (though not as efficiently as shovels/loaders)” – the very point the Board and Duke have already made. Id. (emphasis added).⁵

CSXT also raises a new argument that its excavator is not even a backhoe – suggesting somehow that Duke did not disagree with this point. See Pet. at 5-6. Duke is dumbfounded by CSXT’s claim. CSXT’s reply evidence clearly states that CSXT’s excavator is a backhoe. See CSXT Reply at III-F-23, where CSXT lists its unit cost from Means as

⁴ CSXT’s petition attempts to transform “infeasible” into “impossible,” rather than “impracticable,” and it further suggests that Duke’s agreement that using a backhoe was possible was tantamount to agreeing it was feasible or even desirable. While Duke does not deny that is *possible* to use a backhoe excavator to do the work for the SARR, it is not practical, realistic or economical for a project such as this.

⁵ CSXT has also suggested that its equipment is feasible because it is listed in the same earthmoving category in Means as Duke’s 3 CY shovel. This distinction is not relevant because there is little doubt that the excavator can move common earth. Here the question is whether that earth is below grade, which it is not. Consequently, CSXT’s equipment is not particularly suited to this task, even though it is listed among the same earthmoving equipment as Duke’s shovel.

“Backhoe, hydraulic crawler, 3-CY capacity.” The backhoe selected by CSXT is also discussed at pages 24 to 26 of its reply evidence.

By extension, CSXT suggests that its excavator is not among the equipment included in Means’ costs for trenching, and therefore any suggestion that it is better suited to trenching must be wrong. See Pet. at 6 and Exhibit A. Yet, on the first page of Exhibit A, items 02315-900-1030 and 02315-900-1330 list a “3 CY hydraulic backhoe” for digging 10' to 20' foot trenches. The crew type listed, B-12D, is exactly the same as the “Backhoe, hydraulic crawler, 3-CY capacity” that CSXT used in its reply. Aside from the slight variation in language, “Backhoe, hydraulic crawler” versus “Hydraulic Backhoe,” the equipment is the same. In other words, CSXT’s equipment is clearly listed in the trenching costs provided by Means despite CSXT’s protest to the contrary. Moreover, the unit cost associated with using the backhoe for trenching (10' to 14' ditches is \$2.16 per CY) is lower than the unit cost for using the backhoe for common earthwork (\$2.36 per CY), which demonstrates that the backhoe is better suited for digging, as the Board recognized in its Decision.

C. Operating Plan and Costs

1. SARR Operating Expenses

CSXT claims that the Board understated the SARR operating expenses by \$3.2 million per year due to two technical errors. First, CSXT claims that the Board developed peak-year operating statistics based on CSXT’s estimate of peak-year traffic rather than from the Board’s restatement of SARR traffic volumes. See Pet. at 10. Second, NS claims the Board applied an incorrect ratio to those peak-year operating statistics in calculating the SARR’s base-

year operating statistics. Id. at 10-11 (contending that the Board should have based its ratio on the 2002 to 2008 relationship in the evidence).

Duke agrees that the Board has erred with respect to the ratio issue, but not the peak year issue. The Board correctly developed the peak year 2008 statistics based on its restated tonnages, but in adjusting the statistics to reflect base year 2002 operations, the Board used a ratio based on CSXT's 2002 and 2004 reply tonnages. This understated the ratio and understated the base year operating statistics. The correct ratio should be developed based on the relationship of the Board's 2008 and 2002 restated tonnages.⁶ When the Board corrects the peak year to base year ratio calculation, the impact on the annual operating costs should flow through the calculations.

**2. The Board Properly Rejected
CSXT's Secret Fuel Consumption Study**

CSXT's final complaint, that the Decision erred when it rejected CSXT's "special study" of locomotive fuel consumption rates, is similarly without merit. The Board had ample justification for rejecting the results of that study; indeed it would have been error for the Board to do otherwise.

As Duke demonstrated on rebuttal (Duke Reb. at II-A-33 to 38), the CSXT fuel consumption study was rife with serious data anomalies that rendered its results wholly untrustworthy. Examples included widely fluctuating mileages captured for the same movement

⁶ CSXT's argument that the statistics need to be based on the "revised" peak year of 2008 has no merit. As long as the ratio between 2004 and 2002 is calculated properly, the costs for the ensuing years that are impacted by volumes are correctly increased (or decreased) based on the relationship of the tonnage volumes each year. To the extent that 2008 volume is higher, the operating costs will be correspondingly higher.

by CSXT's event recorders, with most samples showing significantly lower mileages than the actual timetable mileages for the segments in question; inclusion of fuel consumed during loading and unloading operations while excluding miles traversed during such operations; and unexplained (but extremely unlikely) "full throttle" operations recorded for extended periods while locomotives were located in yards or on Duke property. These manifest data recordation errors, which permeated CSXT's study, completely undercut the credibility of CSXT's fuel consumption study, even as an indicator of the actual fuel consumption rates on the movements included in the study.⁷

Moreover, even if the CSXT study results were reliable indicators of the fuel consumption rates experienced on the movements actually included in the study – and as discussed above, they were not – CSXT failed to demonstrate that those movements were substantially similar in all pertinent respects to the other movements included in the SARR traffic base. As Duke noted on both reply (at II-A-29 to 31) and rebuttal (at II-A-30), the Board has regularly rejected attempts by litigants in coal rate cases to extrapolate the results of special studies to other movements, absent that very demonstration; see, e.g., Docket No. 42051, Wisconsin Power & Light Co. v. Union Pacific R.R. (STB served Sept. 13, 2001), at 55; cf. Docket No. 36180, San Antonio, Texas v. Burlington Northern R.R., 1 I.C.C.2d 561 (1986), App. B at B-26.

⁷ For example, CSXT's fuel study data included widely divergent records of the distance that locomotives travel between the same two points on CSXT's system. See Duke Reb. II-A-34, Table II-A-20. In fact, one of those records indicated a distance that is only one quarter of the timetable distance between the same two points, thus reflecting either a serious recorder malfunction or else a data transcription error, and in any event undermining the credibility of the results and the study that included such results.

More broadly, the Board's longstanding policy has been to favor movement-specific adjustments to variable costs when, but only when, they are shown to be more accurate than system average costs. Thus in both West Texas Utilities Co. v. Burlington Northern R.R., 1 S.T.B. 638, 721-22 (1996) ("WTU") and Docket No. 42051, supra, the Board rejected the movement-specific adjustments to locomotive fuel costs proposed by carriers and complainants alike, and instead used system average costs for that cost element, because none of the parties had proven that the adjustments they proposed would produce more accurate costs. Here, as in those cases, CSXT has utterly failed to show that its proposed locomotive fuel cost adjustment would be more accurate than the system average costs relied upon by the Board, and accordingly the Board had no choice but to reject that adjustment. CSXT's request for reconsideration of that rejection must therefore be denied.⁸

CONCLUSION

In implementing the Guidelines, the Board must balance the interests of the carrier, the shipper, and the public. In sanctioning rates which are the highest in the history of

⁸ It should be noted that CSXT proposed its flawed fuel cost calculation as an adjustment to both variable costs and SARR operating costs. Insofar as variable costs were concerned, the adjustment suffered from two additional flaws: it was not submitted as part of CSXT's opening evidence, as required by the Board's rules governing cost presentations in stand-alone cases, and it did not include the locomotive types actually used by CSXT in handling the issue traffic. See Duke Reb. II-A-28 to 29 and 30 to 32.

trainload rate making, the Board ignored the interests of the electric consumers of the Carolinas.

Respectfully submitted,

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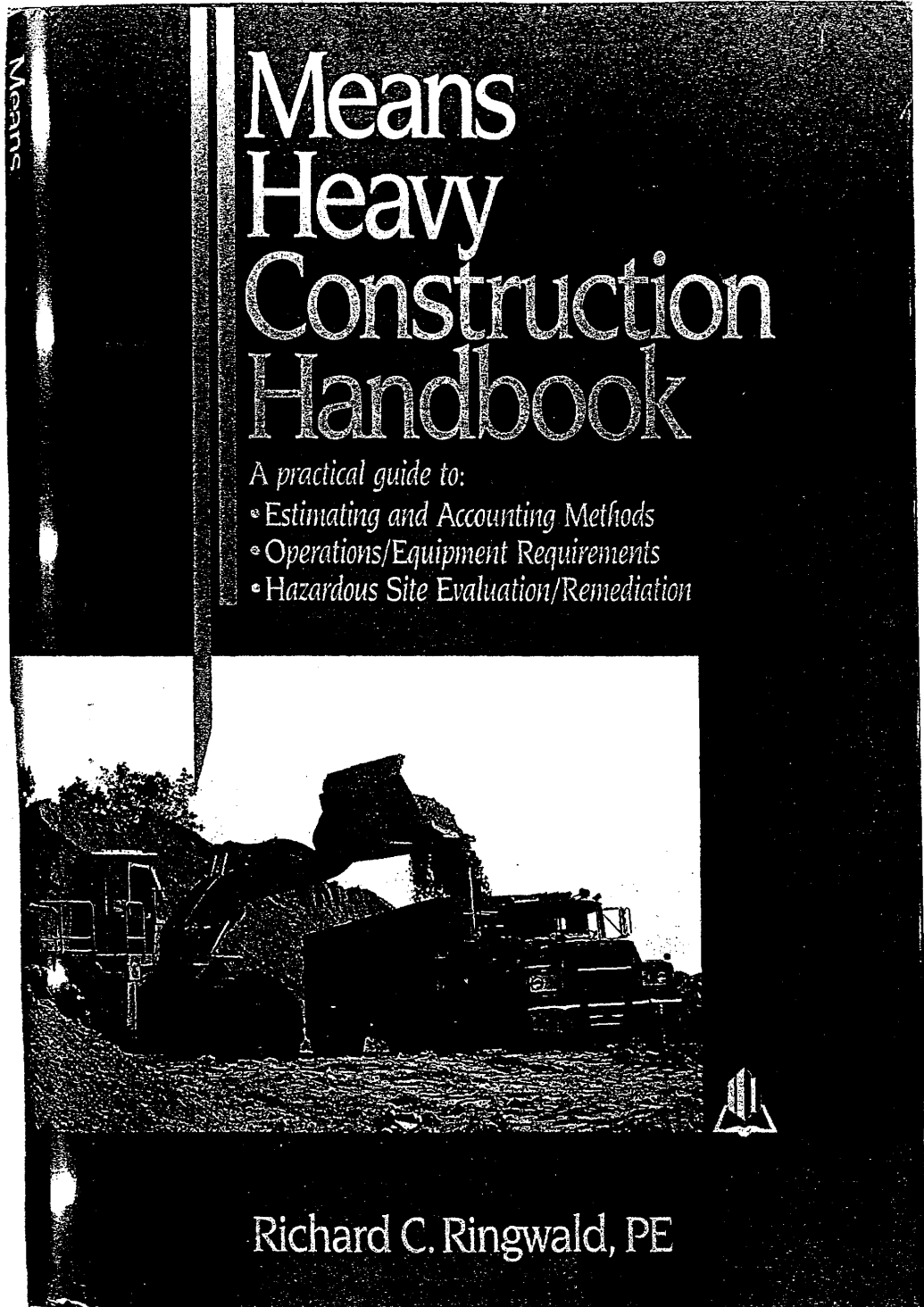
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CERTIFICATE OF SERVICE

I hereby certify that this 14th day of April, 2004, I have caused copies of the foregoing Reply to Petition for Reconsideration to be served by hand on counsel for defendant CSX Transportation, Inc. as follows:

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Andrew B. Kolesar III





Means Heavy Construction Handbook

A practical guide to:

- Estimating and Accounting Methods*
- Operations/Equipment Requirements*
- Hazardous Site Evaluation/Remediation*

Richard C. Ringwald, PE

Contributing Author: Francis J. Hopcroft, PE

Chapter 27

Power Shovels and Off-Road Haulers

Shovels Certainly scrapers are the dominant method of moving earth on larger jobs, but there are other special situation earthmovers with which the heavy construction manager must also be familiar. Among these, the power shovel is the most used.

Scrapers could be considered *surface* excavators since they fill their bowls from the surface of an earth mass. In Chapter 29, subsurface excavators, like the familiar backhoe, are discussed. That leaves *above surface* machines, like the shovel and endloader, that reach for a load above the surface they rest on.

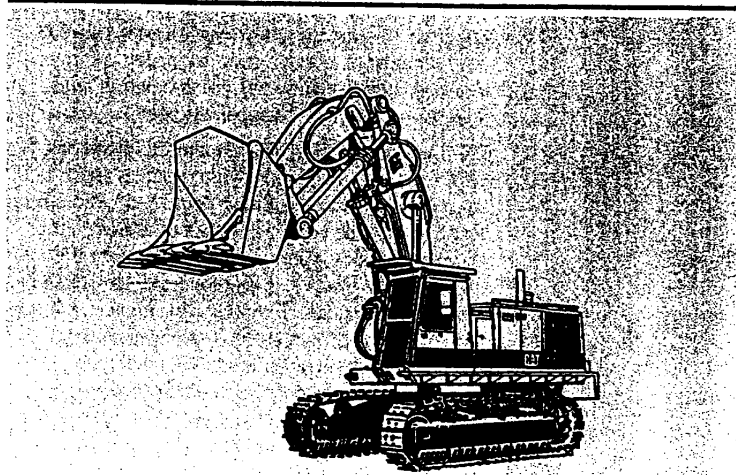
Power shovels are primarily used for earth, sidehill cuts; unrippable, blasted, solid rock cuts; and mixed rock/large boulder/earth cuts, none of which lend themselves to efficient scraper loading.

The power shovel (Figure 27.1) almost always has a crawler undercarriage plus two front arms and a digging bucket which is thrust ("crowded") into a near vertical face of soil or blasted rock pile. Ideally, the working face is of "optimum depth," whereby the bucket will be 100% filled by one complete, vertical pass through the face without undue crowding. If the face is higher than optimum, a shelf will develop above the machine reach which will eventually collapse onto the surface and retard, or even endanger, the operation. Similarly, if the cut is too shallow, the shovel will have to make more than one pass to get a bucketful. (Note: optimum depth does not apply to blasted rock.)

The shovel swings the bucket, and dumps it into the target hauler, usually an off-road hauler or – an ordinary dump truck. The greater the swing angle traversed by the bucket, the greater the swing time needed.

Shovel size ratings are based on the LCY (struck and heaped) capacity of the bucket that the machine can handle efficiently. As with many other types of heavy equipment, there is a transportability problem once a certain size is exceeded. Shovels over 3/4 to 1 LCY in size are too wide and/or too heavy to be hauled on trailers over public highways, and therefore, have to be partially dismantled first, then reassembled at the destination. This process is too costly for short duration projects.

Most shovels have the same engine, cab, and undercarriages as a similarly-rated crane or backhoe.



(Courtesy Caterpillar Corporation)

Power Shovel

Figure 27.1

Thus, the front arms and bucket can be removed, and a crane boom or backhoe front-mounted in its place.

Off-Road Haulers

Off-road haulers serve shovels, endloaders, or other loading machines when standard dump trucks are too small or too lightly built to do the job. Most large excavation projects require the use of rough, unpaved, job-site roads and loading of large rock, and thus are too much for ordinary dump trucks to handle. There are two types of off-road haulers. The rear-dump, (Figure 27.2) essentially a very heavy dump truck, is best-suited for rock and sticky soils. The bottom-dump (or "belly" dump) (Figure 27.3) discharges its load by opening under-mounted, longitudinal gates. It is best suited for dry, fast-moving materials. It leaves a longer, lower pile than a rear-dump.

Off-road haulers are rated by capacity in tons, LCY struck, and LCY heaped. The volumetric capacity can be increased by mounting side-boards, but this should not be done except to haul super-light materials such as coal. The excessive wear and tear costs, plus slower haul time engendered by exceeding the weight capacity, will not be compensated for by the extra load.

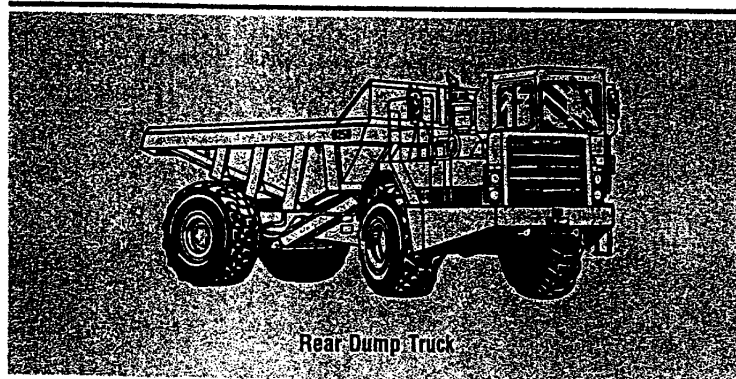
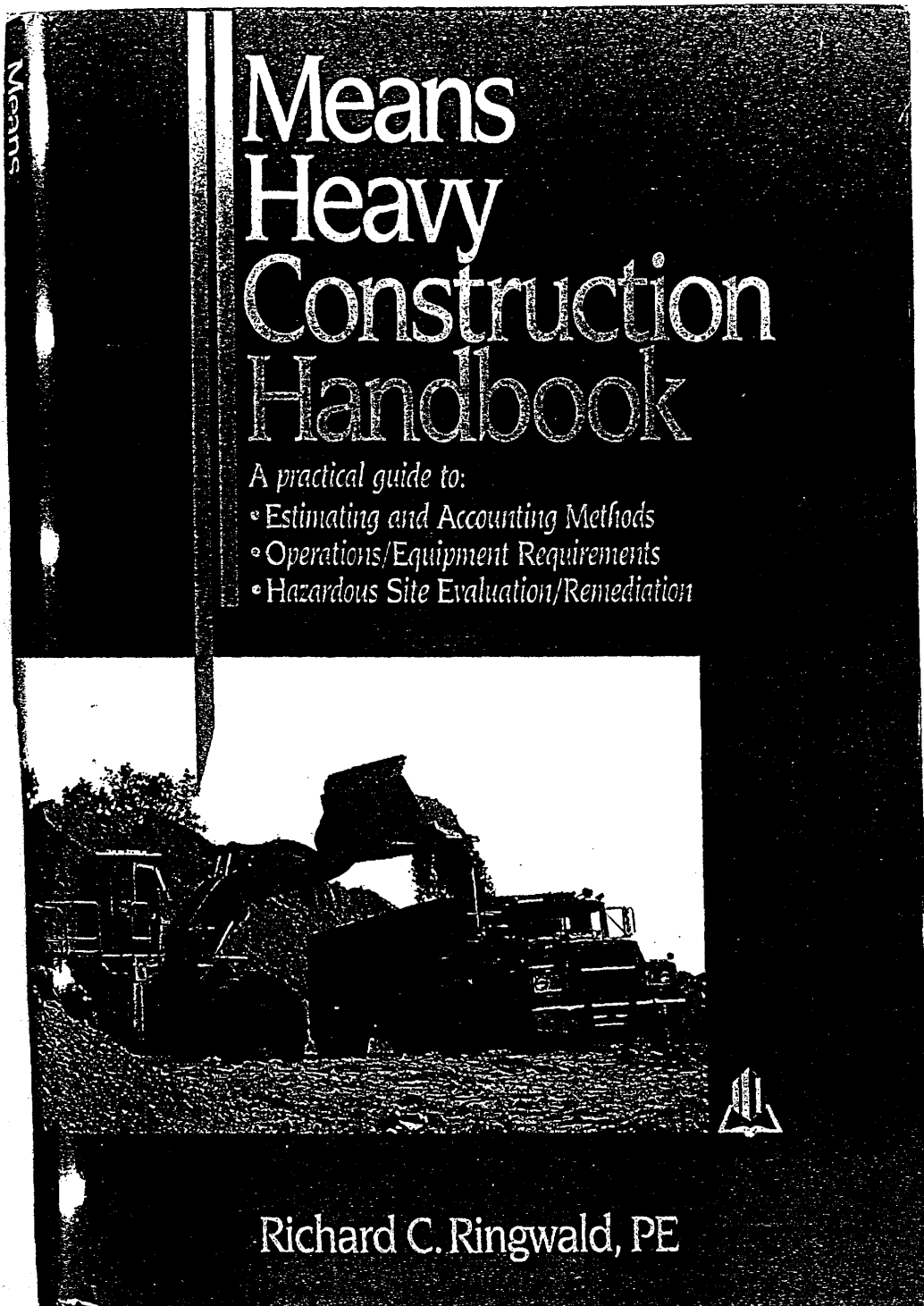


Figure 27.2





Means Heavy Construction Handbook

A practical guide to:

- *Estimating and Accounting Methods*
- *Operations/Equipment Requirements*
- *Hazardous Site Evaluation/Remediation*

Richard C. Ringwald, PE

Contributing Author: Francis J. Hopcroft, PE

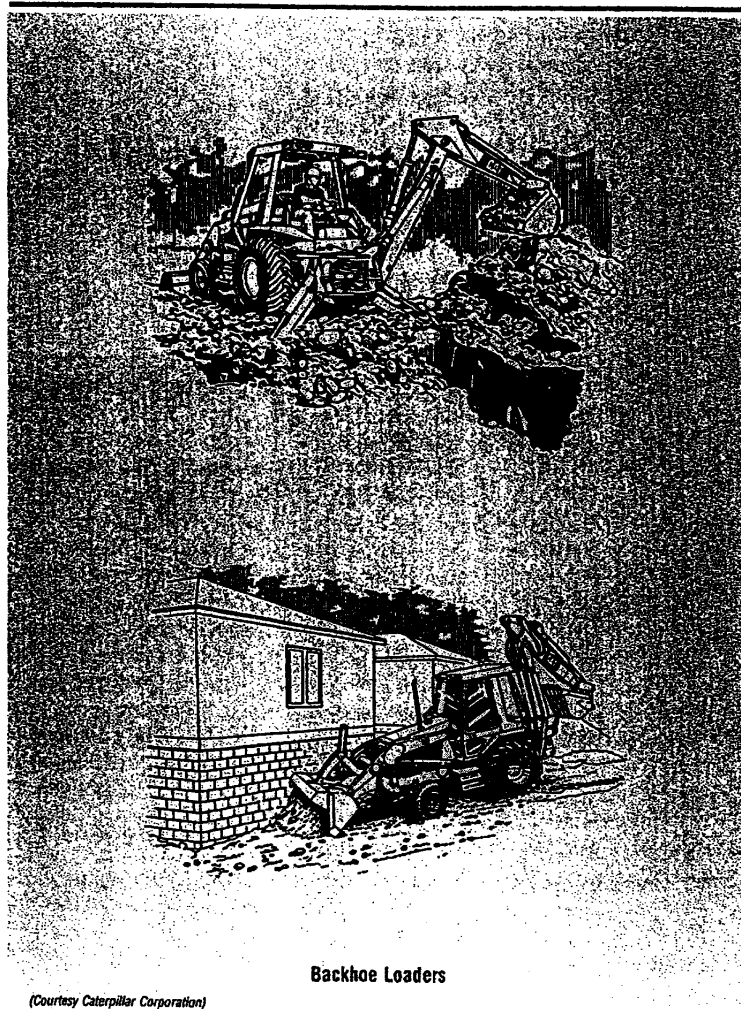
Chapter 29 Backhoes, Draglines, Gradalls, and Trenchers

These excavators usually dig below their sitting plane, although the backhoe and gradall do have a limited capability of reaching above that surface. All can be either wheel- or crawler-mounted. All operate by pulling their buckets toward themselves rather than pushing, as is done by shovels and loaders.

Backhoes The backhoe (Figure 29.1) is the most commonly used, and horsepower for horsepower, can move the most CY/HR. It is used to cut trenches for pipe or other longitudinal structures, to dig foundations, or to do other digging that permits pulling the bucket close to the chassis. It can reach high enough to dump the bucket into many types of hauling machines (though not as efficiently as shovels/loaders). Narrow compacting devices (vibratory and impact) can be mounted in lieu of a bucket for consolidation of trench backfill or similar small area jobs. Some small endloaders can be equipped with a rear backhoe to become a versatile, small odd-job machine. A backhoe is generally rated by bucket LCY size, usually the same size as the shovel to which it can be converted. (See Chapter 16, "Trenching and Pipes," for further information on the backhoe's role in pipe work.)

Draglines The dragline is essentially a crane with cables contrived such that a dragline bucket can be used. The long reach, plus the rotation on the undercarriage, means that a large area can be excavated from one position. This feature is an

advantage in excavating swampy areas or lake/stream bottoms because the dragline can rest in a stable area and reach out to excavate around itself. Scrapers



Backhoe Loaders

(Courtesy Caterpillar Corporation)

Figure 29.1

— with the sometimes exception of crawler-pulled — would bog down in such conditions, and backhoes or gradalls lack the needed reach. The dragline can either load haul units with excavated material, or pile it up for future removal. Like the shovel, the dragline has an optimum face area in which it works best, as shown in the illustration. The operator can throw ("cast") the bucket beyond the point beneath the boom tip, but this practice is hard on the bucket, and reduces the CY/HR of production. (See Figure 29.2.)

Gradalls The "gradall" (Figure 29.3) is a very versatile machine combining features of the backhoe, dragline, and motor grader. Like all versatile machines, however, its

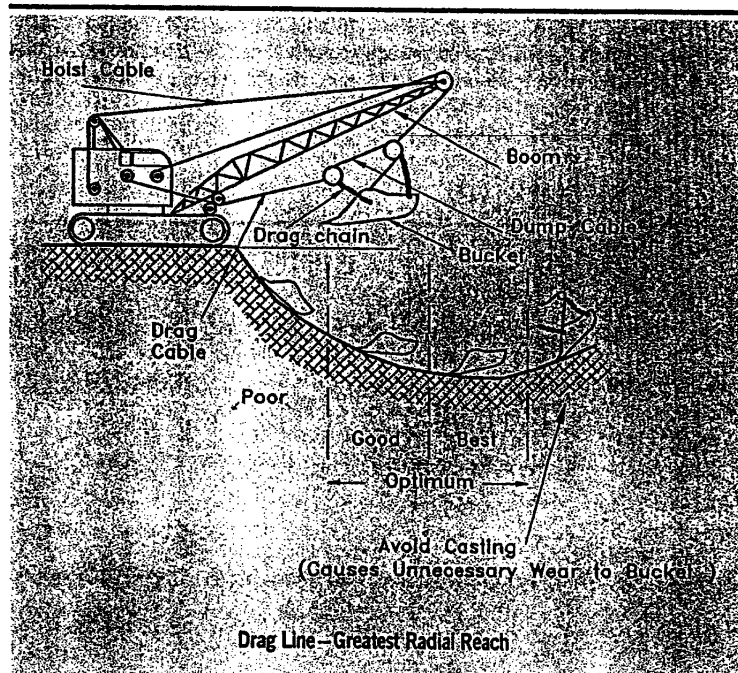


Figure 29.2