No. 41191

# WEST TEXAS UTILITIES COMPANY
v.
# BURLINGTON NORTHERN RAILROAD COMPANY

*Decided April 25, 1996*

The Board finds that the defendant railroad has market dominance over the traffic at issue and that the rate charged by the defendant on that traffic is unreasonable. A maximum reasonable rate limit is set and reparations are ordered.

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## LIST OF ABBREVIATIONS USED

| | |
|---|---|
| AAR | Association of American Railroads |
| AREA | American Railway Engineering Association |
| ATF | Across-the-fence |
| ATSF | Atchison, Topeka and Santa Fe Railway Company |
| BN | Burlington Northern Railroad Company |
| CMP | Constrained Market Pricing |
| CODOT | Colorado Department of Transportation |
| CPL | Central Power & Light Company |
| CNW | Chicago and North Western Railway Company |
| CSW | Central and South West Corporation |
| DCF | Discounted cash flow |
| DRGW | Denver & Rio Grand Western Railroad |
| EOTD | End-of-train device |
| ERCOT | Electric Reliability Council of Texas |
| Exh. | Exhibit |
| G&A | General and administrative |
| GTM | Gross ton-mile |
| ICC | Interstate Commerce Commission |
| ICCTA | ICC Termination Act of 1995 |
| L&D | Loss and damage |
| LUM | Locomotive unit-mile |
| MACRS | Modified Accelerated Cost Recovery System |
| MOW | Maintenance-of-way |
| MW | Megawatts |
| NCRPIP | Northeast Corridor Rail Passenger Improvement Project |
| NPPD | Nebraska Public Power District |
| PRB | Powder River Basin |
| PSI | Pounds per square inch |
| PSO | Public Service Company of Oklahoma |
| R-1 | Railroad annual report form R-1 |
| RCAF-U | Rail cost adjustment factor (unadjusted for productivity) |
| ROI | Return on investment |
| ROW | Right-of-way |
| R/VC | Revenue-to-variable cost |
| SAC | Stand-alone cost |
| SARR | Stand-alone railroad |

| | |
|---|---|
| SFGT | Speed factored gross ton |
| SP | Southern Pacific Transportation Company |
| SPP | Southwest Power Pool |
| SWEPCO | Southwestern Electric Power Company |
| TPM | Train performance model |
| UPRR | Union Pacific Railroad Company |
| URCS | Uniform Railroad Costing System |
| USOA | Uniform System of Accounts |
| V.S. | Verified statement |
| WTRR | West Texas Railroad |
| WTU | West Texas Utilities Company |

BY THE BOARD:

West Texas Utilities Company (WTU) challenges the reasonableness of the rate and service terms established by the Burlington Northern Railroad Company (BN) for transporting coal in unit-train movements from the Rawhide mine, near Gillette, WY, to WTU's Oklaunion generating station, in Vernon, TX.[1]

## I. PROCEDURAL HISTORY

WTU's original complaint was filed January 12, 1994, in anticipation of the impending expiration of a rail transportation contract that it had with BN for this traffic. WTU explained that it would continue to rely on BN to transport this coal after the rail transportation contract expired, because BN is the only rail carrier serving either the Oklaunion generating station or the Rawhide mine (from which it purchases coal for the Oklaunion station under a long-term coal supply contract). WTU complained that the fallback tariff rate that would apply to this traffic once the contract expired -- a single-car class rate of $100.00 per ton -- would be unreasonably high and clearly inappropriate for high-volume coal traffic. WTU asked the ICC to set a maximum reasonable rate.

In a decision served August 24, 1994, the ICC directed BN to file a tariff containing suitable rates, classifications, rules, and practices for the disputed movements.[2] Accordingly, BN filed Freight Tariff ICC BN-4232 (Tariff 4232) on October 21, 1994, establishing a rate of $19.36 per ton applicable for trainload (60-car minimum) coal movements in carrier-owned cars from the Rawhide mine to Oklaunion.

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[1] This complaint was pending with the Interstate Commerce Commission (ICC) on Jan. 1, 1996, the effective date of the ICC Termination Act of 1995, Pub. L. No. 104-88, 109 Stat. 803 (1995) (ICCTA). The ICCTA abolished the ICC and transferred certain of its functions and proceedings to the Surface Transportation Board (the Board). WTU's complaint involves functions that were retained and placed under the Board's jurisdiction pursuant to new 49 U.S.C. 10701(d), 10702, 10704, and 10707. Section 204(b)(1) of the ICCTA provides generally that proceedings pending before the ICC on the effective date of that legislation shall be decided under the law in effect prior to January 1, 1996, insofar as they involve functions that are retained. Accordingly, this decision applies the law in effect prior to the ICCTA, and citations are to the former sections of the statute (former 49 U.S.C. 10701a, 10701, 10704, and 10709, respectively) unless otherwise indicated.

[2] That decision to require a tariff in advance of the expiration of the contract was reversed in *Burlington N.R.R. v. Surface Transp. Bd.*, 75 F.3d 685 (D.C. Cir. 1996). The court's ruling does not prevent us from going forward in this proceeding and exercising jurisdiction over the reasonableness of a rate that is now in effect and being used.

By pleading filed November 4, 1994, WTU complained that the rate contained in Tariff 4232 is unreasonably high and that the service terms of the tariff are unsuitable for its traffic.[3] In a decision served December 30, 1994, the ICC treated WTU's objections to the tariff as an amended complaint, and set a procedural schedule for developing the evidentiary record.

On January 19, 1995, BN submitted its answer to the amended complaint and a motion to make the complaint more definite. Acting on BN's motion to make the complaint more definite, the ICC, in a decision served February 14, 1995, directed WTU to identify all origins from which it seeks a rate prescription. In response, in a February 17, 1995 letter, WTU identified 10 additional origins in the Powder River Basin (PRB) of Wyoming.[4]

WTU filed opening evidence and argument on the issues of intermodal and intramodal competition and rate reasonableness on February 28, 1995 (WTU Opening). BN filed its opening submission on the issues of product and geographic competition and jurisdictional threshold, as well as its reply to WTU's opening statement, on May 29, 1995 (BN Reply). WTU submitted its reply to BN's submission on product and geographic competition and jurisdictional threshold, and its rebuttal on intermodal and intramodal competition and rate reasonableness, on July 21, 1995 (WTU Reply). BN then filed its rebuttal on product and geographic competition and jurisdictional threshold, together with a request for briefing, on August 10, 1995 (BN Rebuttal). The ICC then scheduled briefing, and the parties filed simultaneous briefs on September 29, 1995 (WTU Brief/BN Brief).

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[3] WTU objects to the following terms:
--The "trainload" service terms, including 60-car trains (Item 130), prepayment of charges (Item 138), and an absence of annual volume standards, all of which WTU contends are insufficient for and/or inappropriate to unit-train service.
--The inclusion of only one of the several coal origins that WTU uses, and the absence of an intermediate application rule.
--The tariff's applicability only to shipments in BN railcars, despite repeated statements by WTU that rates for shipments in WTU-supplied equipment also would be required.

[4] Caballo Jct., Belle Ayr, Eagle Jct., Rojo Jct., Cordero, Coal Creek Jct., Reno Jct., Jacobs Jct., Rochelle, and Nacco Jct.

## II. SCOPE OF THIS DECISION

At the time the complaint was filed, the relief sought was prospective because the contract was still in effect and movements under the challenged tariff had not yet begun. The contract has since expired, and movements under Tariff 4232 began on or about October 17, 1995. Accordingly, we construe the complaint to seek reparations from that date forward.

We limit our analysis and relief in this decision to the reasonableness of the rate from the Rawhide origin. The original complaint referred only to Rawhide, as does Tariff 4232. Rawhide is the main focus of the complaint because, as discussed more fully below, it supplies WTU's base-load coal tonnage requirements. Moreover, only the Rawhide origin is consistently identified throughout the evidence.[5]

WTU may request BN to establish appropriate rates from any or all of the other mines. We can address any rate reasonableness concerns as to those other mine origins in a subsequent decision, if necessary, after obtaining appropriate supplemental evidence tailored to those sites.

## III. MARKET DOMINANCE

### A. THE STATUTORY REQUIREMENT

We can consider the reasonableness of a challenged rate only if the carrier has market dominance over the traffic involved. 49 U.S.C. 10701a(b)(1), 10709. Market dominance is "an absence of effective competition from other carriers or modes of transportation for the transportation to which a rate applies." 49 U.S.C. 10709(a).

The statute precludes a finding of market dominance where the carrier shows that the revenue produced by the movement is less than 180% of the

[5] WTU presented evidence, albeit inconsistently, with regard to movements from some (but not all) of the origin mines it had identified, as well as from other mines not identified in its February 1995 letter.

variable cost to the carrier of providing the service.[6] 49 U.S.C. 10709(d)(2).[7] In this case, however, BN does not dispute that the "quantitative" threshold is exceeded.

We therefore examine the circumstances surrounding the transportation to "qualitatively" assess whether "there are any alternatives sufficiently competitive (alone or in combination) to bring market discipline to [the railroad's] pricing." *Metropolitan Edison Co. v. Conrail, et al.*, 5 I.C.C.2d 385, 410 (1989) (*Met-Ed*). We apply the evidentiary guidelines set forth in *Market Dominance Determinations,* 365 I.C.C. 118 (1981) (*MD Guidelines I*), *aff'd sub nom. Western Coal Traffic League v. United States,* 719 F.2d 772 (5th Cir. 1983) (*en banc*), *cert. denied*, 466 U.S. 953 (1984), *modified in Product and Geographic Competition*, 2 I.C.C.2d 1 (1985). We consider the competitive alternatives available to a shipper and the feasibility of using each alternative, focusing primarily on four interrelated categories of competition: intramodal, intermodal, geographic, and product competition. *MD Guidelines II,* 2 I.C.C.2d at 4.[8]

Intramodal competition refers to competition between two or more railroads transporting the same commodity between the same origin and destination. *MD Guidelines I,* 365 I.C.C. at 132. Intermodal competition refers to competition between rail carriers and other modes for the transportation of a particular product between the same origin and destination. *Id.* at 133. Whereas intramodal and intermodal competition constitute direct, point-to-point competition, geographic and product competition are indirect. Geographic competition is the availability of the same product from alternative sources or the ability to ship the product to alternative destinations. *MD Guidelines II,* 2 I.C.C.2d at 3, 22. Product competition exists when a receiver or originator can substitute other products moving over different lines for the product covered by the rail rate at issue. *Id.* at 9, 22.

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[6] Variable costs are those expenses associated with providing a particular rail transportation service that a carrier would not incur if it did not provide the particular service.

[7] Under 49 U.S.C. 10709(d)(2), the "threshold percentage" was computed annually, but was not to exceed 180 (or fall below 170). In practice, the 180% cap has consistently applied. For future complaints, the ICCTA fixes the percentage at 180, thus eliminating the annual calculation. *See,* new 49 U.S.C. 10707(d)(1)(A).

[8] The guidelines are not exhaustive, and parties are not limited to the factors mentioned. Other forms of competition may also be significant, depending on individual circumstances. *MD Guidelines I,* 365 I.C.C. at 131.

The complaining shipper makes an initial showing of market dominance by establishing that there are no direct transportation alternatives for the movements at issue (intramodal or intermodal competition) that effectively constrain the railroad's pricing. *MD Guidelines* II, 2 I.C.C.2d at 14-15. At that point, the evidentiary burden shifts to the defendant railroad to respond in rebuttal with a showing of indirect competitive alternatives (geographic and/or product competition) that serve as effective pricing constraints. *Id. See, Met-Ed,* 5 I.C.C.2d at 412 n.34.

We base our analysis on the specific market(s) involved, and not broad-brush generalities about competitive conditions in unspecified markets. *Arizona Public Service Co. v. United States,* 742 F.2d 644, 654-55 (D.C. Cir. 1984). Moreover, we look not just at whether there is an alternative, but at whether it constitutes an effective competitive constraint so as to prevent an exercise of undue market power. *Id.* at 651.

B. BACKGROUND

WTU has a 54.69% ownership interest in the Oklaunion station, entitling it to 370 megawatts (MW) of the plant's total generating capacity (approximately 676 MW).[9] Oklaunion is WTU's only coal-fired power source. WTU also owns and operates 23 small gas-fired units located at various points in Texas. Those gas-fired facilities collectively supply 1,031 MW of WTU's total generating capacity of 1,400 MW. Thus, WTU's share of Oklaunion constitutes about 26% of WTU's total generating capacity. However, it is responsible for close to 40% of WTU's generated power. That is because Oklaunion is a "base-load" power plant -- it can produce power at a lower incremental cost than any other locally available source. As such, its power production will not ordinarily drop below a certain minimum output necessary to serve its "native load."

[9] The 306 MW of Oklaunion's capacity not subscribed by WTU are shared in various percentages by the plant's co-owners: the Oklahoma Municipal Power Authority; the Public Utilities Board of the City of Brownsville, TX; and two WTU-affiliated companies -- Central Power & Light Company (CPL) and Public Service Company of Oklahoma (PSO). These other owners have not participated in this proceeding.

WTU is one of four electric utility operating subsidiaries of Central and South West Corporation (CSW).[10] WTU "engages in economy interchanges" with the other CSW subsidiaries.[11] WTU is also a member of the Electric Reliability Council of Texas (ERCOT) power pool, whose "members interchange power and energy on firm, economy, and emergency bases."[12] In addition, WTU has access to the Southwest Power Pool (SPP) through a high voltage direct current tie across the Red River that connects WTU with its sister company, PSO, which is a member of SPP. A second such tie is expected to become operational soon and to further connect the CSW system and the two pools.

Planning for the Oklaunion facility began in the mid-1970s. In 1975-76, WTU conducted an extensive siting study. Of all potential sources surveyed, it was determined that only the Lake Kemp/Lake Diversion system in the Vernon area had sufficient water capacity available to support the intended capacity of the new station.[13] The site selection was driven largely by considerations of water availability, because coal-fired power plants require a substantial nearby water source for steam production and cooling.

The Oklaunion plant was designed for the specific qualities of coal from the PRB. Prior to beginning construction, in May 1981, WTU entered into a coal supply contract with the owner of the Rawhide mine.[14] Under that contract, as subsequently amended, WTU is obligated to buy a minimum, base volume of 2.05 million tons of coal per year, through the year 2006, from the Rawhide mine. The remaining coal consumed at Oklaunion (up to 1 million tons annually) is purchased on the spot market from various mines in the PRB.

Construction of Oklaunion began in 1982 and was completed in 1986. WTU did not enter into a long-term transportation contract before committing to the Oklaunion site. Instead, from 1986 to October 1995, its coal moved to Oklaunion under a series of short-term contract arrangements with BN.

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[10] CSW also owns CPL, PSO, and Southwestern Electric Power Company (SWEPCO).

[11] WTU Opening, Files Verified Statement (V.S.), Exhibit (Exh.) GF-1 at 7.

[12] *Id.*

[13] The study surveyed all potential water sources throughout the WTU service territory and considered a number of other factors, including transportation facilities.

[14] Exxon Coal USA, Inc. owned the mine at that time. Peabody Coal Company has since acquired the mine and the rights under that contract.

## C. ANALYSIS

### 1. *General.*

The core of WTU's market dominance claim is that it has no alternative for the traffic at issue here because BN is the only carrier with a rail line at either the origin (the Rawhide mine) or the destination (the Oklaunion facility). BN argues generally that, to the extent WTU is thus captive to BN's services, WTU is not entitled to regulatory relief because its captivity results from its own business choices. BN would attach significance to the fact that WTU's final commitments to build at Oklaunion and to enter a long-term supply contract for coal from Rawhide were made after passage of the Staggers Rail Act of 1980, Pub. L. 96-448, 94 Stat. 1895 (Staggers Act).

The distinction between "ex ante" competition for transportation of coal to utility power plants (competition present before a plant has been sited, designed, and constructed) and "ex post" competition (competition after construction) was explained in *Union Pacific--Control--Missouri Pacific; Western Pacific*, 366 I.C.C. 462, 535-37 (1982):

> With respect to ex post competition, relatively narrow transportation markets are involved * * *. Ex ante competition, on the other hand, involves far broader markets for coal transportation. In selecting a fuel source for a new plant, a utility can choose among various coal-producing regions. Because boiler design is not fixed until after a fuel source has been selected, a utility is not tied to the coal of a particular region at the ex ante stage. Further, before a site for a new plant has been selected, a utility cannot be captive to a single delivering railroad so long as it has siting options available on the lines of more than one railroad (or it has access to water transportation). * * *
>
> Because of source competition and the availability of different potential plant sites, the utility most likely will not be captive to a single rail carrier at origin or destination. Therefore, a railroad must offer competitive rates at the ex ante stage in order to induce the utility to locate on its lines or to buy coal from fields it serves.

The market dominance guidelines recognize that in the post-Staggers Act environment, utilities are better able to leverage the benefits of ex ante competition and carry those benefits into the ex post period, primarily because of the ability to sign long-term contracts for rail service before siting and design commitments are made. Thus, basic facts that would otherwise indicate that a utility is subject to market dominance--such as that it can be served at destination by only one rail carrier or that is obligated to take coal from a mine that can be served by only one rail carrier--are given less weight under the evidentiary guidelines if they arise from decisions made in the post-Staggers Act era.

In *MD Guidelines II,* 2 I.C.C.2d at 11 (footnote omitted), the post-Staggers Act relationship between shippers and the railroads was explained:

> * * * The Staggers Act gave shippers the ability to contract with carriers. Therefore, the shipper could protect itself by negotiating with various carriers before making substantial investments that would tie it to a particular carrier. 365 I.C.C. at 125.
>
> * * * Therefore, the Commission announced that it would not allow shippers to create market dominance by tying themselves to a single carrier through substantial rail-related investments or long-term supply contracts after October 1980. That is, shippers would not be permitted to ensure the Commission's continuing jurisdiction over their rail transportation on the basis of that consideration alone.
>
> The Commission recognized that the submission of evidence concerning such investments or contracts made after October 1, 1980, should be permitted. However, * * * evidence of substantial investments or long-term supply contracts entered into subsequently should be given less weight than those entered into when shippers and railroads faced greater contracting restrictions.

Thus, the post-Staggers Act environment is indeed different from the earlier regulatory regime. Shippers make investment decisions and other similar commitments knowing that they must protect themselves, using the leverage of the marketplace, whenever possible, to negotiate in advance for reasonable rates that are locked in by long-term contracts.

In this case, BN points out, the final decisions tying WTU to the Oklaunion site were made after passage of the Staggers Act (in late 1980). The coal supply contract was signed in 1981, and construction of the plant began in 1982. However, the record shows that significant resources were committed to planning and siting the plant prior to the Staggers Act.

On this record, we cannot find that WTU in fact had ex ante options at destination that could have been preserved with a long-term rail transportation contract. BN has not disputed WTU's claim that the plant had to be constructed in WTU's own service territory. Although BN asserts that some of the widely separated sites examined in detail in the site selection study are closer to other carriers, the study supports WTU's claim that only the Lake Kemp/Lake Diversion area provided sufficient water to meet the plant's requirements. The record shows that there were no other available destination carriers in the Lake

Kemp/Lake Diversion area.[15] Thus, WTU was limited to BN's service at the destination. Locating the plant at Oklaunion gave BN the market power of a "bottleneck carrier"[16] regardless of where the coal originated. Therefore, WTU cannot be faulted for having committed to a coal supply that also originated on BN; seeking out a different source of coal would not have significantly improved its bargaining posture with BN. Furthermore, while construction of the power plant did not begin until 1982, WTU's post-Staggers options were constrained by pre-Staggers planning and expenditures.

2. *Intramodal Competition.*

BN argues that the potential for rail competition from its principal western coal transportation rivals -- the Union Pacific Railroad Company (UPRR) and the Chicago and North Western Railway Company (CNW) (collectively, UP/CNW)[17] -- places competitive pressure on BN's rates for this traffic. BN points to a past threat by WTU to build-out to a UPRR line[18] at either Wichita Falls, TX (approximately 35 miles east of Oklaunion) or Frederick, OK (approximately 27 miles north of Oklaunion).[19] BN also refers to an attempt by WTU to enter into a contract with UP/CNW for the transportation of a minimum of 200,000 tons of coal per year in a joint-line movement to Oklaunion. BN asserts that these competitive threats led it to give WTU substantial rate reductions in past contract negotiations.

Price reductions given to utilities by bottleneck destination carriers generally are not considered evidence of effective competition for base-load coal

[15] Indeed, the map of the Lake Kemp/Lake Diversion area shows only BN lines. BN Reply, Exh. C-7, Figure (Fig.) 3.

[16] A single carrier is a bottleneck carrier when it is a necessary participant in all available routes. *See, Consolidated Papers, Inc. v. CNW Transp. Co.*, 7 I.C.C.2d 330, 339 (1991) (*Consolidated Papers*).

[17] CNW was merged into UPRR on October 1, 1995.

[18] An option to build out to the Atchison, Topeka and Santa Fe Railway Company (Santa Fe or ATSF) was rendered moot when the BN merged with the Santa Fe.

[19] A build-out from Oklaunion to Wichita Falls would involve all new construction. A build-out from Oklaunion to Frederick would entail upgrading existing UPRR track, using an 11-mile segment of the Grainbelt Railroad between Frederick and Davidson, OK, and constructing a new 15-mile spur from Davidson to Oklaunion that would include a bridge over the Red River and a highway overpass.

movements, absent a realistic build-out threat.[20] In this case, we do not view the build-out threat to be realistic because of its high cost and limited benefit. A 1990 WTU study estimated the cost to construct a connecting line to Wichita at $62 million, and to Frederick at $79 million.[21] Such an investment would not be cost effective, given that it would not avoid WTU's reliance on BN at the Rawhide origin through the year 2006. Thus, in the near term, this competitive alternative would only be effective for the incremental coal traffic that is above the base load supplied by Rawhide.[22]

WTU's efforts to arrange a joint-line movement were also inherently ineffective,[23] given BN's position as a bottleneck carrier. BN would have had to have provided the transportation over the final 41 miles of a UP/CNW/BN joint haul and, absent regulatory constraints, could have priced its portion of the move at an unreasonably high level.[24] Moreover, that arrangement would not have addressed the movements of the base-load coal supply from Rawhide.

BN argues that, through CSW, WTU can obtain the benefits of effective intramodal competition from the coordinated efforts of CSW operating companies to negotiate joint or "umbrella" agreements with fuel supply and fuel transportation providers. This coordination among the CSW companies, according to BN, gives CSW considerable bargaining leverage in negotiating with rail carriers.

While CSW did engage in such coordinated negotiations (which were ultimately fruitless), those negotiations focused on the four coal plants operated by CSW subsidiaries that have more than one rail option. By contrast, the Oklaunion movements are captive to the BN not only at the destination, but also at the origin under WTU's long-term coal supply contract. The base-load coal supply to which WTU is contractually obligated must originate at the Rawhide

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[20] *See, Burlington Northern et al.-- Merger -- Santa Fe Pacific et al.* (*BN/Santa Fe*) 10 I.C.C.2d 66, 754 (1995).

[21] BN Reply, Volume I, Exhibit C-23.

[22] As noted, the incremental coal consumed at Oklaunion is purchased on the spot market from various mines in the PRB.

[23] BN in fact declined to set a rate for the movement between Wichita Falls and Oklaunion. As BN's representative explained to WTU, "[t]here is no valid commercial reason for BN voluntarily to forego its long haul from [PRB] origins to Oklaunion" and the full revenues associated with that traffic. WTU Rebuttal, Moran V.S., Exh. MTM-10 at 1-2.

[24] A bottleneck carrier can usually control the overall rate sufficiently to preclude effective competition. *See, Consolidated Papers*, 7 I.C.C.2d at 339; *BN/Santa Fe*, 10 I.C.C.2d at 751.

mine (which is served exclusively by BN), regardless of where it is delivered. Thus, there would have been no benefit to WTU's sister utilities from including this traffic in the negotiations; it would not have strengthened, and could well have weakened, their bargaining position. As discussed below, WTU's sister utilities could not be expected to subjugate their own interests to those of WTU. Accordingly, the WTU traffic was not at risk for the BN in those discussions.

3. *Intermodal Competition.*

BN argues that trucking can provide an alternative to a rail build-out to Wichita Falls. We do not consider trucking to be a feasible option. As WTU has explained, transporting all of its coal from Wichita Falls to Oklaunion in 35-ton trucks would require just under 200 truck shipments each day of the year. Moreover, environmental concerns, noise, community opposition, increased inefficiencies associated with loading and unloading, etc., make this option infeasible for any of its coal movements.[25]

4. *Geographic and Product Competition.*

BN asserts that it faces a hybrid form of geographic/product competition that arises from the integration of the four CSW operating companies and the interconnection and economic dispatch practiced by them.[26] Specifically, BN submits that, because "CSW/WTU" can generate power elsewhere on its system or purchase power from outside the system, it could choose to back-down (produce less power at) Oklaunion so as to avoid BN's service.[27] According to BN, this threat of substantially reduced Oklaunion production effectively disciplines BN's rates.

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[25] WTU Rebuttal, Moran V.S. at 10-11.

[26] BN argues that the combination of electric generating facilities through interconnection of this kind creates several forms of effective competition for a rail carrier supplying fuel to individual plants: geographic competition among origins supplying the fuels used at the different plants; product competition between fuels themselves; and intramodal and intermodal competition among transportation providers for those fuels.

[27] With Oklaunion representing less than 4% of the total CSW generating capacity (of 14,200 MW), and with ample excess capacity elsewhere in the CSW system, BN submits that production at Oklaunion could be readily reduced.

WTU responds that its interconnection with other CSW companies is no different in nature than the general interconnectedness of all electric utilities through the power grid. Each CSW subsidiary operating company must answer to its own ratepayers and regulatory overseers. Thus, CSW could not apply any coordinated efforts that would work to the economic disadvantage of any of its operating companies. In other words, CSW could not engage in tactics that would play one set of ratepayers' interests against another's. The issue, then, is whether WTU could obtain alternative energy at prices sufficiently low to pose a meaningful threat to BN.

WTU has shown that idling Oklaunion would be neither feasible nor effective. Oklaunion is the lowest-cost unit in the WTU system. As such, it operates as a "base-load, must-run" plant.[28] In an economic dispatch system, a utility dispatches its lowest-cost generation first to serve its "native load." Because other utilities tend to use their least expensive incremental generation for their own territorial customers, the power that would be available for regular transfer between utilities is typically the highest-cost power, not the lowest.[29] Therefore, obtaining power from other sources -- whether from other CSW utilities or from elsewhere on the power grid -- would not be an economical alternative to Oklaunion's output.

In addition to the increased cost of power, WTU would incur substantial penalties under its coal supply contract--roughly $7.30 per ton--if the minimum coal tonnages were not taken.[30] Moreover, WTU would have to answer to the other owners of Oklaunion, as well as local electric utility regulators, for such a high-cost maneuver. For all of these reasons, we do not view the threat of significantly backing down Oklaunion as an effective one.

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[28] As noted, while Oklaunion represents only 26% of WTU's generating capacity, it supplies 40% of its generated power.

[29] WTU Rebuttal, Sansom V.S. at 11-15. TU could not rely on spot market pricing of power, which can be influenced more by supply and demand than by cost considerations. Because spot purchases might not be available at peak demand periods, an effective replacement power program would require "firm" commitments of power.

[30] WTU Rebuttal, Akins V.S. at 7. WTU could not readily shift the required tonnage to some other plant(s), since the prices under its existing coal supply agreement are well above market prices for spot tonnage. *Id.* Moreover, shifting the Rawhide movements would not serve to apply the intended pressure on BN, which would be a necessary participant in any movements of coal from Rawhide.

Finally, BN suggests that "CSW/WTU" has the flexibility to back down the plant by a minimum of one-third without disrupting its long-term coal supply arrangement.[31] BN portrays the possible loss of this incremental coal traffic--$13 million per year--as a source of substantial pressure to reduce its rates. However, the fact that BN can differentially price base-load and incremental traffic to Oklaunion, and has done so in the past, severely limits WTU's ability to use any leverage over the pricing of incremental traffic to affect the price of base-load movements.[32] In other words, absent regulation, BN could maximize its profits on WTU's traffic simply by charging very high rates on the "base" volumes that are relatively price insensitive, while offering lower rates only on such incremental volumes as might otherwise be displaced.

In sum, we find that BN has market dominance with respect to the coal shipments at issue in this case.

## IV. RATE REASONABLENESS

### A. SAC GENERALLY

The standards for judging the reasonableness of rail freight rates charged for high-volume, regularly-recurring movements of this sort are set forth in *Coal Rate Guidelines, Nationwide,* 1 I.C.C.2d 520 (1985) (*Rate Guidelines), aff'd sub nom., Consolidated Rail Corp. v. U.S.*, 812 F.2d 1444 (3d Cir. 1987). Those guidelines impose certain constraints on the extent to which a railroad may charge differentially higher rates on captive traffic. The three main constraints[33]

[31] The minimum purchase requirements under WTU's long-term coal supply contract is one million tons less than the 3.1 million tons of coal that WTU shipped to Oklaunion in 1994.

[32] WTU Rebuttal, Sansom V.S. at 3.

[33] A fourth constraint--phasing--can be used to limit the introduction of otherwise permissible rate increases if they would lead to undue inflation and dislocation of important economic resources. *Rate Guidelines*, 1 I.C.C.2d at 546-47.

are revenue adequacy,[34] management efficiency,[35] and stand-alone cost (SAC).[36] Collectively this set of constraints is referred to as "constrained market pricing" (CMP).

The revenue adequacy and management efficiency constraints employ a "top-down" approach, examining the incumbent carrier's existing operations. If the carrier is revenue adequate (earning sufficient funds to cover its costs and provide a fair return on its investment), or would be revenue adequate after eliminating unnecessary costs from specifically identified inefficiencies in its operations, a complaining shipper may be entitled to rate relief. More commonly, however, the parties (as here) use the "bottom-up," or engineering, approach of SAC to calculate the revenue requirements for providing the rail service needed by the complaining shipper, free from costs associated with inefficiencies and free from cross-subsidies of other traffic.

The SAC analysis seeks to determine the lowest cost at which a hypothetical, efficient carrier could serve the traffic at issue, together with other traffic selected to share the burden of that carrier's joint and common costs. (To avoid any elements of monopoly pricing, a SAC analysis hypothesizes that this alternative service could be introduced without incurring any "barrier to entry" costs.) Under the SAC constraint, the rate at issue could be no higher than what the hypothetical carrier would have to charge to provide the needed service to the complaining shipper while fully covering all its costs, including a reasonable return.

To make an SAC presentation, a shipper designs a hypothetical new carrier (a stand-alone railroad, or SARR) that is specifically tailored to serve an optimum traffic group with the optimum physical plant (rail system) needed for that traffic. Projected traffic volumes, operating speeds, and traffic densities

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[34] The revenue adequacy constraint ensures that a captive shipper will "not be required to continue to pay differentially higher rates than other shippers when some or all of that differential is no longer necessary to ensure a financially sound carrier capable of meeting its current and future service needs." *Id.* 1 I.C.C.2d at 535-36.

[35] The management efficiency constraint protects captive shippers from paying for avoidable inefficiencies that are shown to increase a railroad's revenue need to a point where the shipper's rate is affected. The management efficiency constraint focuses on both short-run and long-run efficiency. *Id.* at 537-42.

[36] The SAC constraint measures efficiency and ensures that the captive shipper does not cross-subsidize other traffic. It assures that the shipper is not required to pay any more than would be required to replicate the rail service that it needs (assuming no barriers to entry or exit). *Id.* at 542-46.

must be calculated to determine the requirements for locomotives, cars, and train operating personnel. A detailed operating plan must be developed to further define the physical plant that would be needed for the SARR. For example, roadway must be sufficient to permit the attainment of the speeds and density that are presumed. The length and frequency of passing sidings must be able to accommodate the specific train lengths and frequency of train meets that are assumed, and traffic control devices must be designed to allow trains traveling in opposite directions on the same track to be handled safely and efficiently based on the density and congestion assumed in the operating plan.

These plans are used to compute the total investment and operating costs that would be incurred by the SARR[37] and would need to be recovered by it. To be fully viable, a SARR would have to generate sufficient revenues to cover its investment costs, the cost of funds tied up during the construction period, operating expenses, tax liabilities, and a reasonable return on investment.[38] The maximum reasonable revenue, or revenue ceiling, for the incumbent railroad from the selected traffic group is the revenue that the SARR would require to cover fully its costs.

The next step in the SAC analysis is to estimate the total revenues that would be generated by the SARR. Absent better evidence, we presume that the SARR revenues would be comparable to the revenues generated by the existing rates being paid by the traffic that is included in the SARR group.

Because costs would be incurred and revenues generated over many years, a present value analysis is required to take account of the time value of money (*i.e.*, to discount dollar amounts to a common point in time using an appropriate deflator). We use a computerized discounted cash flow (DCF) model to convert the stream of SARR revenues and costs over a specified time period into current dollars.[39]

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[37] Any costs attributable to barriers to entry (or exit) are excluded from an SAC analysis. Entry barriers can take the form of any friction that would slow entry into the industry and concomitantly increase the cost of entering. These include resource constraints that slow the construction of the rail plant and legal or regulatory barriers or requirements that would impede entry.

[38] *See, Bituminous Coal--Hiawatha, UT to Moapa, NV,* 10 I.C.C.2d 259, 274-79 (1994) *(Nevada Power II).*

[39] We discount the revenue streams to the time at which the SARR service would be (hypothetically) initiated.

If the revenues generated by the traffic in the SARR shipper group exceed the revenues that would be needed to cover the costs of the SARR, we can conclude that the existing rate levels are unreasonably high. We then determine the extent to which the revenues attributable to the complaining shipper are excessive and prescribe a maximum reasonable rate (based on what the SARR should charge that shipper) and order reparations if necessary. However, we may not prescribe a rate any lower than the level at which the revenues from the complaining shipper's traffic are equivalent to 180% of the variable cost to the defendant railroad of serving that shipper. That is because, as noted above, we lack jurisdiction to regulate rail rates below that level.

B. WTRR SYSTEM

1. *Traffic Group.*

Because an SAC analysis is a means of eliminating existing inefficiencies and cross-subsidies between different traffic, the complaining shipper can select any subset of available traffic to determine the least cost at which that subset of traffic could be served independently of other traffic. In this case, the traffic selected by WTU for its hypothetical SARR, called the West Texas Railroad (WTRR), is limited to the coal traffic of 11 selected power plants that are currently being served by BN. All of these shippers (except for WTU) use BN contract carriage. The SAC analysis assumes that WTRR would replace BN, that is, step into the shoes of BN under the existing transportation contracts.[40]

With one exception, this coal traffic all originates in the Powder River Basin of Wyoming. (The Coleto Creek plant gets its coal from Colorado.) The following table lists this traffic (by plant and shipper), shows the 1994 tonnage levels, and identifies participating carriers and interchange point(s) where applicable.

[40] *See, Nevada Power II,* 10 I.C.C.2d at 267.

| **PLANT**<br>-----<br>**UTILITY** | **1994 BN TONNAGE** | **CARRIERS**<br>----<br>**INTERCHANGE POINT(S)** |
|---|---|---|
| LARAMIE RIVER (Moba, WY)<br>Basin Electric Power Cooperative | 7,354,395 | BN |
| COLETO CREEK (Coleto Creek, TX)<br>Central Power & Light Co. | 1,828,602 | DRGW-BN-SP<br>Pueblo, CO; Ft. Worth, TX |
| PARISH (Smithers Lake, TX)<br>Houston Light & Power | 10,468,016 | BN-ATSF**<br>Ft. Worth |
| JEFFREY ENERGY CENTER (Jeff.,KS)<br>Western Resources, Inc. | 7,838,352 | BN-UP<br>Northport, NE |
| GERALD GENTLEMAN (Wallace, NE)<br>Nebraska Public Power District | 2,435,024 | BN |
| COMANCHE (Pueblo, CO)<br>Public Service of Colorado | 2,098,625 | BN |
| PAWNEE (Pawnee Jct., CO)<br>Public Service of Colorado | 1,944,477 | BN |
| HARRINGTON (Amarillo, TX)<br>Southwestern Public Service Co. | 3,511,984 | BN |
| TOLK (Amarillo, TX)<br>Southwestern Public Service Co. | 4,440,049 | BN-ATSF**<br>Denver, CO or Amarillo, TX[41] |
| HOLCOMB (Holcomb, KS)<br>Sunflower Electric Power Co. | 1,351,501 | BN-ATSF**<br>Pueblo, CO |
| OKLAUNION (Oklaunion, TX)<br>West Texas Utilities | 3,036,651 | BN |
| **TOTAL** | 46,307,676 | |

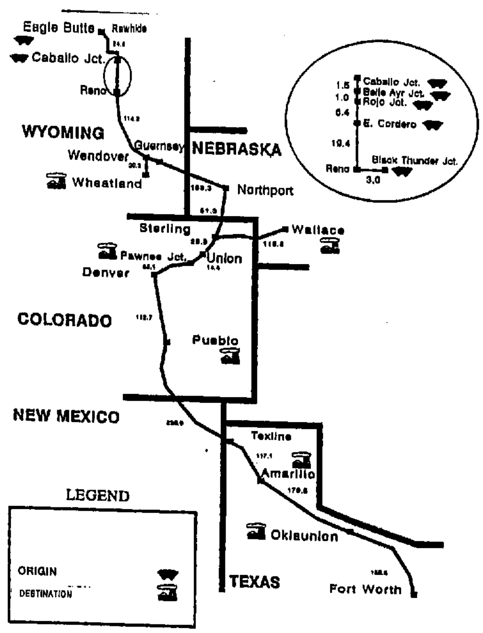
** As noted above, BN and Santa Fe have now merged, making single-line movements out of what was previously joint-line BN-Santa Fe movements.

[41] WTU's SAC presentation assumes that WTRR would interchange all of the Tolk traffic at Amarillo. The existing transportation contract, however, specifies that 75% of this traffic is interchanged by BN at Denver, and only 25% at Amarillo. Our SAC analysis assumes that WTRR would replace BN in these movements, but it does not assume that the contract would be displaced or its terms changed, as WTU suggests.

2. *Route System.*

To serve this traffic, the WTRR system would consist of approximately 1,400 route miles of lines that follow the path of existing BN lines and traverse five states (Wyoming, Nebraska, Colorado, New Mexico, and Texas).[42] The system would extend from Eagle Butte Junction, to Fort Worth, TX, with branch lines from Wendover to Wheatland, WY, and from Sterling, CO, to Wallace, NE. The WTRR network is displayed pictorially below.

SCHEMATIC OF WTRR ROUTE




[42] As explained in Appendix A, we use BN's calculation of 1416.3 total main-line route miles for the WTRR system.

WTRR would interchange traffic, at existing BN interchange points, with four other carriers: the Denver & Rio Grand Western Railroad (DRGW), at Pueblo, CO; the Santa Fe, at Denver, Pueblo, and Ft. Worth and Amarillo, TX; the Southern Pacific Transportation Company (SP), at Fort Worth; and the UPRR, at Northport, NE.

The WTRR network is discussed in more detail in Appendix A.

3. *Traffic Volumes.*

Both parties agree that, at least in the first several years of operation, the WTRR would have to be capable of handling over 40 million tons of traffic annually, in heavily laden unit coal trains, in order to provide the same level of service currently provided by BN for this traffic group. This determines much of the total road property investment that would be required, regardless of whether traffic volumes would increase or decrease in later years. Operating expenses, on the other hand, would vary with changes in volumes. Therefore, traffic volumes are a factor in determining the total costs for the WTRR.[43]

a. *Base-year volumes.*

According to BN waybill data, more than 46 million tons moved by BN to the 11 generating stations in the WTRR traffic group in 1994. With the exception of one plant (the Gerald Gentleman plant), there is no dispute about this base-year tonnage.

With respect to the Gerald Gentleman traffic, BN points out that, in 1994, the shipper, Nebraska Public Power District (NPPD), completed a build-out from Gerald Gentleman to the UPRR. BN states that it has subsequently carried only the minimum contract tonnage to Gerald Gentleman. Indeed, BN's waybill data show that BN moved only 2.435 million tons of coal to that plant in 1994, whereas WTU notes that a total of 3.71 million tons of coal were delivered to that plant in 1994.[44] WTU assumes that WTRR would not only handle BN's existing share of this traffic, but, as the least-cost carrier, would also capture the

[43] Traffic volume also affects the revenue stream for the DCF calculation.

[44] WTU relies on data collected on the Federal Energy Regulatory Commission's Form 423. This form identifies all coal received by the generating plant, not just the tonnage transported by BN.

incremental tonnage now moving to the plant via UPRR. However, WTU has not presented sufficient evidence about the portion of this traffic that is handled by UPRR to include it in the SAC analysis.[45] If that tonnage also moves under contract, it would not be available to WTRR until the contract expires. Accordingly, we regard BN's 1994 traffic volumes as the best evidence of record with respect to NPPD's Gerald Gentleman traffic, and we use BN's traffic volumes as the base-year volume.

b. *Future Volumes--1995 through 2014.*

In this case, the parties both use a 20-year SAC analysis, covering the period from 1995 through 2014. The existing transportation contracts for all of the other utilities in the WTRR traffic group are set to expire during this 20-year period. WTU assumes that WTRR would retain all of BN's current portion of this traffic after the contracts expire. Further, it assumes that traffic volumes would grow in line with BN's own regional projections for coal tonnage growth for 1994 through 1997[46] and steadily thereafter. WTU assumes that each plant's coal needs would be limited by an 85% plant capacity factor,[47] but it also assumes that three new coal-fired plants will be constructed during the SAC period.[48] Based on these assumptions, WTU projects increasing annual volumes that would peak at slightly more than 62 million tons in 2014. BN assails each of these assumptions.

i. *Retention of Traffic, With Growth*

BN argues that it cannot expect to retain the existing traffic of this traffic group after the current transportation contracts expire, and that similarly we

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[45] We have no evidence as to the revenues that should be attributed to the UPRR portion of this traffic.

[46] These growth projections, made in the normal course of business, were obtained from BN under discovery. WTU applies to each origin-destination pair the growth projection for the applicable region.

[47] Capacity factor represents the practical limitations to the use of a plant to produce electricity. It accounts for the fact that a plant does not normally operate at full capacity (peak levels) at all times, in view of fluctuating system demand and economic dispatch. It also accounts for the non-availability of the plant during periods of maintenance.

[48] WTU relies on current plans for a second plant to be constructed at Coleto Creek, Oklaunion, and Pawnee.

cannot assume that WTRR would retain this traffic. To the contrary, BN argues, a considerable portion of this traffic would be lost during the 20-year SAC period, as a result of competitive options relating to increased use of other western coal sources, bulk power sales, or competition from other carriers.

BN has not backed up its argument with sufficiently specific evidence to overcome the general presumption that this traffic would continue to be available to WTRR. The assertions made by BN's director of coal marketing, estimating the likelihood of retaining the traffic to each of these utilities,[49] are not backed up by supporting evidence of utility-specific competitive options. Similarly, BN's unsupported evidence regarding competitive rail rate levels for movements to certain midwest utilities[50] has not been shown to be relevant to the competitive environment for southwestern utilities generally or to the traffic of the eleven plants in this particular traffic group.[51]

For some utilities, BN contends that competition would result from trackage rights granted SP as a result of the BN/Santa Fe merger. However, from the shipper's perspective, those trackage rights did not introduce new competition; they merely preserved existing competitive options by substituting a new competitor for one of the merging railroads where there had previously been competition between BN and Santa Fe.

In short, there is no persuasive evidence that the general environment that produced the existing contracts and existing coal usage of this shipper group has changed or will change in such a way (or to such a degree) that the current traffic of this group would be rendered unrepresentative. Nor is there persuasive evidence that this traffic will not continue to grow in line with BN's own regional coal growth forecasts -- forecasts that were prepared in the ordinary

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[49] BN Reply, Shalah V.S. at 14-26.

[50] *See,* BN Reply, Mann V.S., Exh. CEM-3. The midwest utilities covered in that evidence are: Associated Electric Cooperative; Detroit Edison Co.; Electric Energy Inc.; Indiana Michigan Power Co.; Indiana-Kentucky Electric Co.; Kansas City Power & Light Co.; Northern Indiana Public Service; Oklahoma Gas & Electric Co.; and Utility United Inc. The ton-mile rates are for both spot and contract movements in areas where PRB coal is being introduced and aggressively marketed by railroads.

[51] Indeed, the transportation contracts entered into in 1994 for the Jeffrey Energy Center and Pawnee and Comanche plants exceed this so-called competitive rate level by substantial margins.

course of business and not for purposes of advancing its position in this case.[52] Accordingly, we project WTRR coal tonnages using BN's regional projections.[53]

### ii. *Capacity Limitations*

BN challenges WTU's use of an 85% capacity factor as the limit on growth in coal tonnage. BN argues that the coal plants cannot continue to operate at this level because their ability to generate electricity declines with age, and that future coal volumes should be capped at an average 70% long-term capacity factor.

The only specific evidence in the record on this issue relates to the operations in 1994 of those utilities that are located in Texas. This evidence was developed from monthly fuel reports prepared by the Public Utility Commission of Texas. BN suggests that the 1994 Texas data are not representative because there was an outage at a nuclear plant in 1994 that resulted in other plants being operated above their normal levels. However, as WTU notes, in the second half of 1994 the nuclear plant was back on-line and operating at 98% of capacity.

Focusing only on the data for the second half of 1994, the record shows that these utilities generally operate substantially above a 70% capacity level. Thus, a 70% capacity factor would be clearly inappropriate as an upper limit on a plant's need for coal. Moreover, as a plant uses more coal, it requires more coal to produce the same output, *i.e.*, it results in decreased efficiency (higher heat rates) as the plant ages.[54] Therefore, as time passes, we would expect each plant

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[52] BN forecasted increased coal tonnage to the geographic areas served by the Coleto Creek and Gerald Gentleman plants, notwithstanding that its contracts to serve these plants were soon to expire. Thus, it must be presumed that BN expected to retain the traffic.

[53] WTU used BN's waybill data and adjusted it to reflect forecasted tonnage increases. That approach is proper for 1995-97 data, as to which actual tonnages are unavailable. For 1994, however, actual tonnages are available. Therefore we have not applied the 1994 portion of these forecasts to the actual 1994 tonnage figures we have used, and we have adjusted the 1995-1997 forecast tonnages using the incremental changes in the forecasts for those years. For tonnage increases after 1997, we assume a continuing trend by using the average of the increase from 1994 to 1997.

[54] BN asserts that as a generating plant ages, its availability and capacity decline and less coal is burned. However, other evidence in BN's reply shows that as plants age, their heat rates rise. BN Reply, Avera V.S., Exh. WEA-36. This requires a plant to burn more coal to generate the same

(continued...)

to use more, rather than less coal. For that reason, and because BN's 70 % ceiling is plainly too low, we use WTU's 85% capacity factor as the best evidence of record here.

iii. *New Plants*

BN provided evidence showing that the additional coal-fired generating capacity is now scheduled to come on-line later than originally planned, and that Pawnee 2 will have a lesser capacity than originally planned.[55] For that reason, BN's SAC evidence assumes that only 50% of the originally projected new coal-fired capacity will be brought on-line during the SAC period.[56] We agree with BN's position on this issue, and we adjust the WTRR future coal tonnages accordingly.

Annual volumes are summarized in Appendix E, Table E*.

C. OPERATING PLAN AND EXPENSES

After determining the traffic group and volumes and the broader parameters of WTRR's network configuration, the parties developed an operating plan for moving traffic over the SARR. Together with traffic group tonnage, the operating plan determines system-wide requirements and costs for locomotives, cars, and train operating personnel (engineers and other trainmen). Other costs (*e.g.*, the number of non-operating personnel, other labor costs, materials and supplies, administrative and overhead costs, and taxes) can also be estimated once an operating plan is developed.

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(...continued)

level of output. The relationship between plant age and output cannot be definitively resolved on this record.

[55] The 1993 Central and South West System Joint Resources Plan, produced in discovery by WTU, forecasts that Oklaunion 2 will come on-line at the end of 2009 and shows *no* additional coal-fired capacity at CPL through 2011 (the last year covered by the plan). Therefore, BN assumed a 50% probability that Oklaunion 2 will be in operation in 2010 and that Coleto Creek 2 will be operational in 2012. The April 1, 1995 "Bulk Power Supply Program, 1994-2004," released by the Western Systems Coordinating Council, shows that Pawnee 2 is not expected to come on-line until April 2004, and that its capacity has been downgraded to 350 MW.

[56] WTU has not objected to this adjustment.

1. *Operating Plan.*

Among other things, an operating plan entails the identification of train characteristics (such as the numbers of trains and their lengths, consists, weights and speeds) and other operating factors (such as crew changes and the performance of dispatching.) WTU's operating plan assumes that all WTRR traffic would move in unit trains 365 days per year, with a consist of 3 SD70 locomotives and 120 mixed steel and aluminum cars,[57] each loaded with 105 tons. Each train is assumed to have two crewmen. WTU assumes that these trains would attain speeds of 45 and 50 mph loaded and unloaded, respectively, and achieve a system average speed of 25 mph (cycle time speed) between terminals including stops, adverse gradients and curves, and meets with other unit-train traffic. WTU's annual trainload figures are based on these operating assumptions.

BN objects to an average cycle time speed of 25 mph and the use of 120-car consists. BN's operating plan uses BN's actual or planned cycle time and BN's actual, shipper-specific train sizes (which average between 105 and 118 cars per train). These two disputed issues are discussed below.

a. *Cycle time.*

Cycle time is one of the most important factors in developing trainmen, locomotive, and car requirements and the cost associated with these items. WTU's projected 25-mph system average train speed assumes that loaded and empty trains would move at constant transit speeds of 45 and 50 mph, respectively (including off-line miles for interchange traffic), and that each train would experience 16 hours of non-transit time for loading, unloading, crew changes, inspections, and delays. It also assumes that run-through locomotives and cars would achieve constant speeds of 45 and 50 mph while off-line, and that trains would pass on-line at these same speeds.[58] WTU developed train and engine personnel, locomotive, and car requirements based on this operating speed scenario.

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[57] The parties disagree on car types for WTU's traffic. We accept the use of all-aluminum cars for the WTU traffic. *See,* Appendix B, discussion on car ownership costs.

[58] WTU calculates en route time in each direction using its projected loaded and empty train speeds and its system average round trip mileage of 1,711 miles. Adding 16 hours for lo ading and 16 hours for unloading results in a cycle time of 68.11 hours and a cycle-time speed of 25 mph.

BN argues that loaded and empty speeds of 45 and 50 mph, respectively, would not allow the trains to pass, because passing locations are based on an assumed average speed of 25 mph (see discussion on passing sidings in Appendix A). Further, BN asserts that WTU cannot assume that interline railroads could or would achieve those 45 and 50 mph operating levels.

We agree that approximately twice as many passing sidings as WTU's plan incorporates would be needed for trains to attain speeds of 45 to 50 mph. We also agree that WTRR could not assume that connecting railroads would meet the same level of operating efficiencies.

For WTRR's cycle time, BN combined the actual and planned on-line run time and actual off-line run time from its own 1994 unit coal train cycle performances for this traffic group.[59] We accept BN's on- and off-line cycle times.[60]

b. *Cars per train.*

BN maintains that train sizes are dictated by the specific car capacity of the particular coal mines and utilities involved.[61] In this regard, BN alleges that utility unloading operations typically involve mechanical arms that either push or pull loaded cars through unloading equipment. It notes several instances where 120-car trains would exceed the weight capacity of the unloading equipment or otherwise be inappropriate:[62]

> For example, in the case of Pawnee, train size is limited due to the capability of the indexer at destination. In the case of Holcomb, the limitations are due to the size of their car fleet -- they have specifically requested that train sizes not be increased due to this limitation. In the case of [HPL]

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[59] BN relies on the lower of planned or actual on-line cycle time; it uses actual off-line cycle time for interline traffic moving off-line. Planned cycle times are based on optimum operating conditions over each segment traversed and necessary time for such ordinary operating activities as loading, unloading, crew changes, waiting in a queue to load, and refueling.

[60] BN's cycle times do not show a separation between actual travel or run time and non-travel time (*i.e.*, loading, unloading, crew changes, etc.). However, deducting WTU's proposed 16 hours of non-travel time (the only evidence of record on this item) from BN's on-line loaded cycle time, and then dividing the results into BN's on-line loaded miles, suggests that WTRR's trains would achieve average on-line loaded speeds of between 9.29 and 13.2 mph for the entire group of shippers to be served by WTRR.

[61] WTU claims that 120-car trains have moved over the BN system. However, it offers no evidence to show that traffic for this shipper group moves in 120-car consists.

[62] BN Reply, Behn V.S. at 12.

and Basin Electric, although BN has never shipped trains of this size to the plants, they have expressed a willingness to try longer (*i.e.*, 120-car) trains.

The shipments to the Coleto Creek plant present special problems. Coleto Creek burns Colorado coal hauled by the [DRGW] from the origin mines to Pueblo, carried by the BN from Pueblo to Fort Worth, and interchanged with the [SP] for termination at the plant. The Colorado terrain traversed by the DRGW prevents the use of trains over 105 cars. Accordingly, whether or not the WTRR could achieve efficiencies in train size, it could not run trains originating in Colorado for Coleto Creek in sizes over 105 cars-per-train. Unless the WTRR were to engage in a process of reclassifying the 105-car trains it receives at Pueblo into 120-car trains for the haul on the WTRR between Pueblo and Ft. Worth (clearly an inefficient and costly exercise), those trains would be limited to the length received from the DRGW.

Even where a utility can accommodate 120-car trains, BN maintains that there are operating efficiencies militating against it. Specifically, it states that, at that weight and size, mechanical breakdowns and stalls increase. Additionally, there would be a substantially higher rate of bad order cars, which would interfere with train operations and increase cycle time.

We agree that WTRR's train sizes must reflect the operational constraints and restrictions faced by connecting railroads, coal mines, and utilities. Because WTU cannot assume a more efficient operation than allowed by controlling factors, we accept BN's shipper-specific train sizes.

2. *Operating Expenses.*

Because the cycle time and train consists in turn determine various operating expenses, we use BN's operating plan to determine the operating parameters that would be required by the WTRR. For that reason, we find that most of the operating expenses calculated by WTU are understated.

The parties also differ on the unit costs that should be assigned to each expense category. As discussed in greater detail in Appendix B, we accept WTU's unit cost figures for some items, but BN's unit cost figures for most items. These unit costs are then applied to the size and configuration that have been determined for the WTRR.

The primary differences between the total operating expenses that we accept and those calculated by BN result from BN's overstatement of two cost items. First, to ensure continued service while locomotives undergo repairs, BN applied a 25% spare locomotive margin. We find this figure clearly excessive because it includes an allowance for delays already factored into the cycle time and assumes peak demand needs not supported by the record. WTU applied an 8%

margin for purposes of the operating plan. However, somewhat inconsistently, WTU used a 10% spare locomotive margin for purposes of computing BN's actual variable cost -- an indication of what it believes to be the spare locomotive margin actually experienced by BN for its traffic. Because we consider the 10% number (which we have accepted in previous cases) to be a more realistic estimate, we use that figure.

Second, as further discussed in Appendix B, BN failed to substantiate its estimate of the "ownership" (lease) cost for the 458 freight cars supplied to WTU. (The other shippers in the WTRR group supply their own cars.) BN uses the highest end of the range of car lease costs that it claims it incurs. WTU applies the lowest end of that range. Under SAC principles, we apply the least cost that would be available to the SARR.

Finally, as explained in Appendix C, we find that WTU understated operating expenses by not including certain types of maintenance-of-way (MOW) expenses. The parties agree that "programmed maintenance" should be treated as a capital cost,[63] but they disagree on what maintenance activities constitute "programmed" (as opposed to "operating")[64] maintenance. We have generally accepted BN's position on these maintenance issues. However, we have made some adjustments to reflect the revised system mileage and the acceptance of certain WTU unit costs.

## D. BARRIERS TO ENTRY

### 1. *General Approach*

The ultimate objective of the SAC constraint is to simulate a competitive rate standard for non-competitive rail movements by determining the rate that would be available to a shipper in a contestable market environment. As

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[63] The replacement of an asset worn out by providing service is termed "programmed maintenance." Because WTRR would be built using mostly new assets, the parties exclude programmed maintenance from their operating expense presentations. Instead, they include in the DCF model a replacement cost of each plant asset, as it reaches the end of its useful life, as a method for insuring that the WTRR could continue to provide rail service.

[64] The requirement that assets be kept in good repair demands annual upkeep expenditures for maintenance. Parties sometimes refer to this as "spot maintenance," although that term properly refers only to keeping track assets in operating condition. *See, Bituminous Coal--Hiawatha, UT to Moapa, NV*, 6 I.C.C.2d 1, 60 n.17 (1989) *(Nevada Power I)*.

explained in *Rate Guidelines*, 1 I.C.C.2d at 529, the railroad industry is not considered contestable because of its barriers to entry and exit. It is only by excluding from the SAC analysis the costs and other limitations associated with these entry and exit barriers that we can approximate the cost structure of a contestable market.

What constitutes a barrier cost is a subject of dispute in this case.[65] BN argues that barriers to entry are confined to the additional costs that a second or a subsequent entrant must incur at the time of entry just because it would not be the first party to enter the market. BN would distinguish between such "costs that give an advantage to the incumbent vis-a-vis a new entrant" and "forward-looking replacement costs--costs that either an incumbent or a new entrant would incur today."[66] As a result, BN would include in the SAC calculation all sunk investment costs;[67] it would seek to negate the effect of entry and exit barriers by employing a cost of capital that excludes any risk premium associated with the second or subsequent entry.

BN's approach assumes that there are virtually no barriers to entry into railroading today. That approach would be inconsistent with the underlying theory of the SAC analysis. If the threat of actual entry were sufficient to constrain rates, there would be no need for SAC in the first place.

WTU points out that BN Witness Willig's testimony is at odds with his own published work on barriers to entry.[68] WTU insists that in an SAC analysis,

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[65] Indeed, "[t]he discussion of barriers in economic literature hardly reflects consensus ***. [D]iffering definitions allow their authors to hold different opinions about specific sources of barriers." Harold Demsetz, "Barriers to Entry," *American Economic Review*, March 1982 at 47. "There appears to be no precise definition." Robert H. Bork, "Barriers to Entry," *The Antitrust Paradox*, Basic Books, Inc., 1978 at 310.

[66] BN Reply, Willig V.S. at 3.

[67] "Sunk costs are costs that cannot be eliminated or recouped, even by the total cessation of operations and liquidation of investment." *Arkansas Power & Light Co. v. Burlington N.R.R.*, 3 I.C.C.2d 757, 771 n.32 (1987).

[68] *See* Baumol, Panzar and Willig, *Contestable Markets and the Theory of Industry Structure*, Harcourt Brace Jovanovich, Inc, 1988 (*Contestable Markets*), at 282, Definition 10A3: Entry Barrier ("An entry barrier is anything that imposes an expenditure by a new entrant into the industry, but imposes no equivalent cost upon the incumbent.") *See also id.* at 289: "Entry costs, on the other hand, are *defined* here as costs that fall upon the entrant but *not* the incumbent at equal outputs. For example, if the incumbent were established before regulation of the industry began,

(continued...)

where the objective is to determine the reasonableness of the rate charged by the incumbent, the incumbent should not be allowed to earn monopoly rents on costs it did not incur. Thus, WTU would define as entry barriers, and exclude from the SAC computation, any costs that a new entrant must incur that were not incurred by the incumbent. This would preclude the incumbent from earning monopoly rents in the form of a return on investments it never actually made, but would permit the incumbent a competitive return on the current replacement cost of all investment that it did incur. Thus, WTU's approach to entry barriers seeks to balance the interests of the railroad and the shipper.

We agree with WTU's approach, because it comports with our regulatory purpose of constraining a railroad from monopoly pricing. It also accords with our view of the SARR as a replacement carrier that steps into the shoes of the incumbent carrier for the segment of the rail system that the SARR would serve.[69] With this guiding principle in mind, we analyze the disputed barrier costs in this case.

2. *Assemblage Value of Land*

Based on its view of entry barriers, BN would include in the WTRR's land acquisition costs the cost of assembling a contiguous corridor.[70] WTU argues that BN did not pay an assemblage cost to acquire its right-of-way, but in fact acquired its rights-of-way through Federal, state or local grants, easements or adverse possessions. WTU contends that the inclusion of an assemblage factor would permit BN to enjoy monopoly rents as a result of its subsidized land acquisition. It also asserts that, while the land itself could be diverted to other profitable uses and BN should thus earn a return on the land, BN should not be allowed to earn a return on the assemblage cost because alternative uses for land generally carry no comparable assemblage value.

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(...continued)

but future entrants must incur heavy legal and delay expenses before they can start business, then these costs do constitute an entry barrier in the sense defined." (emphasis in original).

[69] *See, Nevada Power II,* 10 I.C.C.2d at 267, where we exclude from the SAC analysis any behavior, such as post-entry price retaliation by the incumbent, that would make sunk costs a barrier to costlessly reversible entry. Instead, the SARR is viewed as a replacement for that segment of the rail system whose services it would replicate.

[70] BN argues that if WTRR's investors were precluded from earning a competitive return on these land costs, the assets would be diverted to more profitable uses.

We agree that inclusion in the SAC of the land assemblage factor, where such a cost was not incurred by BN, would violate the fundamental assumption of unimpeded entry and exit underlying the theory of contestability. Assemblage costs represent monopoly rents above the fair market price of land in non-rail uses.[71]

It is well-known that large parcels of land were given to the western railroads, and BN has not shown that it incurred a corridor assemblage cost on the majority of its route from the PRB to Fort Worth. Therefore, we do not include an assemblage value for land for the WTRR, with one exception. BN has shown that, in purchasing land in the 1970's for the Orin corridor (between Orin, WY, and the PRB), it did in fact pay a price that included an assemblage factor. Because this particular land cost represents an actual expenditure for a corridor that would be included in the WTRR, we incorporate it in our SAC calculations.

3. *Resource Availability*

WTU's SAC analysis assumes that construction of the WTRR would be completed in only the time necessary to construct the most time-consuming construction project, and that sufficient construction resources would be available to complete the entire system in this time frame. BN points out that, in reality, limits on the resources that can be usefully applied to large-scale rail construction projects would serve to prolong the construction period and/or to inflate resource costs. BN argues that these real world constraints on labor, material, and machinery, which add to the cost of entering railroading on a large scale, should be reflected in the SAC analysis.

We do not agree that captive shippers should be required to shoulder this added cost burden. Existing railroads were built on a piecemeal basis, and were not saddled with a need to marshal, in such a short period of time, the resources required to construct a 1,400-mile rail system. Moreover, BN's construction of

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[71] *See, Nevada Power I,* 6 I.C.C.2d at 53. BN asserts (BN Brief at 31) that:

> This reference to "monopoly rent" is unclear, but whatever the Commission intended by this term, it is clear that land assemblage costs are not a "monopoly rent" that accrues to the incumbent. The market value of assembled parcels of land is the price that *landowners*--not the incumbent--demand.

It is true that BN did not originally collect this rent. But neither did it pay this rent, and that is why it should not be permitted to collect a return on it.

and entry into this corridor was sequential in nature; it began to earn revenues on individual line segments as they were constructed, before this entire 1,400-mile system was in place.

While BN certainly incurred some investment costs before they produced earnings, we have no way of quantifying those costs, and BN has not offered any. In any event, our SAC test permits a competitive return (the opportunity cost) on the monies invested during the construction period. Therefore, for purposes of the SAC analysis, we believe that WTU's assumption of unlimited resource availability at current market prices balances the cost to WTRR of investing in (temporarily) unproductive assets while entering the market with BN's cost of entering this market during a much earlier time.

For these reasons, our SAC analysis assumes that labor, material, and machinery would be available in sufficient quantity at current market prices to construct WTRR in the minimum time dictated by technological feasibility.[72]

4. *Grade Crossings*

BN points out that the party crossing an existing right-of-way (the "junior party") customarily is responsible for the costs associated with the crossing. For example, where a new highway crosses an existing railroad right-of-way, the cost of that crossing is included in the cost of constructing the highway; the railroad would incur no expense for this crossing. BN maintains that WTRR, as a new entrant, would be the junior party with respect to all such crossings. Therefore, BN includes these crossing costs in its SAC computation.

Under our guiding principle for barrier costs, if BN incurred the cost of separating its right-of-way from other rights-of-way, then so should the WTRR. However, BN has not shown where it was the junior party. Therefore, we do not include any grade separation costs in the SAC analysis.

5. *Regulatory Requirements*

Finally, the cost of needed permits, licenses and environmental compliance also must be considered as a barrier when that cost was not incurred by the

[72] *Accord, Nevada Power* I, 6 I.C.C.2d at 51-52.

incumbent.[73] Because BN has not shown the extent to which it faced such requirements when its lines were built, we do not include these costs in the SAC analysis.

## E. CONSTRUCTION COSTS

### 1. *Initial Investment Costs.*

The cost of designing and building WTRR would require the commitment of substantial sums of money over a multi-year period. As explained in Appendix A, these costs are based on a WTRR rail system that would consist of 1,392.8 miles of main-line track, 107.6 miles of passing track, and 44.02 miles of yard track. (No investment costs would be included for 23.5 miles of joint-facility track between Sterling and Union, CO; the cost of using that track is included as an operating expense.[74])

The evidence on construction costs falls into two general categories -- material costs and labor costs. We have examined the evidence submitted to support the parties' respective estimates for specific goods and services. Where both parties present reasonable (but different) price estimates, we are guided by SAC principles that seek to determine the least-cost transportation system. Thus, when two valid cost estimates are presented, we select the lower one.

As detailed in Appendix D, BN estimates that $2.7 billion would be required over a 5-year period to build WTRR. Its figures must be adjusted to eliminate barrier-to-entry costs, and we find that it has overstated unit costs for earthworks, ballast, ties, track labor, and various other items. WTU, on the other hand, estimates that $1.6 billion would be required to construct the WTRR. However, as explained in Appendix D, we found that WTU has understated the cost to build WTRR in certain respects.

Based on the evidence presented, we find that it would cost a minimum of $1.9 billion to design and construct WTRR. The costs associated with each individual category of labor and material necessary to construct this hypothetical system are discussed in detail in Appendix D.

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[73] BN's argument to the contrary is specifically contradicted in *Contestable Markets*, at 289.

[74] BN uses this track under a trackage rights arrangement with UPRR, and our SAC analysis assumes that WTRR would take BN's place under that arrangement.

2. *Construction time period.*

Unquestionably, the most complex and time-consuming project associated with building WTRR would be construction of the 4,000-foot Estelline Bridge over the Red River in Texas. Therefore, the construction schedule for this bridge would dictate the minimum time needed to complete the WTRR. WTU estimates that the Estelline Bridge would take 3 years to plan and build. WTU assumes that the other components of the WTRR would be built concurrently with the Estelline Bridge and that the entire SARR would be completed within a 3-year period.

While BN agrees that various construction activities can proceed in tandem, it maintains that it would take 5 years to plan and complete construction. BN assumes that construction would not begin until the fourth year, to allow for an environmental impact statement, the engineering design, and the property purchases to be completed first. However, our barrier-to-entry analysis assumes that the project would not be delayed by regulatory requirements such as an environmental impact statement.

BN also argues that track would have to be laid to the Estelline Bridge site for delivery of construction materials and that an additional 3½ months would have to be added to the WTU construction schedule for that track construction. This argument was mooted when WTU changed the bridge design from truss to beam span construction. The beam span design would permit materials to be delivered to the bridge site by truck. As long as bridge construction materials could be shipped by truck, the time frame for construction of the bridge would be independent of track completion.

Given our assumption as to the availability of sufficient construction resources, labor, and materials, we find it reasonable to assume that the bridge and the entire WTRR could be completed within the 3-year time span projected by WTU.

F. SAC REVENUES

WTU assumes that the revenue contribution to WTRR from other (non-complaining) shippers in the traffic group would continue at the current contract rate levels,[75] indexed upwards to reflect general inflation in rail rates. WTU started with the revenues contained in BN's 1994 waybill sample, as the base-year revenue figures.[76] It then estimated WTRR's first quarter 1995 revenues and divided that figure by the shipper group tonnage in the first quarter to calculate an average rate for all WTRR-provided services. WTU next applied quarterly increases to this average rate to reflect projected future escalation in rail rates, based on past trends as reflected in the unadjusted Rail Cost Adjustment Factor (RCAF-U).[77] Finally, WTU multiplied the resulting average quarterly rate by its quarterly tonnage estimate to yield a quarterly revenue estimate.

BN contends that WTU's procedure substantially overestimates the potential for revenues for the WTRR by (1) overstating current average annual contract revenues; (2) using an inappropriate rate escalation factor; and (3) ignoring the effects of competition after the contracts expire. We discuss each of these issues in turn.

1. *Average Current Revenues*

BN claims that pegging the average rate to first-quarter data fails to account for the lower rates that apply to incremental tonnage once contract minimums are met. These lower rates for incremental tonnage would generally apply in the fourth quarter of the year. Accordingly, BN provided average rate data for 1994 by quarter, to more accurately reflect the impact and timing of incentive rates, divisions, and actual tonnages transported.[78]

The contracts of the other shippers in the group were filed with the ICC. Based on our review of those contracts, we agree that WTU's use of an average annual rate based on first-quarter data would overstate the revenues earned from

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[75] *See, Rate Guidelines,* 1 I.C.C.2d at 544.

[76] Because WTU (wrongly) assumes that WTRR would move all the traffic destined to the Gerald Gentleman plant, its base-year figures exceed those contained in BN's 1994 waybill.

[77] The RCAF-U is a measure of the inflation in the costs experienced by the rail industry (without taking into account past improvements in the overall productivity of the industry). It is updated quarterly in Ex Parte No. 290 (Sub-No. 5), *Quarterly Rail Cost Adjustment Factor*. Based on past RCAF-U trends, WTU estimates that rail revenues would increase at a rate of 2.81% per year from 1995 to 2014.

[78] BN's evidence shows that actual 1994 quarterly tonnages are not shipped in uniform increments. BN's revenue estimates assume that tonnage throughout the 1995-2014 period will be transported as it was in 1994.

those contracts that contain incentive rates on incremental volumes. We find that BN's evidence more accurately reflects the revenues that would be earned from the group traffic.

2. *Rate Escalation*

BN maintains that, under the contracts, rates have escalated less rapidly than the RCAF-U. BN developed a weighted-average index based on the actual contract escalation letters sent by BN to each utility.[79] According to that index, the rate adjustment mechanisms for the 10 contracts have yielded rate increases equivalent to just 12% of the RCAF-U during the same time period.

We reviewed these contracts, which were filed with the ICC, and conclude that they provide for escalation of the rates beyond the level claimed by BN. Indeed, BN's own evidence shows that the escalation clauses in 7 of the 10 contracts would produce rate increases from 2.2% to 4.7%.[80] Thus, we find that WTU's 2.81% rate escalation factor is the best evidence of record.

3. *Competitive Rate Constraints*

BN claims that the rates for this traffic group will be constrained by significant new and increased levels of competition after the current contracts expire. Its support for this claim is the testimony of Witness Mann, who estimated competitive rates (to replace expired contract rates) based on rates to midwest utilities. However, as noted above, BN failed to show the relevance of this midwest data, either to traffic in the southwest region generally, or to the traffic of these 11 utilities specifically. Therefore, we apply the general presumption that current revenue contributions are representative for the future for this particular traffic.

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[79] WTU objects to BN's reliance on actual contract escalation letters, because WTU could not validate the data. Only 4 of the 10 shippers in the traffic group permitted discovery by WTU of the rate escalation clauses in their transportation contracts.

[80] BN's evidence shows that, from 1991 through the present, rates for the Gerald Gentleman, Parish, and Laramie River plants actually declined. However, we have reviewed the rate adjustment procedure in each of these contracts and find fairly standard escalation clauses. In at least one instance, the rate reduction resulted from an incentive provision in the contract for the shipper to switch to heavier-loading aluminum cars. Therefore, we conclude that the decline in average rates to these plants is not attributable to the contract escalation clauses, but results from some other reason.

The projected revenues upon which our SAC analysis is based are summarized in Appendix E, Table E.

## G. APPLICATION OF SAC CONSTRAINT

As shown in Appendix E, the revenue stream that would be generated by the traffic in the WTRR shipper group, discounted to January 1, 1995, dollars (the time at which the WTRR service would be hypothetically initiated), would be more than sufficient to cover the stand-alone cost of constructing and operating the railroad. Indeed, the cumulative group revenue ($4.572 billion in present value terms) would exceed the aggregate cost to WTRR of serving this traffic ($3.439 billion in present value terms) by $1.133 billion. Moreover, under our calculations, in each of the 20 years of the SAC period, WTRR's projected annual revenues would exceed the costs allocated to that year.

Because BN's current rates produce revenues above the level needed to provide and sustain efficient service to this traffic group, we can conclude that BN is collecting excessively high rates on this traffic. However, to determine the extent to which the particular rate challenged by WTU in this case is excessive, one must determine the portion of the SAC revenue requirements that should be allocated to the WTU traffic.

The parties propose different methods for allocating the WTRR revenue requirements among the WTRR traffic group.[81] However, as explained in Appendix E, in this case either method would yield a stand-alone rate that would be below 180% of the variable cost to BN of providing service to WTU. Because we have no rate reasonableness jurisdiction over rail rates below the 180% revenue-to-variable cost (r/vc) level, the 180% r/vc level constitutes a floor below which we may not set a maximum reasonable rate. Therefore, we

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[81] BN suggests using the pro rata reduction methodology developed in *Coal Trading Corp. v. Baltimore & O.R.R.*, 6 I.C.C.2d 361 (1990) (*Coal Trading*). Under that approach, the excess revenues in each year would be distributed across the board to reduce the revenue contribution of all traffic in the WTRR group by an equal percentage. In other words, it would make an annual pro rata adjustment to the WTRR rates.

In contrast, WTU would construct a new, equalized rate for all WTRR traffic. It would employ a ton-mile methodology in which each ton-mile handled by the WTRR would be charged the same rate. (This method was rejected in *Coal Trading*, at 377-380, because it precludes differential pricing.)

These methods and other related issues are discussed in more depth in Appendix E.

set the maximum reasonable rate level for the WTU traffic at 180% of BN's variable cost of providing service to WTU.

## H. VARIABLE COST COMPUTATION

In computing the variable cost associated with BN's service to WTU, the parties start with BN's "system average" variable cost.[82] However, each party submitted special studies to focus more specifically on the particular mix of expenses actually incurred in serving the Oklaunion traffic.[83] BN's studies would adjust the system-average costs upward, whereas those offered by WTU would reduce the average cost figures.

The parties' variable cost calculations are discussed in detail in Appendix F. The numbers we use differ somewhat from the parties' figures because we rely on our final 1994 URCS calculation, rather than the parties' own preliminary 1994 URCS calculations. Moreover, we use the system-average costs in our calculations except where a special study is clearly shown to be more representative of the service being provided to WTU than the system-average data.

WTU's cost figures for service units (for lading, tare weight per car, type and number of cars per train, miles, and cycle time) generally are based on aggregate data from various origin mines. Because we are unable to disaggregate this data, and because this decision only addresses the reasonableness of the rate from Rawhide, we use BN's evidence on service unit costs (which is limited to the Rawhide traffic) as the best evidence of record.

We also use BN's figures for the type and number of locomotives used to provide service. WTU's locomotive figures are based on historical movements, with 3.63 locomotives per train and reflecting the overall mix of locomotive types in BN's Alliance coal locomotive pool. BN asserts that it now uses only SD70MAC locomotives for the WTU traffic. Based on this representation that only the more modern locomotives are now used, we apply BN's locomotive figure.

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[82] System average figures are readily available from our Uniform Rail Costing System (URCS), a computer program that computes a carrier's system average cost of providing rail service. URCS data are updated annually for each class I railroad.

[83] WTU developed variable costs for unit-train coal movements, in both railroad- and shipper-owned cars, for WTU shipments from various mines in the PRB to Oklaunion. BN developed variable cost for unit-train movements in railroad-owned cars from only Rawhide to Oklaunion.

As detailed in Appendix F, based on the record before us, we conclude that the variable cost associated with providing service to WTU under the common carrier rate at the 4th quarter 1995 is $7.60 per ton in railroad-owned cars. This would translate into a maximum reasonable rate (at the 180% r/vc level), for the 4th quarter of 1995, of $13.68 per ton in railroad-owned cars for coal originating at Rawhide and terminating at Oklaunion.

## I. CONCLUSION

Based on the record in this case, we find that the challenged common carrier rate being charged by BN for transporting coal originating at Rawhide and terminating at Oklaunion is unreasonably high, and that it is unreasonable for BN to charge a higher rate than needed to recover 180% of its variable cost for providing this transportation.

We award reparations to WTU for that portion of the transportation charges collected by BN after the expiration of the contract between BN and WTU that exceeds the 180% r/vc limit, together with interest to be calculated under our rules in 49 CFR 1141.

We decline to prescribe a rate for the future at a set dollar amount. Rather, we direct BN to establish and maintain a common carrier rate for the movement of coal from Rawhide to Oklaunion that does not yield revenues in excess of the 180% r/vc limit set here. The service to be provided under that rate must be consistent with the service parameters upon which our SAC analysis is based in this decision.

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

COMMISSIONER OWEN, *concurring*: The Board has been presented with a novel and intellectually challenging issue with regard to product competition.

The concept of product competition imposing effective pricing constraints is real; economists have dealt with it for generations. But it was not until 1981 that our predecessor, the Interstate Commerce Commission, confronted and adopted the reality of product competition, which is the ability of a shipper or originator of freight to use a substitute for the involved commodity.[84]

In 1985, out of concern that requiring evidence of product and geographic competition placed too great a burden on shippers, the ICC shifted the evidentiary burden of demonstrating product and geographic competition onto the railroads.[85]

In this instant case, Burlington Northern (BN) asserts that West Texas Utility Company (WTU) -- one of four electric utility operating subsidies of Central and South West Corporation (CSW) -- can generate power elsewhere on its system or purchase power from outside the system. The result, avers BN, is that if WTU obtained its power elsewhere, WTU could produce less power at its Oklaunion generating plant and avoid BN's service.

Recent developments in the electric utility industry warrant careful analysis as to whether either of these asserted alternatives -- forms of product competition -- constitute an effective competitive constraint so as to prevent an exercise of undue market power.[86]

According to WTU, Oklaunion is the lowest-cost unit in its system. Had evidence been presented to the contrary -- that it would be economically efficient for WTU to back-down its Oklaunion plant and purchase power from elsewhere -- there could be a strong showing that product competition is sufficient to discipline BN's pricing.

But is it feasible for WTU to purchase power from outside the CSW system?

In 1973 the Supreme Court ruled that an electric utility that withholds wholesale power from a potential competitor is in violation of the antitrust laws.[87] Indeed, the Energy Policy Act of 1992, passed during the Bush Administration, expressly authorized the Federal Energy Regulatory Commission (FERC) to order the wheeling of power for wholesale transaction.[88]

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[84] *Market Dominance Determinations*, 365 I.C.C. 118 (1981), *aff'd on reh'g, Western Coal Traffic League v. United States*, 719 F.2d 772 (5th Cir. 1983) (*en banc*), *cert. denied*, 466 U.S. 953 (1984).

[85] *Product and Geographic Competition*, 2 I.C.C.2d 1 (1985).

[86] *Arizona Public Service Co. v. United States*, 742 F.2d 644, 651 (D.C. Cir. 1984).

[87] *Otter Tail Power Co. v. United States*, 410 U.S. 366, 378-379 (1973).

[88] Energy Policy Act of 1992, 102 Stat. 2776 (1992); 16 U.S.C. 824j (1994).

On April 24, 1996, FERC ordered electric utilities to open up their transmission systems to outside energy providers for the distribution of wholesale power.[89]

Some time in the future, it should be expected that a rate complaint will be brought before this agency by an electric utility that has as a feasible alternative the ability to obtain an adequate supply of lower-cost electric power from sources other than its own generating plant.

Future parties should be prepared to provide appropriate evidence not only with regard to those alternatives, but also the economic and legal ramifications of backing down or even shuttering an existing power plant and whether stranded cost considerations are appropriate in determining whether a railroad possesses market dominance over a commodity in question.

As Congress made clear in the Staggers Rail Act, "it is the policy of the United States Government * * * to allow, to the maximum extent possible, competition and the demand for services to establish reasonable rates for transportation by rail.* * *."[90]

*It is ordered:*

1. Defendant shall, within 60 days, establish and maintain rates for the issue traffic that do not exceed the reasonable rate limitation determined in this decision.

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[89] Open Access and Stranded Cost Final Rule, *FERC Stats. & Regs.* ¶ 32,036 (April 24, 1996). *See* Agis Salpukas, "Electric Utilities to Provide Access for Competitors," *New York Times*, April 25, 1996.

PacifiCorp of Portland, Oregon, already has the distinction of becoming the first "national" utility. PacifiCorp, which operates hydroelectric power plants, already has 145 points of interconnection with other utilities and operates a wholesale-power marketing office in Las Vegas. Additionally, three major California electric utilities -- Pacific Gas & Electric, San Diego Gas & Electric, and Southern California Edison announced April 24 that they are filing with FERC and the California Public Utilities Commission a petition seeking authority jointly to operate a power exchange. Press release from Western Power Exchange (April 25, 1996).

[90] 94 Stat. 1895 (1980); 49 U.S.C. 10101a.

2. Defendant shall pay damages to the complainant, in accordance with this decision, for all shipments moving after the expiration of the contract between the parties and prior to the establishment of a reasonable rate pursuant to paragraph 1.

3. This decision is effective May 3, 1996.

By the Board, Chairman Morgan, Vice Chairman Simmons, and Commissioner Owen. Commissioner Owen concurred with a separate expression.

## APPENDIX A

## NETWORK CONFIGURATION

The following table details the figures used by the parties, and those that we have applied in our SAC analysis, for the miles and type of track that would be required to serve the traffic group selected by WTU in this case.

Table A-1

WTRR SYSTEM MILES

| TYPE OF TRACK | BN | WTU | STB |
|---|---|---|---|
| 1. Main Line | | | |
| Constructed | 1,392.8 | 1,386.0 | 1,392.8 |
| Joint facility | 23.5 | 23.5 | 23.5 |
| TOTAL ROUTE MILES | 1,416.3 | 1,409.5 | 1,416.3 |
| 2. Passing Track | 108.8 | 107.6 | 107.6 |
| 3. Yard Track | | | |
| a. Services | | | |
| Guernsey | 26.10 | 8.23 | 26.10 |
| Denver | 0.00 | 9.89 | 0.00 |
| Amarillo | 3.03 | 0.00 | 3.03 |
| b. Staging | | | |
| Reno | 6.06 | 0.00 | 6.06 |
| Rochelle/Antelope | 1.42 | 0.00 | 1.42 |
| c. Interchange | 14.21 | 0.00 | 0.00 |
| d. Bad Order | 11.36 | 7.03 | 7.03 |
| e. Helper Track | | | |
| Whitetail | .19 | .19 | .19 |
| Palmer Lake | .19 | .19 | .19 |
| Logan Hill | .19 | .00 | .00 |
| TOTAL YARD TRACK MILES | 62.75[91] | 25.53 | 44.02 |
| TOTAL SYSTEMS MILES | 1,587.85 | 1,542.63 | 1,567.92 |

[91] In his reply statement (at 13-14) BN witness Simons states that 67.9 yard track miles are needed. The discrepancy cannot be accounted for in the record.

1. *Main Line.* In their SAC presentations, WTU and BN assume that the WTRR would need to construct 1,386.0 and 1,392.8 miles of main-line track, respectively. Both parties assume that the network over which the WTRR would operate would include 23.5 miles of UPRR track between Sterling and Union, CO, over which BN currently has trackage rights. Thus, the SAC analyses of WTU and BN are based on a WTRR network totaling 1,409.5 and 1,416.3[92] route miles of track, respectively.

BN's evidence contains track charts depicting the number of miles of track needed by WTRR. WTU argues that WTRR would need 6.8 fewer miles than shown in BN's evidence,[93] but it has not provided any documentation (track charts or maps) to support its mileage estimate. In the absence of any supporting documentation by WTU, we accept BN's evidence.

2. *Passing Sidings.* Because WTRR would essentially be a single-track railroad, sidings would have to be available at regular intervals to allow trains to pass each other at meeting points. WTU assumes a 25-mph average speed for both loaded and empty unit trains and a 2-hour interval between trains moving in each direction, and it constructed a chart on that basis to show where trains would meet and where passing track should be located. It found that 71 passing sidings (each 8,000 feet in length) totaling 107.6 miles of passing track, would be needed. The sidings would be connected to main-line track by "No. 11" turnouts.[94]

BN agrees on the number of sidings required, but contends that a 25-mph average speed would require the use of heavier "No. 20" turnouts. Assertedly, the use of No. 11 turnouts would increase overall transit time, because trains would have to slow down when entering and exiting the passing siding. BN's Witness Simons states that the use of No. 20 turnouts would necessitate an additional 662 feet of track per siding.[95]

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[92] BN suggests that industrial sidings are necessary to serve locations originating and terminating network traffic and that maintenance-of-way (MOW) track is needed. However, BN has not identified the amount of additional track needed for these activities, and no additional mileage appears on its WTRR track diagram.

[93] WTU initially assumed that the WTRR would consist of 1,407.8 route miles of track. WTU added 1.7 route miles in response to BN's evidence.

[94] Turnouts (switches) are used to transfer a train from one set of tracks to another.

[95] There is a discrepancy between BN's witnesses Behn and Simons on the length of passing track that would be necessary. Witness Behn states that 8,000-foot passing sidings would be required (a figure which WTU adopts on rebuttal). Witness Simons alleges that the WTRR would require 8,000-foot sidings plus an additional 331 feet at each end to accommodate No. 20 turnouts (resulting in a total siding length of 8,662 feet). Curiously, BN's evidence does not utilize either witness' estimate but instead assumes that 108.8 miles of sidings would be needed. The use of 8,662-foot sidings would result in 116.5 miles of passing sidings (8,662' X 71 siding location = 615,002'/5280 feet per mile = 116.5 miles). The 8,000-foot sidings advocated by witness Behn would result in 107.6 miles of passing sidings (the same figure used by WTU).

We conclude that No. 11 turnouts could be used on the WTRR. Established engineering standards do not require No. 20 turnouts for 25-mph train speeds.[96] In any event, we use BN's evidence on cycle time, which results in an average speed for the WTRR well below 25 mph. Therefore, we apply WTU's 8,000-foot figure for each passing siding and the resulting 107.6 mile figure for total passing track.

3. *Yard, Interchange, Bad Order, and Helper Track.*

a. *Maintenance and refueling yards.* WTU assumes that fueling would be performed by mobile truck equipment under a lease arrangement that would eliminate the need for fueling tracks. Locomotive and car maintenance would also be performed under a lease arrangement, with the contractor providing its own tracks and facilities. However, WTU's evidence does not include any costs for the mobile fueling operation. Further, WTU provides no evidence that any contractor performing rail maintenance work has ever furnished the track and facilities needed to perform the maintenance work. Indeed, BN notes that its contractor would not provide maintenance track or facilities under either a full service or a technical and material support contract. In the absence of evidence showing that it would be realistic to arrange for a rail contract maintenance contractor to supply its own facilities, we cannot accept WTU's proposal as feasible.

WTU includes 18.12 miles of yard track at two locations: an 8.23-mile yard at Guernsey, WY, and a 9.89-mile yard at Denver. However, WTU does not explain the purpose of these yards.

BN includes a 26.1-mile yard at Guernsey comparable to its current yard in Alliance, NE. This yard would be the primary staging area for operations into the PRB and would include WTRR's primary locomotive- and car-maintenance facilities, a main-line fueling facility and related tracks, locomotive ready and storage tracks, loaded and empty car staging tracks and store house, yard office, and work equipment buildings. In addition, BN includes a 3.03-mile yard at Amarillo for a main-line fueling facility.

WTU argues that BN's yard-track mileage is overstated and that, unlike BN, the WTRR would not need a major yard because WTRR's traffic would be more homogeneous than BN's. We find that WTU's figures are understated because they do not provide for equipment maintenance or fueling. On the other hand, BN adequately explained the purpose and function of the proposed yards at Guernsey and Amarillo and included sufficient track mileage to carry out necessary equipment maintenance and fueling operations. Therefore, we accept BN's evidence on the size of the Guernsey yard. Also, we are accepting BN's 3.03 track-mile fueling facility at Amarillo because WTU did not include any costs for its proposed mobile-fueling operation at this location.

b. *Staging track.* BN includes in its WTRR operating plan four 8,000-foot (6.06 miles) staging and crew calling tracks at Reno, WY to serve the PRB mines. WTU, however, assumes that the PRB mine loading operation could be conducted from the Guernsey Yard and that a single crew

[96] *See infra,* discussion of turnouts, Appendix D, Section 7 b.

would take an empty train from Guernsey to a point halfway through the loading process. A second crew then would finish the loading and return the loaded train to Guernsey.

While acknowledging that train schedules could be set in Guernsey[97] and mine openings anticipated to some extent from there, BN asserts that the flexibility of a staging yard within the PRB itself would be necessary. BN selected Reno for its proximity to the mines.[98] This would permit WTRR to stage trains for entry into the mines and deal with unexpected delays and last-minute schedule changes at the mines without changing crews. BN also includes one 7,500-foot (1.42 miles) staging track at Rochelle/North Antelope, WY, to service mines located south of Reno. Without this separate staging track, WTRR would have to run empty trains through the Reno Yard and then back to the Rochelle/North Antelope mines.

We conclude that WTRR would need to have a train staging area within the PRB. Many PRB mines are served by more than one railroad. Accordingly, ingress to, and egress from, the mines must be coordinated among various railroads, and rarely can an empty unit train be assured of an immediate spot in the loading queue.

Even if there were no significant staging delays, the evidence shows that it would not be feasible for two crews to handle the entire loading operation out of Guernsey. As BN points out, it would be impractical to have a second crew relieve the first in the middle of the loading process. Crew changes during loading operations potentially would create unacceptable interference with the loading functions and serious safety problems, given the configuration of many of the looptracks.[99]

WTU has not addressed the issue of staging from within the PRB and accordingly suggests no alternatives to the Reno and Rochelle/North Antelope locations. In the absence of contrary evidence, we accept BN's inclusion of the additional 7.5 miles of staging tracks as necessary for feasible operations.

c. *Interchange tracks.* BN includes two interchange tracks of 7,500 feet each at every interchange point (Denver, Pueblo, Amarillo, Fort Worth, and Northport), for a total of 14.2 miles. BN alleges that one track would be needed to place the loaded trains and the other to stage the empty returning cars. WTU does not include any interchange tracks. It assumes that the connecting carriers' existing yards at these locations would be used to interchange traffic.

Both parties' operating plans assume that all unit train traffic would run through these interchange points without changing locomotives. Run-through operations of this type normally do not require staging tracks for loaded and empty trains, because the trains do not stop for extended time periods and the cars and locomotives remain together throughout the movement. Because the need for interchange operations at these locations is not supported on the record, we do not include any interchange tracks for staging purposes.

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[97] BN would use the Guernsey yard for pre-staging into the PRB.

[98] The mine origins that would supply the majority of WTRR's tonnage are all located within approximately 55 miles of each other. Guernsey, by contrast, is located 160 miles from the PRB.

[99] For example, at Black Thunder Jct., access to the head of the inside loop train is impossible when it is 50% or more loaded because it is surrounded by other trains.

d. *Bad order set-out track.* WTU includes 7.03 miles of bad order set-out track, based on placing bad order car detectors and tracks every 40 miles along the WTRR system.[100]

BN asserts that this arrangement would not be workable for detecting and setting out failed equipment, because it would require a train to travel up to 40 miles before the defective equipment could be set out. BN states that sound engineering practices and common usage requires spacing detectors every 20-25 miles. Based on a 20- to 25-mile interval, BN includes a total of 11.5 miles of bad order set-out track.

WTU asserts that 40-mile intervals would be adequate because WTRR's traffic would only carry coal cars and those cars would be in a preventive fleet maintenance program. WTU alleges that the practice of locating detectors and set-out track every 20-25 miles is based on traffic that includes free-running cars of different types and ownership. Because these cars may not receive maintenance between failures, railroads moving a mixture of car types may need to place detectors at a closer spacing. In contrast, WTU contends it would be inefficient and unnecessary to employ this more frequent spacing for a railroad that would carry coal unit trains exclusively.[101]

We agree that unit-train coal cars placed in a preventive fleet maintenance program should be better maintained and less likely to become inoperative than mixtures of car types. Because there is no specific engineering requirement with respect to the spacing of detectors along the track, we accept WTU's bad order set out track mile figure.

e. *Helper locomotive track.* WTU includes approximately 0.379 miles of helper locomotive tracks at Whitetail, WY (between Donkey Creek and Cordero) and at Palmer Lake, CO (between South Denver and Pueblo) consisting of a 500-foot track at each end of the locomotive helper districts (0.189 miles at each location).

BN includes an additional 0.189 miles for helper service at Logan Hill, WY, for a total of 0.567 miles of helper track. BN states that Logan Hill has a 1% grade with S-curves and that this results in a high risk of mechanical failure and stalling. Although not all of BN's trains moving over Logan Hill currently require helper service, BN alleges that it is necessary to have a helper consist available at all times. If a train experiences mechanical failure and no helper service is available, BN states the main line could be blocked for hours. BN asserts that all WTRR trains would need helper service because they would be heavier and longer than the trains BN actually moves over Logan Hill.

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[100] Bad order detector equipment is installed on railroads to alert the train crews to defective and/or dragging equipment that could cause the train to derail or damage the track, bridges, or tunnels.

[101] WTU states that the car fleet moving over the WTRR would consist of mostly new hopper cars equipped with roller bearing axles. It maintains that these cars are less prone to failure than older style journal bearing axles. BN's traffic experience reflects a greater mix of journal bearing-equipped cars, which are still in service in its older, more diverse fleet. Further, review of several of the contracts in this proceeding reveals that BN has given rate concessions to shippers who have introduced aluminum cars into their fleets. Thus, it appears that the WTRR traffic group would utilize a more modern fleet for shipper-supplied cars.

WTU counters that the new SD70 locomotives would be fully capable of negotiating the Logan Hill grade without helper service.[102] WTU submitted an article (WTU Opening, Gillette work papers at 000269-72) detailing BN's test of three SD70s pulling a 15,600-ton train from the PRB to Texas. At one point during the test, the train topped a 1.38% grade north of Fort Worth, without slipping, at the same speed that five SD40s would have attained.[103]

WTRR's heaviest unit trains would be 15,800 tons, or only 1.49 cars more than in the BN test. We are not convinced of the need for helper service for 1 or 2 more cars on a train moving over the 1% grade at Logan Hill pulled by 3 SD70s when a train of the same approximate size pulled by the same locomotive consist can successfully traverse a 1.38% grade. Therefore, we do not include any additional helper track at Logan Hill.

[102] BN concedes that the new SD70 locomotives that would be employed by WTRR are substantially more powerful than the SD40s normally used by BN in unit-train service over Logan Hill.

[103] Gus Welty, The Great A.C. Locomotive Race, *Railway Age*, June 1994.

## APPENDIX B

## OPERATING EXPENSES

The following table shows the WTRR operating expenses calculated by each party, and the amounts that we use in our calculation.[104] Each category of expenses is then discussed.

TABLE B-1

WTRR OPERATING EXPENSES
($000)[105]

| ITEM | WTU | BN | STB |
|---|---|---|---|
| 1. Train & Engine Personnel | $11,296 | $ 29,444 | $28,583 |
| 2. Locomotives | | | |
| a. Lease | 10,864 | 20,851 | 18,358 |
| b. Maintenance | 6,150 | 10,112 | 10,048 |
| c. Operating | 28,653 | 31,873 | 31,755 |
| 3. WTU Cars | | | |
| a. Lease | 1,021 | 2,658 | 1,467 |
| b. Maintenance | 1,295 | 1,227 | 1,227 |
| 4. All Cars--Inspection and Repair | 952 | 1,885 | 1,575 |
| 5. Non-Train Operating Personnel | 777 | 3,653 | 3,653 |
| 6. Materials & Supplies | 208 | 262 | 243 |
| 7. Ad Valorem Tax | 3,463 | 3,482 | 3,482 |
| 8. General & Admin. | 1,099 | 3,704 | 3,404 |

[104] All operating service units and costs have been restated to reflect our restated traffic group tonnages.

[105] Most operating expenses are denominated in 1994 dollars but some are in 1995 dollars. We correct for these differences in the DCF calculation.

| ITEM | WTU | BN | STB |
|---|---|---|---|
| 9. Amarillo Switch | 1,244 | 1,217 | 1,183 |
| 10. Joint Facility | 355 | 342 | 330 |
| 11. Insurance | 2,248 | 7,021 | 6,727 |
| 12. Loss & Damage | 0 | 46 | 46 |
| MOW (Appendix C) | 7,524 | 30,384 | 30,146 |
| TOTAL, WTRR-OWNED CARS | $77,149 | $148,161 | $142,227 |

1. *Train & Engine Personnel.* The parties' estimates of train crew requirements and costs are tied directly to their respective operating plans. Because we reject WTU's operating plan in favor of BN's, we generally accept BN's train crew personnel requirements.[106] WTU has not provided any evidence to support its proposed wage levels for any of WTRR's employees. Because BN's train crew costs for WTRR are based on known compensation levels,[107] these costs are used as the best evidence of record. This method for developing train crew costs was previously accepted in the *Coal Trading* and *Nevada Power* decisions.

2. *Locomotive Costs.*

a. *Locomotive requirement.* Both parties assume that WTRR's locomotive fleet would include primarily SD70s with some helper SD40s. Because we use BN's operating plan, we use BN's locomotive requirements.[108] However, as discussed below, we restate BN's locomotive requirements to reflect a 10% spare margin markup for locomotives undergoing repairs.[109] With this adjustment, the WTRR locomotive fleet would consist of 118 SD70s and seven SD40s in 1995.

BN argues that a 25% spare margin is needed to cover loading delays at PRB mines, idle time when locomotives are available but there is no train, peak period demands, and major and minor locomotive repairs. However, the cycle time already includes time to cover delays for loading at PRB mines and idle time, and to include it in the form of a spare margin markup would create a double count. Further, increasing the spare margin for idle time is inappropriate. If locomotives are idle, they are ready for service and no spares are needed. Finally, BN's argument relative to peak-period demands is not convincing. The evidence shows that traffic volumes for the WTRR

[106] Because we reject BN's inclusion of helper service at Logan (*see* discussion *supra* Appendix A), we exclude the nine crewmen BN included for this service.

[107] BN developed annual wage rates from its 1994 Wage Report Form A and B.

[108] As noted above, we exclude the SD40 locomotive helper assigned to Logan. Appendix A, Section 3(c).

[109] Spare margin consists of the additional engines needed in reserve to provide service when other locomotives are unavailable.

traffic group did not vary significantly from the 1st Quarter 1994 through the 4th Quarter 1994 (quarterly traffic ranged from 24 to 28% of the annual total).[110]

Because the cycle time we use does not appear to include time for locomotive repairs, some allowance for spare margin is needed. However, as discussed in the body of this decision, WTU's proposed 8% spare margin is unsupported. Absent better evidence, we use the 10% spare margin allowance used in prior cases and reflected in the variable cost evidence of this case. *See* Appendix F Section 12 c.

b. *Locomotive ownership costs.* The parties assume that locomotives would be acquired through an operating lease. WTU includes an annual lease cost of $138,568 and $55,427 for the SD70s and SD40s, respectively, allegedly based on BN's actual lease rental rates. BN includes an average annual lease cost of $151,785 per SD70 and $63,941 per SD40, based on its 1995 average annual operating lease cost.

While both parties state that lease costs are based on locomotive rental rates paid by BN, WTU's lease cost is actually based on a rail car (as opposed to locomotive) rental factor.[111] This is clearly inappropriate. BN's locomotive operating lease costs, based on average 1995 locomotive lease costs, represent the better evidence of locomotive ownership costs.

c. *Locomotive maintenance expense.* WTU includes a $75,000 annual maintenance cost for each locomotive plus $125,000 per locomotive for major overhauls every 5 years starting in 1999.[112] WTU, however, provides no evidence to support its maintenance cost estimate. WTU alleges that its full-service maintenance contractor will provide all labor, locomotive repair tracks, and buildings.

BN submits a full-service maintenance contract quote from the General Motors Corporation, Electro-Motive Division (EMD) in support of its maintenance-cost estimate of approximately $71,000 annually for each SD70. It adopts WTU's $75,000 for the SD40 units because comparable agreements were not available. A review of its electronic spreadsheets reveals that it includes $300,000 per locomotive for a major overhaul every 7 years starting in 2001, although it does not discuss this item.

BN claims that WTU's maintenance cost does not include the cost for locomotive repair facilities, and that these costs are not included elsewhere in WTU's SAC. BN states that in developing maintenance cost for the SD70s, it requested an EMD quote for both a full-service maintenance contract and a technical- and material-support contract. Under either agreement, the WTRR would have to provide the locomotive repair tracks and facilities. Thus, it includes costs for locomotive repair tracks and buildings in its investment base.

Absent a maintenance contract from WTU or any other evidence that its locomotive maintenance agreement includes all the necessary maintenance facilities, we will rely on BN's evidence.

d. *Locomotive fuel and servicing expense.* WTU developed annual locomotive fuel cost using BN's system average consumption rate of 2.58 gallons per locomotive unit mile ("LUM"), and system average price per gallon for fuel of $0.6288 as reported in BN's 1993 Annual Report

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[110] BN Reply, Behn V.S. Exh. SCB-7.

[111] *See,* WTU Reply, electronic spreadsheet GAG_FIN.WK3, location O:D45.

[112] WTU's maintenance cost does not distinguish between SD70 and SD40 locomotives.

Form R-1 ("R-1"), indexed to 1995. BN states that use of a system average consumption rate is inappropriate because it applies to all types of locomotives and not just to SD70 locomotives.[113]

BN estimated the annual fuel cost for WTRR based on a consumption rate of 3.27 gallons per LUM and its 1994 average cost of $0.59830 per gallon indexed to 1995. BN developed its consumption rate using its Train Performance Model (TPM) simulating the WTRR service for a three-SD70-locomotive, 118-coal-car consist operating loaded and empty between the PRB and Fort Worth.[114] (Both parties use BN's system average servicing cost of $0.147 per LUM.)

BN notes that, while use of the SD70 locomotives would reduce overall fuel costs, this reduction is largely a function of a reduction in the number of locomotive units per train (3 vs. 5), not a reduction in the fuel consumption rate per locomotive. It claims that experience to date suggests that the SD70s consume more fuel per LUM.[115]

Because BN's TPM estimate is based on operating conditions and locomotive and car consists that mirror the WTRR, we believe that BN's TPM produces the most reliable estimate of the locomotive consumption rate for the WTRR. We also accept BN's cost per gallon figure because it is based on more current data.

3. *Freight Car Costs--WTU.* Normally, the cost of freight cars required to support the traffic handled and associated ownership and maintenance costs are a significant component of SAC. In this case, however, all the utilities in the WTRR traffic group, other than WTU, currently provide their own freight cars. Therefore, WTRR would provide cars only for WTU movements.[116]

a. *Freight car requirement.* Freight car requirements are determined by the annual tonnage shipped to Oklaunion and the operating plan (primarily the cycle time, tons per car, and cars per train). The parties agree on WTU's traffic tonnage, and we use BN's operating plan for cycle time and train size. Therefore, we accept BN's freight car requirement of 452 cars. We accept the parties' estimate of a 10% spare margin to account for car repair down time.

b. *Freight car ownership cost.* Both parties develop annual freight car ownership cost based on the use of new aluminum gondola coal cars. However, the parties use different costs per car.

WTU relies on BN's 1993 Lease Contract No. 33767B (reproduced at WTU Reply, Gillette workpaper WP 000274). Witness Gillette indexed the 1993 contract cost of $44,000 to a 1995 value of $46,196, based on the percentage increase in cost for all gondola cars (steel and aluminum) between 1994 and 1995. Using the contract's 1995 annual railcar lease rental factor of 6.93% for new aluminum gondola coal cars, he calculated a freight car ownership cost of $3,202 per car, or $1,021,285 for 319 cars.

BN submits an annual ownership cost estimate of $2,658,212 for 452 cars ($5,881 per car). In support, it submits a list of five 1995 BN leases (BN Reply, Klick/Kent workpaper KKA000117), showing annual leasing cost per car ranging from a low of $3,202 used by WTU (Contract No. 33767B) to a high of $5,881. BN's $5,881 lease cost per car is not supported by a reference to a specific contract, as were the four other less expensive 1995 leases. In place of a contract reference, BN only shows the word "rent." Failure to provide an actual contract number

[113] BN's system average gallons per LUM is based on all types of locomotives operating under various conditions including yard and industry switching and main line movements.

[114] The TPM is a computer model used to estimate locomotive fuel consumption.

[115] WTU does not contest that SD70s have a higher than average consumption rate.

[116] We have excluded freight car ownership and maintenance costs for shipper-owned cars in our restatement of SAC.

makes this lease cost somewhat less credible. In any event, the principle of CMP/SAC requires the parties to develop the least cost stand-alone railroad. Because WTU's lease cost, based on an actual BN lease, has not been shown to be unrepresentative, we accept WTU's annual ownership cost per car of $3,202. This results in an annual freight car ownership cost of $1,466,516 for 458 cars.

c. *Freight car maintenance expense.* Both parties use an annual contract freight car maintenance cost of $0.0204 per car-mile. We use this cost in our restatement.

4. *Car Inspection & Repair Cost--All Cars.* In addition to the freight car maintenance expense for the WTU cars discussed above, all cars moving over the WTRR, regardless of ownership, would require periodic inspections for defects. Federal regulations require that safety appliance and air brake defects be corrected immediately by the railroad possessing the car at the time they are detected. Trains must be inspected at origin and interchange and, when not interlined, at least every 1,000 miles. The WTRR would need carmen to perform these inspections, correct safety appliance and air brake defects, and perform various minor repairs.

WTU states that six carmen would be required at Guernsey, WY, two at Pueblo, and two at Amarillo, for a total of 10 carmen.[117] However, its witness Gillette includes costs for 18 carmen.[118] The carmen located at Pueblo and Amarillo, in addition to providing normal 1,000-mile inspections, would also inspect the cars on interlined trains. WTU does not provide carmen at the other WTRR interchange points of Denver, Northport, and Fort Worth, apparently relying on trainmen to perform inspection and repair duties at these points. However, WTU admits that, while trainmen can perform inspections at outlying interchanges, carmen are needed to correct safety appliance and air defects and to give cars a thorough inspection where trainmen do not have time.[119]

BN assigns three carmen per shift (assuming three shifts per 24 hours) to Guernsey and Amarillo to perform the required 1,000-mile inspection, and three carmen each at the Denver, Pueblo, Northport, and Fort Worth interchange locations.

We reject WTU's car inspection and repair cost evidence because it is inconsistent and fails to include sufficient carmen to provide the necessary car inspections and repair service at all interchange points on the WTRR. BN's estimate of the number and placement of carmen necessary to perform inspections and minor repair service at all necessary locations on the WTRR, including the interchange points, is reasonable. In addition, we accept BN's cost for these personnel because it is developed on the same basis as the train crew personnel cost that we accept.

5. *Non-Train Operating Personnel.* The parties' estimates for non-train operating personnel (12 by WTU, 56 by BN)[120] are based on their respective operating plans. Because we accept BN's operating plan, we accept its estimates for non-train operating personnel. BN's non-train operating personnel costs are developed on the same basis as train crew personnel discussed above.

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[117] WTU Opening, Gillette V.S. at 12.

[118] *Id.*, Exh. GAG-14.

[119] *Id.*, at 11.

[120] Operating managers and/or non-train operating personnel consist of general managers-operations, superintendent-operations, trainmaster, road foremen, yardmasters, utility clerks, chief dispatcher, dispatchers, and secretaries.

6. *Materials & Supplies--Operating.* The parties' estimates for materials and supplies required to support the functions of the non-train operating personnel are based on their personnel estimates.[121] WTU includes building rental expense, whereas BN assumes that the WTRR would own the buildings used by these personnel.[122] Because we accept BN's non-train operating personnel evidence, we also accept its estimate of materials and supplies necessary to support those personnel. The record is insufficient to support restatement of building rental expense to the level required by a staff of 56 employees. Accordingly, we reject WTU's proposed lease of buildings.

7. *Ad Valorem Taxes.* The parties estimate ad valorem tax expense by multiplying the WTRR route miles by $2,500 per mile. Because we accept BN's route miles, we use its estimate for ad valorem tax expense.

8. *General & Administrative Expense.* General and administrative expense (G&A) includes costs for administrative personnel and related materials, supplies, and services.[123] WTU and BN include $1,098,953 and $3,704,128, respectively, for G&A. The parties differ mainly in the number of personnel and compensation levels, and to a lesser extent in contract services[124] and computer systems.[125] Again, WTU includes building rental expense, whereas BN assumes that the WTRR would own the buildings used by these personnel. *See supra*, Section 6, discussion.

WTU estimates that the WTRR could operate with 11 administrative personnel, consisting of a president, comptroller, property accountant and eight secretarial/clerical personnel, paid a total of $615,000 per year. BN includes $2,881,535 for a staff of 38 administrative personnel, including a president, controller/vice president administration, and accounting specialists.[126]

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[121] Materials and supplies include furniture, copiers, utilities, office supplies, operating personnel safety equipment, end of train devices, and radios.

[122] Accordingly, BN includes buildings in its construction estimate. *See infra,* Appendix D, Section 11.

[123] *E.g.*, office rental furniture, copiers, office supplies, automobiles, computer systems, phone systems, and contracted legal and accounting services.

[124] BN includes $300,000 for contract service relative to legal and accounting services. We have excluded this cost because BN also includes personnel to perform these services.

[125] WTU and BN include an annual cost for a computer system of $11,976 and $200,000, respectively. WTU does not explain specific functions it expects its $11,976 computer system to support and does not provide any support for its estimate. BN projects that its system would perform accounting, car management, car tracking and other computer applications that a normal railroad the size of the WTRR would require. We are not convinced that a railroad the size of the WTRR could operate with an $11,976 computer system. We believe, as detailed by BN, that a large class I railroad the size of the WTRR would require an extensive computer system to support its administrative functions. Therefore, we accept BN's $200,000 estimate for a computer system.

[126]

| Position | Number |
|---|---|
| President | 1 |
| Controller/VP Administration | 1 |
| Accounting Specialists | 10 |
| General Counsel | 1 |

(continued...)

WTU has not provided support for its estimate of administrative personnel and associated costs, and we are not convinced that three people--a president, controller and property accountant--could manage a railroad the size of the WTRR with only the help of eight secretarial/clerical personnel. Although the WTRR would handle only coal, it would nevertheless be a major railroad with complex and wide-ranging operations. Large amounts of operating and financial data would need to be organized and maintained and numerous other administrative functions would need to be handled. Therefore, we reject WTU's estimate of administrative personnel.

BN's estimate of 38 people appears to provide sufficient administrative personnel to carry out all the functions normally expected of a large railroad. In the absence of any evidence that BN's estimate of administrative personnel is not representative of the staffing requirements for a railroad the size of the WTRR, we accept it as reasonable. In addition, we accept BN's personnel cost, which is developed on the same basis as train crew personnel cost accepted herein. Finally, we reject WTU's proposed lease of buildings, because we cannot restate building rental expense to the level required by a staff of 38 employees.

9. *TUCO-Santa Fe Amarillo Switch and Joint Facility Charge.* The TUCO-Santa Fe Amarillo switch charge is paid by BN to Santa Fe for switching cars into the Harrington Plant. The joint facility charge is the cost BN pays for operating over 23.5 miles of track owned by UP. The parties assume the same type of operation for the WTRR. Thus, WTRR's costs would be based on the number of cars handled at these locations. Because we have restated base-year tonnage, our restatement of this cost item differs slightly from the estimates of the parties.

10. *Insurance Expense.* WTU's estimate for insurance expense is based on insurance coverage quotes for two short-line railroads, the Idaho Northern & Pacific Railroad and Nebraska Central Railroad Company. We cannot accept an insurance estimate based on short-line railroad experience. There is no evidence to suggest that these short-line railroads perform similar operations to those that would be performed by the WTRR.

On the other hand, BN's estimate of insurance is based on the ratio of insurance expenses to total expenses (less depreciation) from its 1994 R-1. This ratio (4.96%) is applied to the total WTRR operating expenses to calculate the annual WTRR insurance expense.

We accept BN's ratio because it is based on the operations of a major railroad, and we apply it to our restated operating expenses.

11. *Loss & Damage Expense.* WTU includes its loss and damage freight expense (L&D) in its estimate for insurance expense, and we are unable to disaggregate this data. Thus, BN's estimate of $0.001 per ton is the only estimate of L&D. We use it in our restatement.

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(...continued)

| | |
|---|---|
| Marketing/Fields Sales | 2 |
| Personnel | 2 |
| Safety Director | 1 |
| Director-Data Processing | 1 |
| Data-Processing Specialists | 12 |
| Secretaries | 7 |
| TOTAL | 38 |

## APPENDIX C

## MAINTENANCE-OF-WAY

In order to provide efficient service, a railroad must continually maintain its facilities and plan for the replacement of assets as their useful lives expire. Preventive maintenance and emergency repairs are termed "operating maintenance" and are expensed in the year they are incurred.[127] The planned replacement of assets at the end of their useful lives is termed "program maintenance," and the costs incurred are considered an investment. Funds to replace assets are included as a future investment cost in the DCF model. Parties treat the WTRR as a new railroad and separately calculate operating maintenance and program maintenance for each maintenance category. The summation of operating and program maintenance equals the total normalized maintenance estimate for the WTRR.[128]

The parties differ substantially in their estimates of the normalized maintenance costs that would be required by the WTRR. BN's estimate is $88.6 million per year. In contrast, WTU claims that the WTRR system could be maintained at a cost of $45.3 million per year,[129] based on BN's 1994 system-wide maintenance experience.

BN objects to the use of system-average figures, because they do not take into account the relative densities, axle loads, and speed of the WTRR system. BN points out that WTRR would be designed with an average traffic density approximately 65% higher than BN's system average density per track-mile.

Because WTRR's average traffic density per mile would be significantly higher than BN's overall system average density, we agree that use of BN's actual system-wide costs would be inappropriate. We base our analysis on BN's normalized maintenance estimate of $88.6 million as the best evidence of record.

WTU allocates a greater portion of the normalized maintenance expenses to program maintenance than does BN. WTU contends that the replacement of track assets, such as rail, ties, other track material, and ballast, is program maintenance. Assertedly, the only items of track maintenance which should be classified as operating maintenance are: inspection, testing, and spot adjustments to line gauge and surface; labor required to repair broken material; and actions taken to maximize the life of materials. WTU further states that operating maintenance on non-track road

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[127] Operating maintenance is sometimes referred to as "spot maintenance," although that term properly refers only to keeping track assets in operating condition. *See, Nevada Power* I, 6 I.C.C.2d at 60 n.17.

[128] Programmed and operating maintenance costs for each investment category are calculated independently, then added together to arrive at a total normalized maintenance cost.

[129] *See,* WTU reply, Johnson V.S. at 2. The witness's prior estimate (in WTU opening, Johnson V.S. at 1) was revised based on BN's reply and changes in the calculation of WTRR construction costs.

property is minimal. It cites prior SAC decisions using spot maintenance percentages of 15%,[130] 12.5%,[131] and 12.2%,[132] respectively.[133]

Under the prescribed Uniform System of Accounts (USOA) for railroad companies, 49 CFR Part 1201, program replacement of track components is allocated to capital accounts. However, replacement of less than a complete unit of property and track repairs is to be accounted for as an operating expense,[134] and replacement of road property other than track may be treated as operating maintenance if the acquisition cost is less than $5,000.[135] WTU's allocations are inconsistent with these standards. Moreover, the spot maintenance ratios from prior proceedings cannot be applied to non-track accounts. *See, Nevada Power I*, 6 I.C.C.2d at 60 n.17.

Because BN has more closely adhered to the USOA instructions for separating operating and program maintenance expense, we accept its allocations. In the following table, we summarize and restate the parties' normalized maintenance estimates, and we allocate operating maintenance based on BN's line-item allocations

TABLE C-1

WTRR OPERATING MAINTENANCE EXPENSE
($000)

| DESCRIPTION | BN NORMALIZED | WTU NORMALIZED | STB NORMALIZED | STB OPERATING |
|---|---|---|---|---|
| 1. PERSONNEL | | | | |
| Gen'l Office | 3,941 | 1,391 | 3,941 | 1,624 |
| Track | 18,862 | 7,655 | 18,824 | 8,088 |
| Bridge & Building | 2,025 | 1,651 | 1,955 | 1,900 |
| Signals & Communication | 6,544 | 2,678 | 6,544 | 6,219 |
| Electrical | 696 | 0 | 696 | 676 |
| Purchases & Stores | 1,409 | 515 | 1,409 | 1,057 |
| 2. CONTRACT WORK | 3,513 | 2,626 | 3,512 | 3,137 |
| 3. MATERIALS | | | | |

[130] *Westmoreland Coal Sales Co. v. Denver R.G.W. R. Co.*, 5 I.C.C.2d 1067, 1110 (1988).

[131] *Coal Trading Corp. v. Baltimore & O.R.R.*, No. 38301S (ICC served October 28, 1988), slip op. at 53.

[132] *The Dayton Power and Light Co. v. Louisville & N.R.R.*, No. 38025S (ICC), computer workpapers supporting the "Constrained Market Pricing Analysis" prepared by the Office of Economics.

[133] WTU Reply, Johnson V.S. at 17.

[134] 49 CFR Part 1201, Subpart A, USOA, Instructions 2-9 and 2-10, respectively.

[135] *Id.*, Instruction 2-2.

| DESCRIPTION | BN NORMALIZED | WTU NORMALIZED | STB NORMALIZED | STB OPERATING |
|---|---|---|---|---|
| Bridge & Building | 4,310 | 1,984 | 4,310 | 0 |
| Signals & Communication | 5,048 | 3,696 | 4,985 | 0 |
| Track | 28,750 | 21,525 | 22,553 | 0 |
| 4. EQUIPMENT | | | | |
| MOW-Program | 5,560 | 1,403 | 5,534 | 0 |
| Work Train Service | 443 | 155 | 439 | 0 |
| Stores | 123 | 53 | 123 | 92 |
| MOW-Operating | 7,351 | 0 | 7,351 | 7,351 |
| TOTAL | 88,576 | 45,334 | 82,178 | 30,146 |

Our analysis of normalized maintenance by line-item follows.

1. *Personnel.* WTU bases its salary and compensation rates on non-union labor scales. It projects a less costly salary structure and fringe benefit package than BN, but it provides no basis for the estimate, no factual discussion on how these costs were derived, and no workpapers. Staffing levels are based on Witness Johnson's experience.

BN argues that WTU understates salaries, fringe benefits, and maintenance staffing levels. BN offers its own estimate of the staffing levels needed to maintain a railroad of WTRR's size. BN's estimated staffing levels are based on federal regulations regarding hours of service, the 40-hour work week, and overtime.

Because WTU's salary structure, including fringe benefits, is not documented, we accept (with minor adjustments)[136] BN's personnel costs, which are based on the salaries actually paid to rail employees and staffing levels consistent with current railroad industry practice.

2. *Contract Work.* BN's estimate of track geometry testing costs assumes that all main-line track would be tested twice a year and secondary routes once a year. WTU basically accepts BN's cost, but would reduce the testing frequency by limiting semiannual testing to lines carrying 20 million gross tons per mile or greater. Because WTU has failed to support a lower testing level or to show that it is used elsewhere, we will accept BN's track geometry testing estimate based on actual railroad practice.

The parties' estimates of other contract costs are very similar. WTU generally accepts BN's contract work expense items but adjusts them to reflect its calculation of WTRR's track miles. Because we use BN's total track miles, we accept BN's estimates.

[136] BN incorrectly included a scale inspector. WTRR would have no need for a scale because all coal trains would be weighed at their origin point.

3. *Materials.* According to WTU, BN overstates track material costs by (1) specifying premium rail; (2) overstating material quantities and unit costs; and (3) making unsupported adjustments to WTRR's asset lives. In response, BN claims that the premium rail would be needed on curves to extend rail life and reduce maintenance, that its material quantities and cost projections are supported, and that the asset lives for curved rail, road and highway grade crossings, and other items were adjusted appropriately to reflect actual BN experience.

In Appendix D, *infra,* we accept as reasonable BN's use of premium rail on curves and WTU's unit costs for materials.[137] Also, we accept the rail life agreed to by both parties. Other asset lives projected by BN are based on its actual experience, whereas those presented by WTU are unsupported. Because BN's lives are documented and WTU's are not, we accept BN's evidence as the best evidence of record.

WTU also contends that BN overstates WTRR's material cost for culverts, tunnels, and bridges, and includes unneeded facilities, such as bridge walkways and buildings. BN, on the other hand, increases WTU's estimate to reflect the proper linear feet of bridge span and omitted facilities.

We accept BN's data. WTU included bridge walkways and accepted most of BN's culvert, tunnel, and bridge counts in calculating investment costs. Thus, its challenge of these figures under maintenance costs is contradictory. Furthermore, we reject WTU's various proposals for leased or contractor-owned buildings. *See supra,* Appendix B, Sections 2 c, 6, and 8. Accordingly, BN's maintenance costs for carrier-owned buildings are accepted.

WTU calculates annual signal and communication maintenance requirements by dividing the number of units on WTRR by their expected life. The number of anticipated units requiring replacement is then multiplied by their respective unit costs. BN calculated these expenses in the same manner. However, BN's resulting costs are higher because it used higher initial unit costs for signals and communication equipment and quantities. Because we accept BN's unit costs for this category of investment costs, we accept BN's cost figures here as the best evidence of record.

4. *Equipment.* WTU's and BN's equipment estimates are based on the service lives, material specifications, staffing levels, and operating (versus program) maintenance allocations discussed above. Because we use BN's figures on those issues, we use its estimated equipment requirement here.

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[137] We adjust track material maintenance expenses to reflect the material types accepted in Appendix D under track investment. For example, we accept WTU's use of No. 11 turnouts and BN's use of premium rail in curves exceeding 2 degrees.

APPENDIX D

CONSTRUCTION COSTS

The parties agree on many of the construction specifications for the WTRR. They agree that continuous welded rail would be used for all trackage except on open-deck bridges. New rail would be used on all main-line track and spurs to the power plants. Relay rail would be used in yards. Ties on the main line and passing sidings would meet the 7-inch graded tie specification in *Manual For Railway Engineering,* American Railway Engineering Association (1990) (AREA *Manual*), and 6-inch grade ties would be used in yard trackage and on set-out tracks.

Table D-1 summarizes the cost estimates associated with building the WTRR. Each category of investment is then discussed.

TABLE D-1

WTRR INVESTMENT COST
($000)[138]

| ITEM | WTU | BN | STB |
|---|---|---|---|
| 1. Engineering | $ 95,113 | $ 251,319 | $ 143,927 |
| 2. Land | 66,601 | 262,907 | 65,323 |
| 3. Grading | 256,455 | 516,087 | 332,209 |
| 4. Tunnels | 27,366 | 27,366 | 27,366 |
| 5. Bridges & Culverts | 168,333 | 172,011 | 172,012 |
| 6. Ties | 132,852 | 177,032 | 139,640 |
| 7. Rail & OTM | 297,641 | 310,942 | 292,600 |
| 8. Ballast | 175,221 | 229,734 | 188,392 |
| 9. Track Labor | 136,041 | 165,465 | 135,885 |
| 10. Fences & Signs | 28,344 | 28,386 | 28,386 |
| 11. Buildings | 82 | 24,527 | 24,526 |
| 12. Communications | 20,666 | 27,471 | 27,471 |
| 13. Signals | 112,600 | 113,195 | 111,469 |
| 14. Crossings | 3,167 | 141,010 | 3,167 |

[138] Some investment costs are denominated in 1994 dollars and others in 1995 dollars. The DCF analysis adjusts for these timing differences.

| ITEM | WTU | BN | STB |
|---|---|---|---|
| 15. Mobilization[139] | 0 | 66,853 | 47,437 |
| 16. Contingency | 86,697 | 225,140 | 167,449 |
| TOTAL | $1,617,565 | $2,739,446 | $1,907,258 |

1. *Engineering.* Engineering costs are the expenses associated with planning and preliminary design, final design, and construction management of the WTRR. Estimates for engineering costs are based on a percentage of the total construction costs.

WTU's engineering costs are based on the American Society of Civil Engineers' *Manual and Reports on Engineering Practice No. 45*, and the experience of its witness, Lynn E. Brown. WTU estimates that engineering costs would amount to 7% of WTRR's total investment plus an additional $7,500 per route-mile for aerial topographic mapping, land surveying, and geotechnical drilling and testing services.[140] No cost for Federal, state, or local permits are included because, according to WTU, such fees constitute a barrier to entry.

BN asserts that planning, engineering, and construction management costs are more appropriately estimated at 13% of total investment. In support, it submits evidence regarding several complex and difficult projects in urban areas such as airports and subways. Noting that a recent 1.2-mile railroad line built in 1990 required extensive permits from Federal, state, and two city agencies, BN argues that permits are necessary.

A breakdown of the estimates for engineering costs follows:

TABLE D-2

WTRR ENGINEERING COSTS
(percent of total construction cost)

| ITEM | WTU | BN | STB |
|---|---|---|---|
| Planning & Preliminary Design | 1% plus $7,500/mile | 2% | 1% plus $7,500/mile |
| Final Design | 4% | 6% | 4% |
| Construction Management | 2% | 5% | 4% |
| TOTAL | 7% plus $7,500/mile | 13% | 9% plus $7,500/mile |

We accept WTU's planning percentage because it is based on actual costs quoted by its engineering witness for other recent rail projects. BN's cost was not based on actual rail construction projects.

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139 Mobilization costs are included in WTU's individual investment line item costs.

140 WTU Opening, Brown V.S. at 28-30.

We also accept WTU's final design costs. BN did not show WTU's estimate to be inadequate. BN's higher costs are based on more complex (generally non-railroad) engineering problems than would be associated with construction of the WTRR.

We accept BN's evidence supporting its estimate of a construction management additive of 4%. WTU provides no factual support for its 2% estimate. BN's evidence is based on large construction projects, including the Northeast Corridor Rail Passenger Improvement Project (NCRPIP), a railroad construction project.[141] While urban mass transit systems, airports, and the Eurotunnel project bear little resemblance to the engineering of the WTRR, NCRPIP provides some insight into the engineering costs faced by a coal railroad with a limited number of design specifications in a predominately rural area. However, because the WTRR would not have to contend with the problems of rebuilding a railroad while continuing to operate, the NCRPIP construction management percentage overstates the engineering costs that would be associated with the WTRR. Consequently, we round the NCRPIP percentage down to 4%, thereby providing some adjustment for the less complex engineering design of the WTRR.

In summary, we accept 1% and $7,500 per mile for planning and preliminary work, 4% for final design and 4% for construction management.[142]

2. *Land.* Generally, WTU assumes that the WTRR would purchase the land needed to accommodate a railroad with a 100-foot right-of-way (ROW). In urban areas, however, WTU would have the WTRR purchase only enough land for a 75-foot ROW. WTU submits an estimated land value of $66,601,128. Its estimate relies on publicly available information, such as real estate listings and newspaper notices.

BN conducted a visual examination of each parcel of land that would be crossed by WTRR and made adjustments to reflect local factors that could affect the "across-the-fence" (ATF)[143] value of the land. BN's total ATF value for land is approximately $63 million. BN quadruples this value to reflect damage-related costs (costs related to the creation of small unusable parcels), and an assemblage factor (costs related to the increase in land values when contiguous parcels are purchased).

BN argues that WTU's estimate is flawed for four reasons: (1) WTU's Witness Brown lacks any real estate accreditation or experience; (2) WTU's estimate is based on listings and newspaper notices that contain only bid-and-asked prices and do not show actual sales prices; (3) WTU has not adjusted for unique factors affecting the value of individual parcels of land; and (4) WTU's estimate does not include additional costs above ATF value that WTRR would incur.

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[141] BN's 5% estimate is based on the following construction management percentage for the following construction projects:

| | |
|---|---|
| Eurotunnel | 4.70% |
| Singapore Mass Transit Project | 9.00% |
| NCRPIP | 4.29% |
| Chicago Southwest Transit Project | 5.90% |
| SF International Airport | 8.00% |

[142] We do not include costs for obtaining permits for construction, because they represent governmental entry barrier constraints.

[143] ATF value is the highest price that a piece of property will bring on the open market when the buyer and seller have full knowledge of all potential uses of the property.

BN has presented the more comprehensive estimate of the ATF value of land. BN inspected each parcel along the ROW. It considered actual sales rather than listing (offering price) information and made adjustments to reflect local conditions. Therefore, we accept BN's ATF land values.

However, we reject BN's quadrupling of the ATF value. Damage cost related to the partial taking of parcels of land and costs related to assemblage of contiguous parcels of land are barriers to entry. These costs were not incurred by the western railroads because they received land grants when they originally constructed these corridors and did not incur the cost associated with use of only portions of parcels. Further, as discussed in the body of this decision, with the exception of the Orin Line, the inclusion of an assemblage factor would violate the fundamental assumption of unimpeded entry and exit underlying the theory of contestability.[144]

In summary, we accept BN's ATF real estate value of $63,719,473[145] and its actual Orin Line acquisition costs. The resulting assembled value must be reduced to $65,322,673 to reflect the fact that the total system miles used by BN exceed those that we use.[146]

3. *Grading.* Grading costs are affected by the factors discussed below. Estimates on the cost of performing various jobs associated with grading are shown in Table D-3.

TABLE D-3

WTRR GRADING COSTS
($000)

| Category | WTU | BN | STB |
|---|---|---|---|
| a. Earthwork | $110,688 | $346,149 | $230,562 |
| b. Special ditch excavation | 1,558 | 2,085 | 1,558 |
| c. Relocation of utilities | 6,421 | 6,456 | 6,456 |
| d. Clearing and grubbing | 19,873 | 44,414 | 19,674[147] |
| e. Seeding | 4,543 | 4,543 | 4,543 |
| f. Lateral drainage and riprap | 3,540 | 3,540 | 3,540 |

[144] For BN's 1978 construction of the 85.2-mile Orin Line, which is included in the WTRR route system, BN paid both an assemblage factor and damage-related costs to obtain the necessary land. BN's data show that the total amount paid by BN to acquire the Orin Line ROW was 6.65 times the ATF values of the individual land parcels. For the purpose of determining costs for the WTRR, we accept BN's actual costs of $2,864,760 for the Orin Line real estate parcels.

[145] While WTU's 75-foot ROW in urban areas is reasonable, we are unable to properly reduce BN's ATF value to reflect that change. Based on a review of the route, however, the WTRR would not traverse a large portion of urban land. Consequently, our inability to factor a 75-foot urban ROW into BN's analysis should not result in a significant overstatement of real estate value.

[146] BN's real estate value was based on a 1,587.85-mile WTRR. We restate this total to 1,567.92 miles. *See,* Appendix A, Table A-1, *supra.*

[147] WTU's estimate less mobilization costs.

| Category | WTU | BN | STB |
|---|---|---|---|
| g. Geotextiles | 326 | 31,549 | 31,549 |
| h. Erosion control | 0 | 8,720 | 0 |
| i. Soil stabilization | 2,610 | 2,610 | 2,610 |
| j. Topsoil placement | 0 | 34,303 | 0 |
| k. Water for compaction | 0 | 17,267 | 17,267 |
| l. Road surfacing | 14,374 | 14,451 | 14,451 |
| TOTAL | 163,933 | 516,087 | 332,209 |

a. *Earthwork.* WTU estimates that earthmoving activities would cost $110,688,350; BN estimates $346,148,961. The discrepancy results principally from WTU's use of a 22-foot (rather than BN's 24-foot wide roadbed), and WTU's use of price quotes from independent contractors, rather than BN's reliance on a Colorado Department of Transportation (CODOT) cost for earthwork.

WTU asserts that a 20-pound per square inch (psi) bearing pressure can be attained with a 22-foot wide roadbed and would be sufficient for the WTRR tonnages and speeds.[148] Witness Brown further asserts that modern compaction equipment and careful attention to placement and moisture content of the materials would permit WTRR to achieve this goal. BN asserts that the 22-foot roadbed width would be insufficient to adequately support the ballast section. It uses a 24-foot cross-section for the WTRR, while noting that a 28-foot roadway is standard on its railroad.

WTU bases unit costs upon recent quotations from contractors regularly working on earthwork or from cost compilation services such as *Building Construction Cost Data* (1995) (*Means Handbook*) or the *National Construction Estimator*, 43rd Edition, by Martin D. Kiley. WTU maintains that BN's use of the CODOT earthwork prices overstates costs, because it is based mainly upon state projects in urban areas and restrictions and complexities not associated with construction of the WTRR.

WTU'S evidence does not demonstrate that a 22-foot wide roadbed could be used to carry the tonnage and permit the speeds assumed for the WTRR. No verifiable evidence was presented that this cross-section could achieve the 20-psi standard, or that a 22-foot cross-section is used by any railroad on main-line track. Because WTU has not provided reasonable supporting evidence for its assertion, we use BN's 24-foot roadbed width.

We accept WTU's unit costs for earthwork as reasonable, because they are based upon actual quotations obtained from the construction industry and recognized compilation services. While we do not question the estimates in the CODOT publication, WTU is entitled to choose the low-cost bidder for earthworks. Our restated earthwork costs combine BN's quantities with WTU's unit costs, resulting in a revised earthwork cost of $230,561,581.

b. *Special ditch excavation.* Special ditch excavation must be performed to maintain parallel drainage and protect the roadbed section in special areas. BN calculates quantities based upon the

[148] Witness Brown cites William W. Hay, *Railroad Engineering,* John Wiley & Sons, New York.

ICC "Engineering Reports,"[149] prorating the WTRR quantities for miles not covered. BN uses its earthwork excavation costs for this category.

WTU agrees to BN's quantities, but substitutes excavation quotes obtained directly from an outside vendor. WTU's unit-cost estimates are more recent than BN's and independently obtained. Because WTU has provided an adequately documented unit-cost estimate, which constitutes the lowest estimate, it will be used.

c. *Relocation of utilities.* The parties agree on the unit cost of relocating utilities along the WTRR route. Cost differences result from the use of different route miles. Because we accept BN's route mileage estimates, we use BN's costs for this category.

d. *Clearing and grubbing.* WTU submitted a cost quotation of $1,133 per acre from a contractor, based upon terrain similar to what would be faced by the WTRR in Colorado. Its estimate of clearing and grubbing cost is based on an assumption that no more than one-third of the acreage is forest.

BN bases its cost estimate of $3,567 per acre on values contained in the *Means Handbook.* BN assumes that one-half of the acreage is forested.

WTU's evidence is credible and will be accepted. WTU's actual cost quotation obtained from a local contractor is superior to BN's use of averages obtained from a handbook. Further, BN has failed to show that WTU's method for estimating acreage is flawed.[150]

e. *Seeding.* The parties agree on seeding cost.

f. *Lateral drainage and riprap.* The costs associated with these construction activities are not in dispute.

g. *Geotextiles.* WTU includes geotextiles under turnouts and grade crossings. It claims that it is unnecessary to place geotextiles under the entire rail line because, with proper construction and maintenance, a railroad can operate successfully without this additional cost.[151] Based on its current practice, BN includes geotextile fabric under the entire line.

WTU has not shown that geotextiles could be eliminated on most of the railroad. Indeed, WTU recognizes that geotextile fabric reduces maintenance costs, and it does not demonstrate that deleting the fabric would be cost effective. Because WTU failed to provide evidence on this issue, we accept the use of geotextiles under WTRR's entire ROW.

h. *Erosion control.* WTU claims that the current requirement to provide for erosion control represents a barrier to entry because it was not required when this corridor was initially created.

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[149] The Engineering Reports are compendia of data collected in the early part of the century by the ICC. They detail the material quantities required to build most rail lines in place at the time. The data continue to be useful as a baseline for current earthwork quantities, subject to adjustments for modern engineering specifications.

[150] WTU's estimate of the forested acreage is based on a review of the topography and relevant maps for the route that would be traversed by the WTRR.

[151] WTU agrees with BN that geotextiles are an effective soil stabilizer that prevent mud fouling of ballast and subballast.

BN claims erosion control is mandated by the Clean Water Act and is part of the overall costs in present-day construction projects where earthwork is involved. It includes costs for sediment pits,[152] ditch check bales,[153] and silt fences.[154]

Governmental regulation on erosion control is a relatively recent requirement and one that BN did not indicate that it incurred when its ROW was constructed. Thus, we agree that these costs are barriers to entry.

i. *Soil stabilization.* The parties agree on the costs for soil stabilization along the WTRR ROW.

j. *Topsoil placement.* BN includes costs of removing topsoil from the ROW, storing it until the end of construction, and replacing it after construction to facilitate vegetation growth and to restore the land to its original condition.

WTU claims these costs are excessive for two reasons. First, the only state with a legal requirement for topsoil placement is Wyoming. In most areas that would be traversed by the WTRR, the native fill is adequate for topsoil if it is adequately prepared. Second, WTU considers these costs to be barriers to entry and thus excludes all costs for this category.

We agree with WTU that these costs are barriers to entry. BN did not incur these regulatory costs during initial construction of its lines. Therefore, we exclude all topsoil placement costs.

k. *Water for compaction.* Based on its experience, BN claims that water would be necessary for compaction in arid and semi-arid areas. Because WTRR would be located in semi-arid country, BN includes costs for providing water for compaction. WTU does not include funds for providing water, and it has not responded to BN's claim that these costs are necessary.

We accept BN's unrebutted evidence that water would be needed for compaction. WTU has not shown that this cost could be avoided.

l. *Road surfacing.* The parties agree on the unit cost of road surfacing. Their cost difference results from the use of different route miles. Because we have accepted BN's route-mileage estimates, we necessarily use BN's costs for this category.

Based on the above discussion, we estimate that the WTRR would spend $332 million for grading.

4. *Tunnels.* The parties agree on tunnel construction costs.

5. *Bridges and Culverts.* WTU and BN agree on culvert costs. They also agree on the number of bridges, but differ slightly on the costs of these bridges. BN claims that WTU failed to include the cost for bridge walkways. While WTU maintains that it included costs for walkways, it does not indicate where in the workpapers such costs are located. Without sufficient indication that this cost is included by WTU, we accept BN's estimate.

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[152] Sediment pits are holding ponds for muddy water to allow sediment to separate out.

[153] Ditch check bales are temporary dams used to retard the movement of water in construction areas.

[154] Silt fences are barriers used to hold the subsurface soil in place.

6. *Ties*. The parties disagree on average tie spacing and on the cost of wooden ties. WTU uses a tie spacing of 21.25 inches; BN uses 20.5 inches. WTU bases its tie cost on recent quotations received from material dealers; BN does not specify the basis for its tie costs.

WTU offers no support for its use of a 21.25-inch tie spacing. It does not contend that any railroad uses such a spacing. Because WTRR is a high-density system, moving in excess of 45 million tons of coal annually, use of BN's suggested 20.5-inch spacing (which approximates the spacing on BN's high-density lines[155]) is more appropriate. We accept WTU's evidence on the cost of ties because it is documented.

7. *Rail & Other Track Materials*.

a. *Premium rail*. BN argues that the WTRR would need premium rail on curves greater than two degrees. It maintains that the increased cost associated with premium rail is more than offset by the decrease in maintenance costs on these sections of track. BN employs premium rail in this capacity on its system and claims this practice is standard throughout the industry.

WTU recognizes that use of premium rail on curves has become an industry standard. It maintains, however, that premium rail is not required by prevailing engineering standards and would not be needed by a railroad whose traffic is limited in scope and scale.

We disagree with WTU. While use of premium rail may not be required by prevailing engineering standards, the industry has adopted its use. The widespread use of premium rail indicates that it is cost-effective. WTRR is a high-density, heavy wheel-loading, coal-hauling railroad that would experience higher wear in curves than the normal general freight railroad. The successful operation of the WTRR as a least-cost stand-alone system would require that a balance be struck between initial construction costs and maintenance costs. The use of premium rail to reduce long-term maintenance costs seems only prudent given prevailing industry standards and the extraordinary stress on curves that result from the movement of unit-train coal traffic.

b. *Turnouts*. Because AREA *Manual*[156] allows speeds through No. 11 turnouts of up to 25 mph, WTU would use No. 11 turnouts for the main line of WTRR. BN asserts that use of No. 11 turnouts does not meet the engineering specification necessary for a high-density coal railroad. BN uses No. 20 turnouts on its main track where speeds through the turnout exceed 15 mph.

We are not persuaded that the WTRR would need No. 20 turnouts. BN has not shown that AREA specifications, sanctioning speeds of 25 mph, are erroneous. Furthermore, we use BN's evidence on cycle time that results in an average speed well below 25 mph.

c. *Passing sidings*. WTU would use relay rail on passing sidings, claiming that trains operate very well over passing sidings laid with secondhand rail. BN asserts that new rail should be used on sidings because the loading, stresses, and wear would be similar to those on main-line track.

It seems only reasonable to use new rail on the passing sidings. The WTRR would have passing sidings every 20 miles in order to avoid the necessity to double-track the stand-alone system. Thus, these sidings would be extensively used and, like the main line, should be constructed of new rail. Indeed, WTU did not show that the use of relay rail on extensively used passing sidings is consistent with accepted railroad operating practices.

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[155] BN's system has a standard tie spacing of 20.4 inches.

[156] Chapter 5 pages 5-3-12.

Our restated cost for this category is $293 million. Our restatement results in lower cost than the evidence of either party because of the selected mix of unit costs and quantities.

8. *Ballast.* WTU argues that the WTRR would need 8 inches of subballast and 10 inches of ballast, claiming that this specification meets the required subgrade bearing capacity of 20 psi.[157] It obtained its cost estimates for ballast material from local quarries.

BN argues that 12 inches of subballast and 8 inches of ballast are standard depths, based on its experience moving unit-trains of coal over high-density lines. BN does not indicate the origin of its unit costs.

WTU provides no evidence beyond the assertion by Witness Brown that its proposed ballast section would provide the required bearing capacity. Further, the record does not indicate that any railroad carrying WTRR's proposed tonnage uses WTU's ballast specifications. Thus, we are unable to conclude that WTU's proposal would be feasible. Consequently, BN's standard design specification for subballast and ballast depths used on its system is the best evidence of record.

Ballast and subballast unit costs for WTRR are based upon WTU's documented quotations from local quarries. BN does not indicate the source of its estimate. WTU's costs are documented and lower and, therefore, appropriate to use as an estimate of the cost WTRR would incur. Thus, our restatement of investment in ballast is based on WTU's unit cost per cubic yard of ballast or subballast, and BN's specification on the amount of ballast.

9. *Track Labor.* WTU estimates track-laying and track-surfacing labor costs based on previous bids and quotes for unit-train track made by Witness Brown. WTU supports its estimate with a quote from an independent contractor. BN bases its costs on estimates from its engineering department.

Because the WTRR is assumed to be an efficient, low-cost carrier, we use WTU's lower cost documented quote for track-laying and surfacing.

10. *Fences & Signs.* This category of costs is developed by multiplying unit costs by the route miles of the WTRR. WTU and BN agree on unit costs. The cost differences result from the use of different route miles. Because we have accepted BN's route-mileage estimates, we use BN's costs for this category.

11. *Buildings, Stations, and Maintenance Facilities.* WTU assumes that the WTRR would lease space for operations, MOW and other activities.[158] Locomotive, car and roadway equipment repairs would be performed by independent contractors at their own facilities. Further, WTU proposes that fueling, sanding, and locomotive servicing, normally performed at railroad facilities, would be done by mobile equipment, similar to that used by the construction and airline industries. In contrast to WTU's evidence, BN includes the cost to construct facilities for all maintenance, support and operations activities.

WTU's leasing costs for building space is rejected in our discussion of operating expenses. Further, while WTU suggests that certain services would be provided by mobile operations, its

[157] According to WTU, a subgrade bearing capacity of 20 psi has been recognized by the AREA as a strong subgrade, adequate for the purpose of supporting unit-train service.

[158] WTU would allot $82,000 for wayside storage buildings for MOW supplies.

evidence does not include any costs to support such operations. Consequently, BN's evidence on these cost items is the best evidence of record and is included in our restatement.

12. *Communications.* The parties agree on unit costs. BN claims, however, that WTU has ignored a number of items that are required for complete installation of the communications system, such as datalink equipment and radio towers. WTU claims that the "missing" items are included in its cost for signals. We find no support for this claim in WTU's workpapers; therefore we accept BN's communication cost.

13. *Signals.* WTU bases its costs for rail crossing warning devices on quotes from outside vendors. However, WTU estimates labor costs based on a multiple of 1 to 1.4 times the cost of materials, rather than using its vendor's quote of 3 times material cost. BN accepts the unit costs, but contends that WTU erred in reducing the labor cost quoted by the contractor.

We agree with BN that WTU is inconsistent in accepting its vendor's material cost but not its labor cost. Furthermore, WTU did not explain, or provide any reason, for reducing the labor costs. Our restatement uses the independent quote of 3 times material costs to estimate labor costs.

14. *Crossings.* WTU includes costs for public and private grade crossings, but excludes all costs for highway and railroad overpasses. WTU claims these costs are barriers to entry because overpasses were not necessary at the time BN's lines were originally constructed. WTU accepts the unit costs and quantities proposed by BN for public and private grade crossings.

BN includes costs for highway and railroad overpasses. BN claims that any railroad would incur these costs if constructed today and, therefore, these costs are not barriers to entry.

As discussed in the decision, we agree with WTU that highway and railroad overpasses should be considered barriers to entry, and these costs are excluded from our analysis. We accept the estimate for public and private crossings agreed to by the parties.

15. *Mobilization.* Mobilization includes the movement of personnel, equipment, materials and supplies to the project sites and the establishment of offices and other necessary facilities prior to the commencement of the project. WTU does not include a separate mobilization cost in its investment cost summary, but embeds mobilization costs within its unit costs. In the aggregate, these costs total approximately 1.1% of its investment cost (exclusive of land).

BN has applied a 5.5% additive to all construction items except track materials. BN cites a recent quotation for the San Francisco International Airport that included a 10% mobilization factor. It also notes that WTU's Witness Brown, in a separate capacity as a consultant, included a 10% mobilization in a recent highway bid.

We accept BN's mobilization costs. While an SAC analysis seeks the least expensive way to construct a railroad, WTU has not adequately justified its average mobilization factor of 1.1%. WTU fails to explain why such a low factor is appropriate when its expert used a 10% mobilization factor in a recent bid. BN's factor (approximately half of the 10% factor recently quoted by WTU's witness) is a conservative estimate based on the record in this case.

16. *Contingency Costs.* A contingency cost is an additional markup above anticipated costs designed to cover unexpected complications encountered during the construction process.

Accordingly, contingencies have been accepted in prior SAC cases.[159] WTU includes $86.7 million for contingencies (approximately 5.3% of total investment cost). It added a 3 to 5% contingency to investment accounts (where quantities and prices are known) and 10% to accounts such as bridge foundations (where engineering considerations, such as underground conditions, would be unknown until excavation were to begin).

BN includes a 10% contingency on all cost items except land. BN contends that a review of information from government agencies and construction companies regularly involved in very large construction projects shows that it is common practice to provide contingencies between 10 and 30%, depending upon the size of the project. The U.S. Army Corps of Engineers provides a 10% contingency for projects that cost more than $10 million.

We reject WTU's contingency factor because it is based upon unsupported premises. WTU was unable to document a construction project of the magnitude of the WTRR that contained a contingency factor under 10%. In contrast, BN listed a number of sources indicating that a contingency factor in excess of 10% is reasonable. BN also noted that a 1993 construction estimate prepared by a principal WTU witness contained a 10% contingency for a 5.8-mile rail line. Therefore, we accept 10% as a reasonable estimate for a contingency factor for the WTRR.

[159] *See, e.g., Nevada Power II*, 10 I.C.C.2d at 311.

APPENDIX E

DISCOUNTED CASH FLOW COMPUTATION

The parties use the DCF methodology developed in *Nevada Power II* to calculate the SAC constraint.[160] The following table summarizes our conclusions under the DCF.

TABLE E-1
DISCOUNTED CASH FLOW, WTRR
($000)

| Year | Group Tons | Group Revenues | Road Property Capital Recovery | Operating Expense | Total Stand-Alone Requirement | Overpayment or (Shortfall) | Present Value of Difference |
|---|---|---|---|---|---|---|---|
| 1995 | 45,550 | 433,360 | 149,488 | 142,848 | 292,336 | 141,024 | 133,323 |
| 1996 | 46,937 | 468,415 | 163,017 | 149,425 | 312,442 | 155,972 | 131,788 |
| 1997 | 47,202 | 483,623 | 173,541 | 153,888 | 327,429 | 156,180 | 117,943 |
| 1998 | 47,797 | 502,747 | 186,125 | 159,230 | 345,355 | 157,393 | 106,230 |
| 1999 | 48,544 | 522,966 | 200,278 | 164,793 | 365,071 | 157,894 | 95,247 |
| 2000 | 49,073 | 542,749 | 214,588 | 170,602 | 385,190 | 157,559 | 84,946 |
| 2001 | 49,618 | 563,394 | 230,060 | 223,193 | 453,253 | 110,141 | 53,073 |
| 2002 | 50,172 | 584,862 | 246,758 | 182,374 | 429,132 | 155,730 | 67,067 |
| 2003 | 50,679 | 606,632 | 264,496 | 188,414 | 452,910 | 153,722 | 59,169 |
| 2004 | 52,611 | 644,495 | 291,429 | 197,160 | 488,589 | 155,905 | 53,634 |
| 2005 | 52,741 | 664,657 | 310,261 | 203,179 | 513,440 | 151,218 | 46,494 |
| 2006 | 52,828 | 684,497 | 330,170 | 209,077 | 539,247 | 145,250 | 39,915 |
| 2007 | 52,917 | 704,964 | 351,513 | 215,146 | 566,659 | 138,305 | 33,968 |
| 2008 | 52,973 | 725,563 | 374,145 | 288,586 | 662,731 | 62,832 | 13,792 |
| 2009 | 52,973 | 745,951 | 397,971 | 227,397 | 625,368 | 120,582 | 23,657 |
| 2010 | 54,139 | 784,904 | 432,833 | 238,693 | 671,526 | 113,378 | 19,880 |
| 2011 | 54,139 | 806,960 | 460,762 | 245,349 | 706,111 | 100,848 | 15,804 |
| 2012 | 55,650 | 877,794 | 504,390 | 260,872 | 765,262 | 112,531 | 15,762 |
| 2013 | 55,650 | 902,460 | 537,358 | 268,152 | 805,510 | 96,949 | 12,136 |
| 2014 | 55,650 | 927,819 | 572,705 | 275,630 | 848,335 | 79,483 | 8,893 |
| | | | | | 0 | TOTAL | 1,132,720 |

In the following discussion, we resolve a number of disputes between WTU and BN on issues that affect the DCF computation.

[160] *See,* 10 I.C.C.2d at 274-79.

1. *Cost of Capital.* The cost of capital is the rate of return that WTRR would have to offer in order to entice investors to supply debt and equity funds. Both parties use the railroad industry's cost of capital to estimate what the required rate of return would be. Below we separately discuss the cost of raising debt and equity capital, and the capital structure (debt/equity mixture) of the SARR.

a. *Cost of debt.* Following precedent established in previous cases, WTU asserts that WTRR's cost of debt over the 20-year DCF period would be the weighted average rail industry debt during the 1992-94 construction period of the WTRR.[161] On the other hand, BN asserts that the cost of debt should not be based solely on the rail industry's 1992-94 debt costs. Rather, BN argues that the cost of debt should reflect the current debt rates over the 20-year DCF period. These rates are unknown, but BN relies on a single recent rate, the rail industry's 1994 cost of debt--the highest debt cost over the 1992-94 period--to estimate what WTRR's debt rates would be over the 20-year DCF period. BN argues that in a contestable market, if the rate of return is constrained at a lower historic level, the stand-alone entity would have an incentive to exit and seek alternative investments offering higher returns.

Use of the rail industry's 1992-94 average cost of debt is preferable. There is no disagreement that this rate represents the cost of debt that WTRR would incur when it assembles the railroad. Because this debt would be incurred during the construction period, and because debt financing establishes a set interest rate over a set time period, WTRR would not have to pay prevailing debt rates in periods following construction to prevent the suppliers of debt capital from withdrawing their investment. Indeed, not only could WTRR continue to pay off its debt at the contracted rate, it could refinance and lower its debt costs if the opportunity provided itself in the future.

Finally, even if we were to accept BN's arguments concerning use of a current cost of debt, there is no reason to believe that the cost of debt for 1994 would be a better predictor of future interest rates than the 3-year average used by WTU. Indeed, averages, rather than single-year data, are generally used to predict the future. For these reasons, we will use WTU's evidence on the cost of debt to calculate the composite cost-of-capital for WTRR.

b. *Cost of equity.* Both parties agree that the cost of equity faced by WTRR would vary over time. However, the parties offer different estimates of the cost of equity that WTRR would face in the SAC period (1995-2014). BN uses the rail industry's 1994 cost of equity to estimate the 1995-2014 cost of equity. WTU, on the other hand, uses the average cost of equity for the rail industry during the 3-year construction period to estimate the future cost of equity.[162]

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[161] The weighted average cost of debt is developed using the following formula:

$$\frac{\sum COD_i \times Debt_i}{\sum Debt_i}$$

where
COD = cost of debt from annual cost of capital finding.
Debt = dollars of construction financed with debt instruments.
i = each year in the construction period.

[162] The difference between the two parties' estimates is approximately 1/2%.

Because equity costs fluctuate from year-to-year, we estimate the cost of equity for future time periods using an average of a known historical period. Absent evidence projecting the cost of equity for the future, the cost of equity over several years provides a more reliable estimate of future equity costs. Using data for a single year increases the risk that the single period is aberrational. Thus, we see no reason to depart from past precedent of using the average for a known historical period.

c. *Capital structure.* WTU assumes that the WTRR would have a capital structure mirroring that of the rail industry during the 1992-94 construction period. BN assumes that the capital structure for the 20-year DCF period would mirror the rail industry's 1994 structure--23.9% debt and 76.1% equity.[163]

Clearly, WTRR would have to raise substantial amounts of debt and equity capital as it built the rail system in the 1992-94 period. Once the bulk of the capital was committed to the WTRR, the capital structure of the railroad would not change dramatically from year to year. Because the WTRR would raise significant amounts of capital each year during the construction phase, it is reasonable to assume that at the end of construction the capital structure of the WTRR would mirror the average capital structure of the industry during the 1992-94 period. In any event, the difference between the 1994 capital structure and the 3-year average is minimal.

2. *Inflation Factors.* The parties agree on the inflation indexes used for the DCF analysis with the exception of the inflation index for land (discussed here), the inflation of capital carrying charges (discussed in Section 7 of this appendix), and the inflation in revenues WTRR would earn from the traffic group (discussed in the body of this decision). To account for inflation in land values, BN uses the *Farm Real Estate Historical Series Data* for Wyoming, Nebraska, Colorado, New Mexico, and Texas, and U.S. Bureau of Labor Statistics, *Monthly Labor Review and CPI Detailed Report*, January issues, CPI for the western and southern United States. It develops estimates of inflation in land by state (rural and urban) and weights it by each state's portion of total land value in 1992. WTU uses the implicit price deflator for Gross Domestic Product as an inflator for land value.

While the parties' estimates for inflation in land differ by only 0.64%, BN's inflation factor is more directly related to the land that WTRR would need. It reflects the inflation in land prices in the states that would be traversed by WTRR, rather than WTU's national average. Because BN's land inflation index is more specific, we use it in our SAC analysis.

3. *Interest During Construction.* The parties disagree on the amount of interest that would accumulate during construction of WTRR. The principal difference results because the parties disagree on the time period over which WTRR would be built and the timing of the investment. Because we accept WTU's construction period, we accept its evidence on the amount of interest that would be incurred during construction.

4. *Amortization Schedule For Assets Purchased With Debt Capital.* Both parties use the same method to determine interest payments and amortization of debt. They reach different results because they assume different construction periods, and consequently, different capital structures

[163] The parties have ignored the preferred equity portion of the rail industry's capital structure and assumed that the WTRR capital structure would be made up solely of debt and equity.

and debt rates. Because we use WTU's construction period, cost of debt and capital structure evidence, we use its calculation.

5. *Present Value Of Replacement Cost Of WTRR's Investment.* WTU argues that land, grading and tunnels are assets that do not wear out and would not need to be replaced. WTU modifies the *Nevada Power II* SAC methodology to adjust the replacement cost of land, grading and tunnels to zero. BN does not specifically comment on this issue, but its spreadsheets contain allowances for replacement of all assets with the exception of land.

Consistent with the approach used in *Nevada Power II*, we include the cost of replacing grading and tunnels in our DCF. Although grading and tunnels are long-lived assets, at some point they require normalized maintenance in order to be able to provide continued service. Because the parties have not provided for normalized maintenance of these assets, it is necessary to provide for eventual replacement. However, because replacement would not occur for many years, the present value of the future cost of replacement is small.

6. *Tax Depreciation Schedules.* Based on the state and Federal tax codes in effect during the construction period, both parties assume that WTRR would use accelerated depreciation for tax purposes. The only area of disagreement is the number of years over which certain assets can be depreciated. WTU maintains that bridges and culverts, fences and road signs, station and office buildings, fuel stations, shops and engine houses, and public improvements should be depreciated using a 15-year life. It asserts that roadway buildings have a 31.5-year life under the applicable Modified Accelerated Cost Recovery System (MACRS). BN, on the other hand, asserts that the tax depreciation life on these assets is 20 years under MACRS.

A review of the Federal tax code reveals that these accounts have 20-year tax depreciation lives under MACRS.[164] Furthermore, states that would tax WTRR follow the Federal tax code with respect to depreciation. Thus, BN's evidence on this issue is accepted.

7. *Required Capital Carrying Charge.* The parties use similar calculations to distribute the return on and return of WTRR's investment over the 20-year period.[165] WTU argues that BN incorrectly inflates the capital recovery cost by using the escalation factor for revenues, rather than the inflation in the cost of the assets that compose the WTRR investment. Further, WTU maintains that BN's calculation includes a return on capital for items that are expensed and would require no capital investment.

BN asserts that inflation indexes tracking changes in the cost of assets are appropriate surrogates for expected earnings when rail transportation markets are stable. However, it asserts that the market for WTRR transportation services would be declining and that earnings could not be expected to increase at the same rate as inflation in the cost of assets. It therefore maintains that it is more appropriate to use an estimate of revenue escalation as the inflation component for asset prices in this case.

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[164] I.R.C. 168; Rev. Proc 87-56, 1987-2 C.B. 674, *et seq.*

[165] Both parties estimate the residual value of WTRR's assets after the 20-year DCF period using the *Nevada Power II* methodology. That procedure calculates the remaining value of the WTRR's assets after the 20-year period as the present value of WTRR's 4th quarter 2014 required revenues collected in perpetuity.

Regarding the inclusion of operating cost in the required capital carrying charge calculation, BN maintains that a return is not generated on the operating costs. Rather, BN asserts that operating costs are included to give effect to the same revenue inflation factor that drives the inflation in assets. Again, it maintains that, because revenues would escalate at a slower rate than operating costs, use of revenue escalation factors to inflate operating expenses is appropriate.

Our SAC constraint compares the total cost of a stand-alone system to the total revenue it could expect to earn. Because the components of this test (revenue and cost) are separately determined, it is appropriate for them to change over time at different rates. BN's proposed use of its estimate for escalation in WTRR revenues would not yield a "levelized" rate[166] that would permit the recapture of inflation in asset prices. In any event, as discussed in the text of the decision, we do not assume that the market for WTRR transportation would decline.

In past proceedings, operating expenses were calculated separately from the required return on, and of, capital.[167] We continue to use that procedure here. Consequently, WTU's concern that BN's method calculates a return on operating expense is moot.

8. *Calculation of the Residual Value of the WTRR.* BN argues that costs and revenues must be compared not just for the 20-year DCF period but in perpetuity, because WTRR would have no set finite life.[168] WTU asserts that BN's netting of costs and revenues in perpetuity simply extends the speculation regarding rates, escalation factors and tonnages. It maintains that we should apply the method used in *Nevada Power II* to estimate future costs and revenues, which assumed that the remaining value of the SARR's assets would be recovered after the 20-year period, and therefore would not be the responsibility of the hypothesized shipper group.

We agree with WTU regarding the netting of revenues and cost over the 20-year period. Netting in perpetuity would increase the complexity of estimating future revenues and costs without a concomitant increase in the accuracy of our analysis. Because parties calculate the residual value of the WTRR's assets using the *Nevada Power II* method, we continue to assume that those remaining costs would be recovered after the 20-year period and that the costs of recovering of the residual value would not fall on the hypothetical shipper group.

9. *Comparison of Revenues and Costs of the WTRR.* As Table E-1 demonstrates, WTRR's projected annual revenues exceed the portion of costs allocated to that year in each of the 20 years in the DCF period. The cumulative present value of the difference is $1.133 billion.[169]

10. *Rate Prescription under SAC.* Both parties have put forward SAC-based methods that might be used to prescribe a rate for WTU. WTU would allocate the SAC revenue need among the shippers in the SAC group on a ton-mile basis, because it views the output of the WTRR as a homogeneous service. This method would yield a unit rate of $0.010530 per ton-mile in WTRR-

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[166] *Nevada Power II*, 10 I.C.C.2d at 277 n.29, and *Nevada Power I*, 6 I.C.C.2d at 67.

[167] Separate calculations are simpler because inflation in the asset prices would be different from the inflation in operating expenses

[168] However, BN's spreadsheets calculate the residual value of WTRR's assets after 2014 using the *Nevada Power II* method.

[169] The aggregate group revenue and SAC revenue limit, in present value terms, are $4.572 billion and $3.419 billion, respectively.

owned hopper cars. When this unit rate per ton-mile is multiplied by 1121.9 miles from Rawhide to Oklaunion, it would yield a rate for the WTU traffic of $11.81 per ton.[170]

BN's suggested method of reducing rates for the shipper group would require a pro-rata reduction of 34.23% in the WTRR's first year of operation. This pro-rata reduction in the $19.36 tariff rate for WTU's traffic would yield a rate of $12.73 in carrier-owned cars. As with the rate reduction method proposed by WTU, BN's method leads to a rate for the issue traffic that is less than 180% of the variable cost of the movements.

We need not address the validity of either of the parties proposed methods,[171] because both WTU's and BN's suggested methods would result in an r/vc percentage of less than 180.

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[170] WTU conducts an additional analysis to insure that each utility in the shipper group would obtain a lower rate than offered by BN in order to show that each utility would be better off accepting WTRR's average rate than the existing (contract) rate set by BN.

[171] WTU's method arguably relies upon an arbitrary allocation of stand-alone cost per net ton-mile that has been previously rejected. *See, e.g., Coal Trading*, 6 I.C.C.2d at 380. BN's method was proposed in *Coal Trading*, but that proceeding was discontinued without a rate prescription.

## APPENDIX F

## VARIABLE COST

In developing evidence on the variable cost to BN of providing rail transportation service to Oklaunion, the parties begin their analysis with the system-average variable cost for BN produced by URCS. For most cost categories, the parties then tailor their evidence to the WTU traffic at issue here by adjusting the URCS figures to more closely estimate the actual cost of providing that particular service. Where the parties do not adequately document or support these adjustments, we apply the system average figures. In determining system average costs, we use the most recent 1994 version of URCS.

The discussion that follows individually examines the evidence for each variable cost element. The variable costs of moving the issue traffic developed by the parties and those used in this decision are shown in the following table.

TABLE F-1

VARIABLE COST
(Rawhide to Oklaunion)

| ITEM | WTU | BN | STB |
|---|---|---|---|
| 1. Carloads - Clerical O/T | $ 11.59 | $ 21.72 | $ 21.72 |
| 2. Carload Handling - Other | 1.15 | 1.15 | 1.15 |
| 3. Switching-Yard Locomotives | 3.66 | 5.19 | 4.01 |
| 4. Swit-Road Locos Non-Yard | 0.02 | 0.03 | 0.03 |
| 5. Swit-Road Locos Yard Track | 0.00 | 0.22 | 0.08 |
| 6. Gross Ton Mile Expense | 272.03 | 312.82 | 304.99 |
| 7. Loop Track Expense | 1.78 | 1.32 | 1.22 |
| 8. Train Miles Exp O/T Crew | 4.61 | 4.99 | 4.63 |
| 9. Train Mile T&E Expense | 74.29 | 106.86 | 101.24 |
| 10. Helper Service Expense | 5.78 | 5.12 | 6.44 |
| 11. Helper Service - Crew Exp | 1.83 | 6.23 | 6.93 |
| 12. Locomotive Ownership Exp | 81.72 | 116.89 | 96.51 |
| 13. Locomotive Opn Expense | 110.53 | 120.80 | 105.65 |
| 14. Car Ownership Expense | 54.10 | 75.85 | 75.80 |
| 15. Car Operating Expense | 33.87 | 168.00 | 32.64 |
| 16. End of Train Device Exp | 0.09 | 0.12 | 0.12 |
| 17. Joint Facility Expense | 59.21 | 59.21 | 59.21 |
| 18. Loss and Damage Expense | 0.10 | 0.10 | 0.29 |
| TOTAL VC/CAR - UNINDEXED | $ 716.36 | $1006.62 | $ 822.66 |
| TOTAL VC/CAR - INDEXED[172] | $ 714.49 | $1036.38 | $ 845.16 |
| TONS PER CAR | 109.01 | 110.48 | 110.48 |
| VAR. COST PER TON[173] | $ 6.51 | $ 9.32 | $ 7.60 |

[172] WTU indexes costs to the 1st quarter of 1995. Our variable costs and BN's are indexed to the 4th quarter of 1995.

[173] Var. Cost per Ton = (Variable Cost per Car / Ton per Car) x .9934 RFA/URCS bridge factor used by both parties.

1. *Carloads Originated or Terminated--Clerical Expense.*

BN reduces URCS system-average origin and destination clerical cost by the standard costing adjustments developed in *Investigation of Railroad Freight Rate Structure - Coal*, 345 I.C.C. 71 (1975) (*Coal Rate Structure* adjustments).

WTU applies the *Coal Rate Structure* adjustments to destination clerical costs only, but also reduces origin costs to account for the assertedly more efficient billing practices resulting from BN's use of electronic data interchange (EDI).[174] WTU argues that EDI is widely used in the railroad industry and that cost savings result from its use. According to WTU, EDI is especially efficient for coal shipments with their high volume and repetitive nature.

As Table F-1 indicates, WTU suggests that EDI reduces costs by $10 more than that estimated by application of the *Coal Rate Structure* adjustments. However, this assertion is contradicted by WTU's workpapers, which show that clerical costs are $0.46 per ton higher than the system average costs developed by URCS. Because of the inconsistencies in WTU's evidence, we accept BN's $21.72 per carload cost figure based on the *Coal Rate Structure* adjustments.

2. *Carload Handling--Other Expense.*

BN and WTU agree that a variable cost of $1.15 per carload is associated with this cost category.

3. *Switching--Yard Locomotives.*

BN determines the amount of time it takes a yard locomotive to switch a WTU train based on special studies conducted at Amarillo in 1988 and at Alliance in 1989. According to BN, these studies indicate that a yard engine takes, on average, 192.62 minutes to switch a train (1.6605 minutes per car). From this information, BN develops a cost of $5.19 per car for yard locomotive switching.[175]

WTU also develops its switching cost by yard locomotives based on BN's Alliance study.[176] But WTU claims the total switching minutes per train developed by BN inappropriately: (1) adds the results of the Amarillo study (8.54 minutes) and the Alliance study (184.08 minutes); (2) includes switching minutes for grain cars and cabooses (which are not used in WTU service); and (3) includes time for switching performed by non-yard (*i.e.*, road) crews in both the Alliance and Amarillo studies. WTU corrects for these deficiencies and calculates that yard engines spend only 132.68 minutes switching each train (1.1438 minutes per car). As a result, WTU develops a cost of $3.66 per car for switching by yard locomotives.

We reject BN's cost estimate. BN's 192.62 switching minutes represent the sum of the two special studies (184.08 + 8.54 = 192.62). This summation inappropriately includes switching by road engines from the Amarillo study.

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[174] EDI is the electronic transfer of shipping and billing information. It is used for BN origin mines but not for the Oklaunion destination.

[175] Both parties develop the cost per car by multiplying URCS unit cost by the minutes associated with switching that they developed from their special studies.

[176] Switching at Amarillo is performed by road engines.

Because both parties consider the average switching time at Alliance to be representative of the time needed to switch WTU's traffic, we use the Alliance study as the starting point in developing this cost element. We accept WTU's adjustment to the Alliance study that excludes the time associated with grain cars and cabooses. Any cost that is not associated with coal cars does not pertain to WTU's traffic and should be eliminated. Further, the WTU adjustment for switching cabooses is also proper. Both parties agree that end-of-train devices (EOTD) are on all WTU trains and that, therefore, no switching of cabooses occurs. However, we reject the adjustment made by WTU in which it removes minutes for road crew switching in the Alliance study. While switching at Amarillo is done by road crews, WTU has not produced evidence indicating that road crews perform switching activities at Alliance.

After making the adjustments discussed above, we find that yard engines spend, on average, 141.22 minutes switching each train (1.2174 minutes per car). This factor translates into a unit cost of $4.01 per carload.

4. *Switching by Road Locomotives--Non-yard Tracks.*

This cost category covers the expenses incurred when road locomotives perform non-yard switching, *i.e.*, switching of cars in need of repairs (bad-order or disabled cars) during the line haul. WTU and BN include $0.02 and $0.03 per car, respectively, for this service. While the difference between the parties on this item is minuscule, the procedures they use to adjust this system-average cost are used to adjust other variable-cost items. Therefore, we discuss in detail the procedures used by both parties to adjust system-average cost.

BN adjusts system-average cost and service units to reflect the actual time (in minutes per car) that road engines devote to switching, locomotive consist, repair expense, and locomotive fuel associated with the issue service. With the exception of the locomotive-consist adjustment, where WTU uses the system-average locomotive consist, WTU also adjusts the same costs and service units, albeit with different results.

a. *Minutes per car adjustment.* Based on a study of 11,677 coal trains moving between October 1987 and October 1988, BN found that, on average, less than one car (0.5813 cars) per train needed to be removed from a train for repairs. It takes approximately 40 minutes to switch a car out of a train. When allocated across the total number of cars in a train, this equates to 0.1983 minutes per car [(40 min. x .5813 cars per train) / 116 cars per train].

WTU calculates 0.1184 switching minutes per car based on a 1989 BN study conducted at the Alliance Yard, which found that 23.62 minutes are required for switching a bad-order car. WTU further adjusts the time associated with switching a car to eliminate the time associated with rip-track switching.[177] WTU does not explain why it made this latter adjustment.

We reject WTU's adjustment because it is based on yard switching that WTU has not shown is representative of switching at non-yard locations. The best evidence is provided by BN because it is specifically based on switching at non-yard locations.

b. *Locomotive-consist adjustment.* BN adjusts URCS system-average locomotive consist by a factor of 1.05 to reflect the actual number of locomotives used to move WTU traffic. While WTU

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[177] A rip track is a piece of track where cars that have become disabled are moved to be repaired.

does not question this adjustment, its costs are based on system-average data. Because actual costs are always preferable to system average costs, we accept BN's adjustment reflecting the actual number of locomotives used in this service.

c. *Repair expense adjustment.* BN calculates locomotive maintenance costs of $0.93503 per LUM, a 51% increase over system-average locomotive repair cost. This adjustment is based on its maintenance agreement with the EMD, for 350 SD70MACs. This agreement includes costs for locomotive overhauls, materials, and training 122 employees to repair the SD70MACs.

We reject BN's locomotive repair costs for several reasons. BN assumes a 31.22% locomotive spare margin. As discussed *infra,* Section 12c, we find that only a 10% margin is needed. Use of a 10% spare margin reduces the number of locomotives allocated to WTU's service from 15.7 to 13.2. Further, BN assumes that the 122 employees trained by EMD are totally dedicated to the 350 SD70MAC locomotives. While the EMD agreement states that 122 employees will be trained, there is nothing in the agreement to prevent these employees from servicing other types of engines. BN states that these are the only employees who will work on the new SD70MAC locomotives, but there is no evidence to indicate that these employees will work exclusively on the SD70MACs. Therefore, we do not consider it appropriate to assign the total cost of these employees to the SD70MAC engines. Because of our inability to adjust for these deficiencies, we do not rely on BN's locomotive repair costs.

In contrast to BN's increase of system-average cost, WTU reduces system average locomotive repair cost by 39%. WTU develops its average repair expense from BN 1990-94 locomotive repair and mileage data reports for locomotives in the Alliance coal pool.[178] The repair expense per LUM is reduced to exclude non-variable expenses.

WTU's evidence is also unacceptable. The underlying reports relied on by WTU do not include any data for SD70MAC locomotives. Because SD70MACs provide the motive power for the issue traffic, WTU's evidence is unrelated to actual operations.

Although actual costs are preferable to system-average costs, both parties' specific locomotive repair expenses are flawed and cannot be used in developing the cost for the issue traffic. Therefore, our restatement uses URCS system-average cost as the default value for this cost item.

d. *Locomotive fuel adjustment.* Both parties adjust system-average fuel cost based on special studies. We reject WTU's adjustment because WTU has not provided any explanation or supporting documentation to show how its adjustment is developed.

BN bases its adjustment for fuel cost on its train performance model (TPM). BN computes a ratio of TPM fuel consumption to the average fuel consumption for trains operating between Rawhide and Oklaunion. It uses this ratio to adjust system-average cost. The results of the TPM computer simulation are questionable, however, because some of the input data differs from that associated with WTU's traffic.[179] Furthermore, BN's average fuel expense for Rawhide/Oklaunion

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[178] WTU Opening, O'Connor V.S., Exh. TOC-13f.

[179] The TPM includes two SD70MACs for helper service at Crawford Hill and two SD40s for helper service at Palmer Lake. However, the record indicates that helper service at Crawford Hill is provided by three SD40 locomotives. The TPM uses 21.75 tons as the tare weight of freight cars, but actual operating statistics indicate that, on average, the empty weight of a car is 21.66 tons. Similarly, the TPM assumes that 112 tons of coal is loaded into each car, while actual

(continued...)

trains (used in conjunction with the TPM results to develop the adjusted ratio) includes costs that are not related to fuel expense.[180]

Again, although actual costs are preferable, we are unable to rely on the adjusted system-average cost evidence provided by either of the parties. Thus, the most reliable evidence is the 1994 URCS system-average cost.

5. *Switching--Road Locomotives--Yard Tracks.*

BN adjusts system-average costs in developing a $0.22-per-car cost for switching performed on yard tracks by road locomotives. Based on a 1988 Amarillo 1-week study, it assigns 24.08 minutes for switching per train. BN also makes adjustments for locomotive consist, repair, and fuel usage (discussed *supra,* Section 4).

WTU argues that BN's road locomotives do not perform switching for WTU's service. Thus, WTU asserts that this cost item should not be included in computing the total movement cost.

The switching minutes used by BN from the study are identified as yard crew activities, but include a category "Road Crew Switching." The study indicates that road crews perform, on average, 8.54 minutes of switching per train. Because WTU has provided no evidence to refute BN's study, we will accept the 8.54 minute figure as the best evidence of record. For the reasons discussed *supra,* Section 4, we accept BN's locomotive consist adjustment but reject its locomotive repair and fuel adjustments. These adjustments to system-average cost translate into a cost of $0.08 per car for switching by road locomotives on yard tracks.

6. *Gross Ton-Mile Expense.*

Table F-2 shows the cost categories the parties included in calculating gross ton-mile (GTM) expenses. Each party relied on special studies to adjust system-average costs. These items are discussed separately.

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statistics show that the average load of a car is 110.48 tons. We do not have access to the TPM and cannot incorporate the actual statistics reflective of WTU's service.

[180] For example, the fuel expense included for helper service includes general overhead additives (BN Reply, workpaper KKA000135). Also, the fuel expense for "LUM-Train" of $47.78 includes the total of fuel expense, depreciation and leases, and return on investment of "Total Other Expenses Per Car." (Id., Klick/Kent V.S., Exh. 4 at 7).

TABLE F-2

BN GROSS TON-MILE EXPENSE

| ITEM | WTU | BN | STB |
|---|---|---|---|
| a. Locomotive Fuel | $ 52.77 | $ 54.60 | $ 57.72 |
| b. Locomotive Repair | 13.04 | 34.89 | 23.86 |
| c. MOW | 82.85 | 90.71 | 84.45 |
| d. Other Road Operating Exp. | 45.00 | 39.36 | 45.70 |
| e. Depreciation & Leases | 39.55 | 39.33 | 39.33 |
| f. Return on Investment | 38.82 | 53.93 | 53.93 |
| TOTAL GTM EXPENSES | $272.03 | $312.82 | $304.99 |

a. *Locomotive fuel.* Both parties use the same general method to determine this cost item. As discussed *supra,* Section 4, we find that the adjustments made by each party are inappropriate. Consequently, our restatement uses system-average locomotive fuel costs.

b. *Locomotive repairs.* Again, both parties use the same general procedures discussed *supra,* Section 4, to determine this component of GTM cost. Because we reject these adjustments, our restatement relies on system-average locomotive repair costs.

c. *Maintenance-of-way.* Both parties use the Speed Factored Gross Ton (SFGT) formula to compute variable MOW cost. However, the parties disagree in several respects on the use of the SFGT formula.

WTU first computes MOW costs for each line segment assuming current traffic volumes. Second, all traffic is deleted and MOW costs are recomputed. These two values are then subtracted to produce the cost that varies with the level of traffic. Dividing this value by the total GTMs determines the variable cost per GTM.

Like WTU, BN eliminates traffic before applying the SFGT formula, but when doing so it also changes the track designation to that of a branch line, a lighter density classification. Changing track classification results in an adjustment of the tie costs to reflect branch line specifications. BN's alteration of the track classifications, however, is not appropriate: the class of track did not change because of the assumptions used to develop variable cost.

In our restatement, we rely on WTU's procedures and the most recent version of URCS to develop MOW costs. The restated variable MOW cost is $84.45 per car.

d. *All other road operating expenses.* Both parties use essentially the same method in developing these expenses. However, BN includes locomotive fuel and repair overhead adjustment amounts with URCS GTM unit costs for non-fuel and non-repair GTM expenses. Because fuel and repair expense should not be associated with non-fuel and non-repair expense, we accept WTU's evidence. WTU's evidence and the most recent version of URCS produce an expense of $45.70.

e. *Depreciation and leases.* BN uses the results of a special study to calculate this category of costs. WTU accepts BN's special study result. The $0.22 difference between the parties is caused by their use of different service units. Because we utilize BN's service units, BN's cost figure is the more appropriate.

f. *Return on investment.* To adjust system-average road property return on investment (ROI) cost, BN utilizes its 1994 road property investment database. BN identifies the actual book value of the road property and the annual depreciation associated with the issue traffic. BN makes two modifications to book value investment to avoid duplicating expenses calculated elsewhere in URCS. Investment in yard and shop facilities is excluded from the investment base because this cost is allocated by URCS on a system basis. Additionally, investment and depreciation in 12 specific accounts are removed for the same reason. These adjustments are appropriate.

WTU accepts BN's methodology, but develops a different cost for this expense category. However, our review of WTU's workpapers indicates that it has incorrectly used BN's unit cost for depreciation and leases, rather than BN's unit cost for ROI, in developing its variable GTM return on investment expenses. Our restatement utilizes the BN-developed unit cost for ROI.

7. *Loop Track Expense.*

Both parties treat loop track movements as extensions of line-haul operations. These expenses are developed on a GTM and LUM basis. WTU measures these costs at $1.78 per carload. BN estimates these costs to be $1.32 per carload.

TABLE F-3

LOOP-TRACK EXPENSE
(Per Car)

| ITEM | WTU | BN | STB |
|---|---|---|---|
| GTM | $1.13 | $0.68 | $0.62 |
| LUM | .65 | .64 | .60 |
| TOTAL | $1.78 | $1.32 | $1.22 |

The difference in LUM expense between the parties results from the use of different service units. As discussed above, we accept BN's locomotive service units. Further, WTU incorrectly used loaded gross tons per car for the empty portion of the loop track movement. This error effectively doubles the number of gross tons used to calculate this cost.

Both parties adjust system-average locomotive fuel and repair unit costs that impact both GTM and LUM costs. BN applies an adjustment to fuel overhead expenses per car. We reject these adjustments as previously discussed *supra,* Section 4. Our restatement uses BN service units and URCS system-average unit costs for these items and finds loop-track costs to be $1.22 per carload.

8. *Train-Mile Expense--Other Than Crew.*

Train-mile expense includes costs related to cabooses, clearing wrecks, dispatching trains, train inspections and other administrative activities associated with train operations. Both parties adjust the system-average cost to calculate this expense item. The difference results from WTU's exclusion of caboose repair facilities cost, the differing round-trip mileage developed by each party, and the use of different versions of URCS.

Because cabooses are not necessary for WTU's traffic, all costs associated with cabooses (including repair facilities) should be excluded. In addition, because this decision focuses on service only from Rawhide, we use BN's round-trip mileage. Finally, we use the most recent version of URCS to restate this cost item. These adjustments result in a train-mile expense of $4.63.

9. *Train-Mile Expense--Train and Engine Crews.*

BN uses the results of a special study to develop train and engine crew cost. Wages for each category of employee are taken from BN pay records for both the loaded and empty movements to and from Rawhide. Wages for engineers are adjusted to reflect the use of three SD70MAC locomotives per train. Direct wages are increased for productivity payments, vacations, training payments and holidays, and then adjusted to reflect the non-wage portion of the URCS salary costs.[181] This cost is then reduced to the variable level by the URCS variability ratio. This process results in a crew cost of $106.86 per car.

With several adjustments, WTU uses the same general procedure as BN. WTU adjusts the number of employees to correspond to one crew per train. (BN's study determined that sometimes more than one crew is needed per train.) WTU removes productivity payments made to crew members, arguing that they are special charges and should not be included as variable salary and wage expenses. Further, WTU argues that BN double-counts constructive allowances and inappropriately includes adjustments for non-wage fringe benefits and joint facilities that have already been accounted for elsewhere. Finally, WTU criticizes BN's procedure for indexing wage rates from 1993 to 1994.[182] After correcting for these alleged errors, WTU develops a variable cost of $74.29 per car.

BN's assignment of more than one crew per train is reasonable. BN explains that due to delays and the hours-of-service law, crew members are sometimes relieved before the trip is completed. Its actual records show that a single train sometimes had two engineers assigned to it.

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[181] BN's crew pay records do not include such non-wage items as hotel and taxi costs.

[182] The BN indexing procedure calculates a simple average of the four quarterly AAR wage rate indices in 1994 with the comparable average for 1993. This procedure develops an index of 1.02812. WTU claims that the use of the simple average for each quarter distorts the overall average, due to the effects of lump sum payments made under union contracts. WTU argues that the impact of lump sum payments is more appropriately distributed using annual 1993 and 1994 wage rate indices.

BN's adjustment to direct crew wages includes constructive allowances but not fringe benefits. A review of BN's records[183] reveals that a predominance of the costs included in developing the mark-up ratio are vacation, deadheading and training pay. All these payments are categorized as salary and wages under the USOA. The same is true regarding the productivity payments made to crew members as a result of operating understaffed (short) crews. These are incentive, or bonus, payments which are treated as wages under the USOA.[184] Under the USOA, all compensation payable to employees for services performed, as well as payments for paid time-off and direct compensation paid for time not worked, are considered salaries and wages. Therefore, the adjustments for certain non-wage items and productivity payments are acceptable inclusions to salary and wage cost.

We agree with WTU that the index developed by BN is not as accurate as using the annual average for each year. The inclusion of lump-sum payments and/or pay increases in a single quarter could distort an annual index based on a simple average of the four quarters. Thus, we have restated the base crew wage per train developed by BN using WTU's index. The corrected crew wage at the 1994 level is $8,727.87.

BN uses three steps, comparable to those in URCS, to determine the variable-cost portion of the base crew wages. First, wages are increased for the non-wage portion of engineer and trainmen costs. WTU did not increase the crew expense for these elements. BN used the proper procedure, and its figure is incorporated in our restatement.

Second, the URCS variability ratio reduces crew wages to the variable level. Application of the most recent version of URCS develops a variability ratio of .80004.

Finally, train-related variable overhead costs are developed and applied to the crew wages. WTU excluded the amounts for fringe benefits, arguing that they had been accounted for elsewhere. We disagree. Under the USOA, fringe benefits include such costs as railroad retirement, pension expenses, unemployment taxes, health plans, hospitalization insurance, and life insurance. The expenses in this account have not been included elsewhere and are appropriately used in determining the variable overhead ratio. Our restated overhead ratio applied to the crew wages is 29.841%.

The restated special study wage cost is $4.48 per train-mile, or $101.24 per carload.

10. *Helper Service Expense.*

BN develops a variable cost of $5.12 per car for locomotive helper service. This cost is based on the need for three additional engines at Crawford Hill and two at Palmer Lake. BN measures LUMs per car at 2.6638 for helper service at both locations.

WTU estimates variable cost per car of $5.78 for helper service at Whitetail, Crawford Hill and Palmer Lake. The expense portion of locomotive costs is developed using system-average costs. The depreciation and ROI expenses reflect data for SD40 locomotives, the type of locomotive identified by BN[185] as used to provide helper service for WTU's traffic. WTU's estimate of LUMs per car is 2.49.

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[183] WTU Reply, O'Connor Workpapers K000560 and K000561.

[184] Likewise, the adjustment BN made to the average wage per train is appropriate because it reflects the adjustment in the engineer's pay for operating three SD70MAC engines.

[185] WTU Reply, O'Connor Workpaper K000545.

We accept BN's calculation of 2.66 LUMs per car for the issue traffic. Our restatement of the operating expense portion uses system-average cost per LUM without adjustment for fuel and fuel overheads, *supra,* Section 4. We agree with WTU that, because SD40 type locomotives have been identified as providing all the helper service, they should be used to develop the related costs. WTU calculates depreciation and ROI expenses for SD40s on a per-hour basis. We accept these costs rather than BN's system-average costs and have increased them to include general overhead costs. Our restated variable cost for this item is $6.44 per carload.

11. *Helper Service--Crew Expense.*

BN develops crew wages per shift (including the productivity payments for operating with short crews) for each helper location based on the number of helper locomotives needed. WTU develops helper service crew cost for the specific service provided at each location. It claims that BN has not applied a variability percentage for crew wages and has inappropriately indexed costs. WTU does not include crew cost for the Palmer Lake helper service because it claims this cost is included in the joint-facility costs.

We accept the unadjusted crew expenses developed by BN of $420.55 for Crawford Hill and $419.48 for Palmer Lake, because they best reflect the actual service provided the issue traffic.

WTU includes crew costs for Whitetail helper service even though trains from Rawhide do not move through Whitetail. Further, we find no support for WTU's exclusion of crew costs for the Palmer Lake service. A review of BN's workpapers relating to joint facility expense[186] does not indicate that the crew costs for Palmer Lake have been included in joint-facility costs.

We agree with WTU that the index used by BN to update the expense to the 1994 level is incorrect. As discussed *supra,* Section 9, the annual index developed by WTU is the proper application. Therefore, the index of 1.0004 will be used to update the crew expense.

We also agree with WTU that the wages developed by BN are not stated at the variable level. Base expenses must have the crew wage variability ratio applied, along with a non-wage adjustment factor and variable and general overheads. However, WTU only applied the variability factor to wage costs. It did not include variable or general overhead additives.

Our restated variable cost for this item is $6.93 per carload.[187]

12. *Locomotive Ownership.*

BN develops locomotive cost per car of $116.89, in contrast to WTU's $81.72 per car. We conclude that $96.51 per car is the best estimate for this expense. The various elements associated with developing these estimates are discussed below.

a. *Types of locomotives.* WTU calculates its locomotive ownership cost based on several types of locomotives. Because we accept BN's assertion that all WTU traffic will move in trains powered by SD70MAC locomotives, we reject WTU's use of average costs for a variety of types of engines.

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[186] BN Reply, Workpapers KKA000195 through KKA000231.

[187] Our restated variable cost is higher than the parties' because of our inclusion of overheads.

b. *Original value.* WTU uses $1.9 million as the original value of SD70MAC locomotives, while BN uses $2.0 million. However, BN's records indicate that the average original cost of SD70MAC locomotives was $1.9 million.[188] Consequently, we accept WTU's $1.9 million figure.

c. *Spare margin.* BN assumes that WTU's service requires a spare margin of 31.22%. WTU applies a 10% spare margin factor.

BN's figure is developed from a study of locomotive service at its Alliance shop during the first 6 months of 1994. BN acknowledges, however, that the Alliance pool does not include data for SD70MAC locomotives. With the exception of the SD60 series locomotives, the average age of Alliance locomotives ranges between 15 and 19 years. This compares to the average age of the SD70MAC locomotives of 1.26 years. The impact of locomotive age on spare margin is shown in BN's study.[189] The spare-margin ratio for the newer SD60 series locomotives is significantly lower than for the older locomotives in the pool, and the percentage of bad-order time for SD60s is less than for the remainder of the Alliance Pool. There are no data representative of the newer SD70MAC locomotives that substantiate the use of a spare margin different from the 10% accepted in past cases.

d. *Cycle time.* As discussed previously, this proceeding focuses on the reasonableness of rates from Rawhide only. WTU's cycle time is based on aggregate data from various origin mines, and we are unable to disaggregate the data. BN relied on actual Rawhide-to-Oklaunion cycle time. Consequently, we accept BN's cycle time as the best evidence of record for calculating locomotive and car requirements.

e. *Equipment hours per year.* BN's calculations assume an 8,760-hour year (365 days x 24 hours). WTU develops its cost using 8,766 hours or 365.25 days per year. Because WTU's estimate gives effect to leap years, it is slightly more accurate, and we accept it.

Based on the above discussed elements, we calculate locomotive ownership costs at $96.51 per carload.

13. *Locomotive Operating Expense.*

BN develops its LUM expense by adjusting system-average costs for SD70MAC locomotive fuel efficiency and repair cost. BN develops LUMs of 57.3724 per car corresponding to an operating cost of $120.80 per car.

WTU uses the same general method as BN. WTU calculates the LUMs per car at 69.1438 using a mixture of locomotive types. WTU calculates LUM operating expense to be $110.53 per car.

As discussed *supra,* Section 4, we disallow the adjustment factors developed by both parties for locomotive repairs and fuel expense. However, we accept BN's calculation of 57.3724 LUMs per car, because it is based on the actual number of SD70MAC locomotives used to provide service to WTU. Therefore, our restatement includes $105.65 per carload for locomotive operating expense.

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[188] WTU Rebuttal, O'Connor Workpaper K000549.

[189] BN Reply, Workpapers KKA000042 through KKA000053.

14. *Car Ownership Cost--Railroad-Owned Cars.*

WTU computes its car ownership cost assuming that one-half of the coal cars are shipper-owned steel gondola cars and the other half are leased aluminum gondola cars. BN bases its calculation on the issue traffic moving exclusively in leased aluminum gondola cars.

As discussed above, we accept BN's service units from Rawhide. Furthermore, according to BN, WTU shipments will move exclusively in aluminum cars as of the fourth quarter 1995. Therefore, car ownership cost is most appropriately based on the use of aluminum cars.

Based on the use of aluminum cars and our most recent 1994 version of URCS, car ownership costs are $75.80.

15. *Car Operating Expense.*

WTU's car operating expense is based on the use of a combination of steel and aluminum cars. Because we base our calculation on the issue traffic moving in all aluminum cars, we reject WTU's calculations based on a combination of steel and aluminum cars.

The evidence shows that BN uses J311 unequipped aluminum gondola cars to serve WTU. But WTU points out that BN has used URCS unit costs for equipped, rather than unequipped, gondola cars. We reject BN's use of URCS unit costs for equipped gondolas, with their substantially higher cost.[190]

Our restatement reflects URCS unit costs for unequipped gondola cars.

16. *End-of-Train Devices--Ownership Cost.*

As noted *supra,* Section 8, EOTDs are used in place of cabooses, and all caboose-related costs have been excluded. The parties develop EOTD cost on a movement-specific basis. WTU and BN include $0.09 and $0.12 per car, respectively.

WTU uses the average age of the locomotives in the Alliance Pool to develop its EOTD cost.[191] BN uses EOTD system-average cost and associated characteristics to develop its cost. WTU has not explained why EOTD costs can be based on locomotive data. Therefore, we accept BN's costs, depreciation rates and the average age based on data for EOTDs.

17. *Joint Facilities Expense.*

The parties develop joint facilities expense by excluding it from their respective 1994 URCS applications and substituting the same movement-specific joint-facilities payments associated with the issue traffic. We accept the joint facilities expense used by the parties in our restatement.

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[190] The railroad annual report form R-1 recognizes that cars beginning with a "J" designation are plain (unequipped) gondola cars.

[191] WTU Reply, O'Connor V.S. Exh. TOC-13d.

18. *Loss and Damage Expense.*

The parties develop loss and damage (L&D) expense based on preliminary 1994 URCS system-average cost. We have restated L&D using system-average cost from the most recent 1994 version of URCS.