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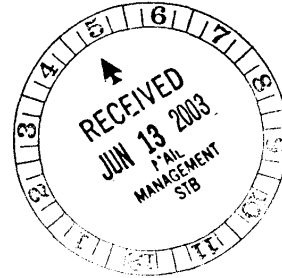
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June 13, 2003



via Hand Delivery

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

PUBLIC VERSION

**Re: *Otter Tail Power Company v. The Burlington Northern and
Santa Fe Railway Company*, Docket No. 42071**

Dear Secretary Williams:

Enclosed for filing in the above-captioned matter is a public version of the Opening Evidence of The Burlington Northern and Santa Fe Railway Company ("BNSF"). This filing consists of the original and 10 copies of a one volume Narrative and Exhibits. In addition, BNSF is filing three compact discs. Each compact disc contains a set of the public version of BNSF's Narrative and Exhibits. Please note that this filing includes color and oversized documents.

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Sincerely,

Anthony J. LaRocca

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cc: Counsel for Complainant

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**BEFORE THE
SURFACE TRANSPORTATION BOARD**

STB Docket No. 42071



**OTTER TAIL POWER COMPANY
v.
THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY**

**Opening Evidence of
The Burlington Northern and Santa Fe Railway Company**

NARRATIVE AND EXHIBITS

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June 13, 2003

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THE BURLINGTON NORTHERN AND
SANTA FE RAILWAY COMPANY**

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

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE

A. INTRODUCTION

This is the opening evidence and argument of defendant The Burlington Northern and Santa Fe Railway Company ("BNSF") in the rate reasonableness proceeding *Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company*, STB Docket No. 42071. The format of BNSF's submission complies with that prescribed in the Board's March 12, 2001 decision in STB Ex Parte No. 347 (Sub-No.3), *General Procedures for Presenting Evidence in Stand-Alone Rate Cases*.

This case involves a challenge to the reasonableness of BNSF's common carrier rates for the transportation of coal from the Wyoming Powder River Basin ("PRB") to the Big Stone Generating Station ("Big Stone") operated by the Otter Tail Power Company ("Otter Tail"). The Big Stone Station is located near Big Stone, South Dakota near the border with Minnesota. The challenged rates are set out in Common Carrier Pricing Authority BNSF 90062 ("CCPA-BNSF 90062").¹ CCPA-BNSF 90062 covers transportation from certain Wyoming PRB mine origins and sets out two common carrier rates based on the type of car: a rate for movements in shipper-supplied steel cars and a rate for movements in shipper-supplied aluminum cars. Otter Tail's complaint has challenged the reasonableness of both rates. Since the rate went into effect, however, all Otter Tail shipments have moved in aluminum cars and the vast majority have originated at just two mines, Belle Ayr and Eagle Butte.²

CCPA-BNSF 90062 became effective on January 1, 2002 upon the expiration of a prior transportation contract between BNSF and Otter Tail. BNSF and Otter Tail attempted to

¹ BNSF.OP.WP.II.A-0005 to 0012.

² Electronic workpaper "opstats.xls."

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reach an agreement over the terms of a transportation contract that would replace the expiring contract, but the negotiations were unsuccessful. Otter Tail therefore requested that BNSF provide common carrier rates for the movement of PRB coal to the Big Stone Station to become effective when the existing contract expired and BNSF responded by establishing CCPA-BNSF 90062.

B. VARIABLE COST EVIDENCE

Section II.A.1 of this Narrative describes BNSF's analysis of the variable costs of providing service to Otter Tail's Big Stone Station. As discussed in detail in Section II.A.1, BNSF's calculations demonstrate that the revenue to variable cost ("R/VC") ratio for the issue traffic service exceeds the jurisdictional threshold. The R/VC ratios for transportation at issue in this proceeding are set out below.

**Table I-1
R/VC Ratios**

Belle Ayr	
1Q02	232%
2Q02	224%
3Q02	229%
4Q02	227%
1Q03	216%
Eagle Butte	
1Q02	236%
2Q02	234%
3Q02	232%
4Q02	230%
1Q03	217%

BNSF's variable cost evidence is supported by the testimony of five witnesses. Three witnesses -- Messrs. Richard C. Ellis, BNSF's Assistant Vice President, Unit Train Operations, Howard A. Tait, BNSF's Trainmaster at Forsyth, MT, and Wilbert Kissner, BNSF's

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Trainmaster at Aberdeen, SD -- describe the operating parameters of the issue traffic movement as background for the calculation of variable costs. Messrs. Benton V. Fisher and Robert J. Plum, III, Directors at FTI Consulting, Inc. ("FTI"), are BNSF's principal variable-cost witnesses in this proceeding and describe in detail the bases for BNSF's calculation of variable costs.

The methodologies used by BNSF to calculate variable costs are described in detail in Section II.A.1 of the Narrative and do not need to be addressed further here. BNSF's variable cost calculation relies on several movement-specific adjustments to BNSF's system-average costs. Those adjustments are based on special studies involving the issue traffic and are described in detail in Section II.A.1 of the Narrative.

The remainder of BNSF's Opening Evidence is intended to provide the legal and factual context in which the Board should assess BNSF's variable cost evidence.

C. THE R/VC RATIOS FOR THE TRANSPORTATION AT ISSUE ARE CONSISTENT WITH THE GOAL OF REVENUE ADEQUACY AND THE POLICY PROMOTING DEMAND-BASED PRICING THAT UNDERLIE THE BOARD'S RATE REASONABLENESS STANDARDS

BNSF presents evidence in Section II.A.3 of this Narrative that provides the Board with a context in which to evaluate BNSF's evidence on the variable costs and R/VC ratios for the issue traffic service. BNSF acknowledges that the variable costs of the issue traffic movement under the challenged rates exceed the 180% jurisdictional threshold of revenue to variable costs. However, the fact that the challenged rates exceed the jurisdictional threshold is not a basis for presuming that they are unreasonably high. 49 U.S.C. §10707. Congress, the ICC and the Board have all recognized that railroads must be permitted to engage in differential pricing if they are to achieve and sustain revenue adequacy. BNSF demonstrates in Section

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II.A.3 of this Narrative that the challenged rates are well within the range of differential prices that is both permitted and expected under the *Coal Rate Guidelines, Nationwide*, 1 I.C.C. 2d 520 (1985)(“ *Guidelines*”).

In adopting Constrained Market Pricing (CMP) in the *Guidelines* as the basis for regulating railroad rates, the ICC endorsed differential pricing by railroads. The ICC recognized that railroads face competition for the vast majority of their shipments and that a railroad’s marginal cost of providing service on many movements is lower than the “average” cost (assuming some allocation of unattributable costs to all shippers). Competition forces railroads to price many of their shipments at levels that do not enable the railroad to recover a substantial portion of unattributable costs from those movements. The ICC concluded, therefore, that “the cost structure of the railroad industry necessitates differential pricing of rail services.” *Coal Rate Guidelines*, 1 I.C.C. 2d at 526. In other words, because shippers with competitive options do not pay enough to contribute significantly to the coverage of unattributable costs, other shippers with fewer or no competitive options must pay more.³ Only by charging some shippers higher rates could a railroad cover its full costs.

The ICC further concluded, based on an economic theory known as “Ramsey pricing,” that the least economically inefficient method of recovering all costs is to charge shippers with the strongest (most inelastic) demand the proportionately highest rates. As the ICC explained:

³ Shippers who bear a higher proportion of costs nonetheless benefit from the presence of shippers who pay a lower proportion. Such shippers contribute, albeit modestly, to covering the fixed costs of the railroad, and therefore reduce the overall cost borne by relatively demand inelastic shippers.

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The unattributable costs are allocated among the purchasers or users in inverse relation to their demand elasticity. Thus, in market [*sic.*] where shippers are very sensitive to price changes (a highly elastic market), the mark-up would be smaller than in a market where shippers are less price sensitive.

Coal Rate Guidelines, 1 I.C.C. 2d at 526-27. Moreover, “[a]ny means of allocating these costs among shippers other than actual market demand is arbitrary and may not permit a carrier to cover all of its costs.” *Id.* at 526.

The challenged rates in this case must be assessed in light of this forceful endorsement of differential pricing underlying the Board’s rate reasonableness standards. As BNSF’s witness Kenneth Slater testifies, Otter Tail’s demand for coal transportation to Big Stone is inelastic. Mr. Slater demonstrates that Big Stone has consistently sold a significant proportion of its generation into wholesale power markets and continues to do so at undiminished levels despite a substantial increase in its delivered coal costs – due primarily to higher f.o.b. mine prices – at the beginning of 2002. Big Stone’s demand for coal, and coal transportation, is unresponsive to changes in the delivered cost of coal in the range of current costs and is, therefore, inelastic by definition. Indeed, it is ironic that Otter Tail is seeking Board intervention to regulate BNSF’s allegedly unreasonable rates for coal transportation when the predominant cause of Otter Tail’s increased delivered cost of fuel was the increase in *unregulated* prices for coal that Otter Tail contracted to pay the mines. Otter Tail appears to have determined that it can compensate for the higher coal costs resulting from its short-term coal contracting strategy by convincing the Board to impose an inappropriate cap on BNSF’s transportation rates.

ICC and Board precedent provide that the Board’s assessment of the challenged rail rates under the SAC test should approximate Ramsey outcomes. *See Coal Rate Guidelines*, 1 I.C.C. 2d at 527, 534. Therefore, consistent with the Ramsey pricing principles embodied in

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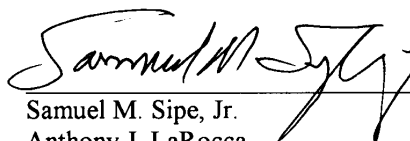
the *Coal Rate Guidelines*, BNSF should be permitted to charge relatively high rates for transportation of coal to Big Stone that reflect Big Stone's inelastic demand. Such higher rates would be reflected in R/VC ratios significantly in excess of the jurisdictional threshold of 180 percent. Since the objective of Ramsey pricing is the full recovery of costs from shippers in an economically efficient manner, *id.* at 527, the Board should not be troubled that the rate charged to Otter Tail, a highly demand-inelastic shipper, yields R/VC ratios in the range of 220-235 percent. Given the Board's recent determination that BNSF would need to earn average revenues of 289 percent of its variable cost on traffic that generates revenue in excess of 180 percent of variable cost in order to cover all of its costs, the rates at issue here are well within the reasonable range of permissible differential prices.⁴

The Board is required by statute to take account of a railroad's need to earn adequate revenues as part of its regulation of railroad rates. *See* 49 U.S.C. §§ 10701(d)(2), 10704(a)(2). The demand-based pricing principle underlying the *Guidelines* recognizes that a railroad can be expected to recover its full costs and become revenue adequate only by charging higher rates to shippers with inelastic demand. The Board would fail to give effect to the statutory revenue adequacy policy if it prohibits railroads from charging rates that are significantly in excess of the jurisdictional threshold to demand-inelastic shippers.

⁴ *Rate Guidelines – Non-Coal Proceedings*, STB Ex Parte No. 347 (Sub-No.2)(served Apr. 21, 2003).

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Respectfully submitted,



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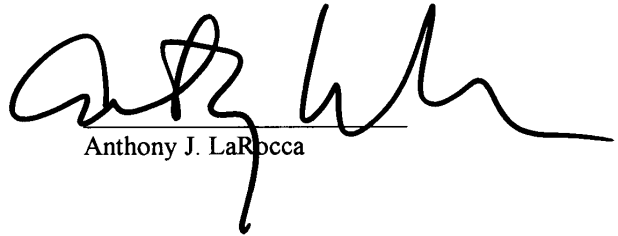
June 13, 2003

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CERTIFICATE OF SERVICE

I hereby certify that on June 13, 2003, I caused three copies of the foregoing
Opening Evidence of The Burlington Northern and Santa Fe Railway Company to be served by
hand upon the following counsel for Otter Tail Power Company:

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**II-A. Market Dominance-
Quantitative Evidence**

II. MARKET DOMINANCE

A. QUANTITATIVE EVIDENCE

In this section of the Narrative, BNSF presents the variable costs that BNSF incurs to transport coal from the Belle Ayr and Eagle Butte mines within the Wyoming Powder River Basin ("PRB") to Otter Tail's Big Stone Generating Station ("Big Stone") near Big Stone City, South Dakota.

The variable cost evidence presented in this Narrative is supported by Richard C. Ellis, Wilbert Kissner, Howard A. Tait, Benton V. Fisher, and Robert J. Plum, III. The qualifications and verifications of each witness, which are set out in Section IV to this Narrative, describe the portions of this Narrative that are sponsored by each witness. Briefly, Mr. Ellis is the Assistant Vice President, Unit Train Operations for BNSF, with responsibility for unit coal train operations in the PRB. He has been involved in operations at BNSF and its predecessor for three decades. Mr. Kissner is the Trainmaster at Aberdeen, South Dakota and Mr. Tait is the Trainmaster at Forsyth, Montana. In Section II.A.1.a., Messrs. Ellis, Kissner, and Tait provide operational information relevant to the determination of variable costs for the issue traffic. Messrs. Fisher and Plum are Directors at FTI Consulting, Inc. ("FTI") and specialize in the economic and financial analysis of network industries, including rail transportation. Messrs. Fisher and Plum are BNSF's principal variable cost witnesses in this proceeding.

1. Variable Costs

As explained above in the Counsel's Argument, Otter Tail challenges the reasonableness of the transportation rates published in CCPA-BNSF 90062, which became

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effective on January 1, 2002.¹ CCPA-BNSF 90062 establishes transportation rates from mines in the PRB to Big Stone. Most of the Otter Tail movements under the challenged rate originated at the Belle Ayr and Eagle Butte mines. Consequently, BNSF presents variable cost evidence for shipments from Belle Ayr and Eagle Butte.² Further, CCPA-BNSF 90062 provides separate rates for movements in shipper-supplied steel cars ("Steel Car Rate") and shipper-supplied aluminum cars ("Aluminum Car Rate"), respectively. Since the challenged rates became effective, no shipments have moved under the Steel Car Rate and, therefore, there are no data available from which to develop variable costs for shipments under the Steel Car Rate. Accordingly, BNSF presents variable cost evidence for the Aluminum Car Rate only.

To develop BNSF's variable costs of service to Big Stone, Messrs. Fisher and Plum relied on procedures that have been adopted by the Surface Transportation Board ("STB" or "Board") and on BNSF 2002 Uniform Rail Costing System ("URCS") unit costs developed using standard Board procedures and publicly available documents.³ Where appropriate data were available, Messrs. Fisher and Plum incorporated the results of movement-specific adjustments in lieu of BNSF system-average costs, based on actual traffic and operations data for

¹ BNSF.OP.WP.II.A-0005 to 0012. CCPA-BNSF 90062 was amended by CCPA-BNSF 90062-A, effective January 1, 2003.

² In Fourth Quarter 2002, three Otter Tail trains originated at Caballo Rojo and one Otter Tail train originated at Cordero. BNSF.OP.WP.II.A-0018 to 0021 and electronic workpaper "opstats.xls." Because so few Otter Tail trains originated at these two PRB origins (accounting for only two percent of the traffic moving under the challenged rates), and the data associated with these movements are limited, BNSF has not developed variable costs for these PRB origins.

³ Consistent with Board precedent, Messrs. Fisher and Plum adjusted the 2002 URCS data to include Account 90 and exclude Account 76. This adjustment is discussed in Section II.A.1.c. below and Exhibit II.A-4.

the Big Stone movement that are maintained by BNSF. Table II.A-1 summarizes the variable costs per ton and revenue-to-variable-cost ratios ("R/VC") by quarter for the Otter Tail traffic moving under the challenged Aluminum Car Rates.⁴

Table II.A-1
Variable Costs and R/VC Ratios
For Shipments from Belle Ayr and Eagle Butte to Big Stone

	Aluminum Car Rate		
	Rate	Variable Cost	R/VC
<i>Belle Ayr</i>			
1Q02	\$13.49	\$5.81	2.32
2Q02	\$13.49	\$6.03	2.24
3Q02	\$13.49	\$5.90	2.29
4Q02	\$13.49	\$5.95	2.27
1Q03	\$13.76	\$6.37	2.16
<i>Eagle Butte</i>			
1Q02	\$13.49	\$5.71	2.36
2Q02	\$13.49	\$5.76	2.34
3Q02	\$13.49	\$5.82	2.32
4Q02	\$13.49	\$5.85	2.30
1Q03	\$13.76	\$6.35	2.17

Source: Exhibit II.A-1 and electronic workpaper "BNSF OTP OPEN PRG.123"

The variable-cost evidence is presented in the following sequence. Section II.A.1.a. describes the operational background of the issue movement. Section II.A.1.b. identifies the specific traffic and operating characteristics that underlie Messrs. Fisher and Plum's variable cost calculations. Section II.A.1.c. explains the methodologies used to calculate the various components of variable costs and describes the movement-specific adjustments employed (in lieu of system-average data) to reflect more accurately the variable costs of the

⁴ Exhibit II.A-1 presents the detailed variable costs and electronic workpaper "BNSF OTP OPEN PRG.123" presents the underlying calculations.

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issue traffic service. Finally, Section II.A.2 presents the variable costs and R/VC ratios for First Quarter 2002 through First Quarter 2003.

a. Operational Background: The Otter Tail Train Movement

(1) Route Description

The movements at issue in this case are covered by CCPA-BNSF 90062. That Authority refers to unit train transportation of coal originating at thirteen mines in the Southern Powder River Basin in Wyoming to the Big Stone Generating Station near Big Stone City, South Dakota on the Minnesota border.⁵ Since CCPA-BNSF 90062 became effective, however, Otter Tail has sourced the vast majority of its coal from two mines, Belle Ayr and Eagle Butte. From these origins, the Big Stone trains travel to Gillette, Wyoming, and then north from the PRB to Jones Junction, Montana. From Jones Junction, the Big Stone trains travel northeast to Terry, Montana, and then east through Hettinger, North Dakota and Aberdeen, South Dakota to the destination, the Big Stone Generating Station, which is located on a spur track off the BNSF mainline at MP 602.31 of the Appleton Subdivision. The route from Terry, Montana to Big Stone is over low density and speed-restricted trackage that consists largely of seasonal grain traffic. Returning empty trains generally follow the same route of movement in reverse. A map of this route is attached as Exhibit II.A-2.

⁵ Attachments A to CCPA-BNSF 90062 and its amendment CCPA-BNSF 90062-A identify the following PRB mine origins: Buckskin, Rawhide, Eagle Butte, Dry Fork, Fort Union, Clovis Point, Caballo, Belle Ayr, Caballo Rojo, Cordero, Coal Creek, Jacobs Ranch, and Black Thunder. BNSF.OP.WP.II.A-0008 and 0012.

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(2) Crews

Mr. Ellis describes the crews and crew change locations for operating the Big Stone trains. To begin the movement, BNSF generally uses a loading crew based in Gillette, Wyoming. This crew consists of three persons -- an engineer, a conductor, and a brakeman. The loading crew moves the empty train from Gillette to either the Belle Ayr or Eagle Butte mine for loading. At Belle Ayr, the Gillette crew normally loads the train and then, if time permits before the crew will reach its hours-of-service limit, takes the loaded train to Gillette. If the loading crew is at or near its hours-of-service limit, a second BNSF loading crew will be called to relieve the first crew who will return by crew van to Gillette.

At Eagle Butte, the Gillette crew hands the train off to the third party loading crew that BNSF pays to load the train. After the train has been loaded, the third party loading crew will hand the train off to a Gillette-based BNSF loading crew at the mine. The BNSF loading crew then takes the loaded train to Gillette.

Over the issue route, Otter Tail trains generally use two-person road crews that are comprised of an engineer and a conductor. In addition to the crew changes at the mine described above, crew changes normally occur at Gillette, Wyoming; Sheridan, Wyoming; Forsyth, Montana; Hettinger, North Dakota; and Aberdeen, South Dakota.

Because no crews are based at Hettinger, BNSF generally must "dead-head"⁶ crews between Hettinger and their home bases. In the loaded direction, BNSF frequently must dead-head back to Forsyth the Forsyth-based crews that worked the loaded train to Hettinger and

⁶ The term "dead-head" refers to the transportation of a crew from an off-duty point that is not a crew terminal, back to the crew's off-duty crew terminal (often its home terminal). Frequently, a dead-head crew is transported via another train, rather than by vehicle.

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also dead-head to Hettinger the Aberdeen-based crews to work the Otter Tail trains from Hettinger to Aberdeen.⁷ In the empty direction, BNSF frequently must dead-head back to Aberdeen the Aberdeen-based crews that worked the Otter Tail train to Hettinger and also dead-head to Hettinger the Forsyth-based crews to work the trains from Hettinger to Forsyth.

Except for the Aberdeen-based crews transporting the train to and from the Big Stone plant, the road crews operate in “straight-away” service.⁸ Under optimal conditions, the Aberdeen-based crew that takes the train east to the plant can complete the round-trip from Aberdeen to Big Stone and back to Aberdeen. Frequently, however, the first crew must be relieved because it has reached its hours-of-service limit. If a crew is at or near its hours-of-service limit, it will be replaced. The relief crew may be either a three person *road-switcher* crew consisting of a brakeman, conductor, and engineer, or a two person *road crew* consisting of an engineer and conductor. The type of relief crew utilized depends on the time of day and the location where the Otter Tail train’s crew will “outlaw.”⁹ If the crew outlaws between 8:00 AM and 5:00 PM and is within 40 miles of Aberdeen, the road-switcher crew usually travels by crew van from Aberdeen to the empty coal train and operates it back to Aberdeen. If the crew outlaws between 5:00 PM and 8:00 AM, or is more than 40 miles from Aberdeen, a road crew usually travels by crew van from Aberdeen to the train, completes the unloading process if needed, and

⁷ Exhibit II.A-2 presents the route of movement for the Otter Tail trains.

⁸ A train crew operating in “straight-away” service goes on duty in one location and off duty at a different location.

⁹ “Outlaw” is the term given to train crews that have reached the 12-hour limit of work permitted by the Federal Hours-of-Service law. See 49 USC § 21103(a).

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operates the empty train back to Aberdeen. In all cases, the road crew that is relieved returns to Aberdeen in the crew van.

As described below, the empty Otter Tail train is serviced at Aberdeen. In some cases, this servicing is performed by the outbound road crew at Aberdeen. Once the Aberdeen outbound road crew has serviced the train, the crew must have a minimum of 6.5 hours of available time during its tour of duty to reach Hettinger. If this crew has less than 6.5 hours remaining, an additional crew will be needed to transport the train between Aberdeen and Hettinger.

(3) Train Operations

(a) Providing Locomotives to Power the Otter Tail Trains

Because the Otter Tail route does not pass through any of BNSF's major locomotive maintenance facilities, an Otter Tail locomotive is changed out en-route when it is due for inspection or requires repair. Typically, this change-out occurs at Forsyth, Montana, but may also occur at Gillette, Wyoming; Sheridan, Wyoming, or elsewhere along the route between the PRB origins and Terry, Montana. To accomplish the change-out at Forsyth (or other locations), generally, a coal pool locomotive that has been inspected or repaired at Glendive (or Alliance, if the change-out is to be at Gillette or Sheridan) is placed on an empty train that is departing from Glendive for return to the PRB. When the empty train arrives at Forsyth, the replacement locomotive is set out to await the Otter Tail train. When the Otter Tail train arrives at Forsyth, the outbound crew cuts out the locomotive in need of inspection or repair from the Otter Tail train, and then switches in the replacement locomotive. The locomotive in need of inspection or repair that was changed out of the Otter Tail train is then subsequently switched

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onto another train traveling through Forsyth to Glendive, where the locomotive is set out for inspection and/or repair.¹⁰ Howard A. Tait, BNSF's Trainmaster at Forsyth, explains that it takes a minimum of 30 minutes to switch out the replacement locomotive arriving from Glendive and another 30 minutes to switch the locomotive in need of inspection or repair onto a train destined for Glendive. Mr. Tait also explains that it takes a minimum of 90 minutes to switch out of the Otter Tail train the locomotive that is in need of inspection or repair and switch into the Otter Tail train the replacement locomotive.¹¹ Richard C. Ellis explains that it takes on average 15 minutes for an outbound road crew at Glendive to move the replacement locomotive from the repair shop and switch it into an outbound train traveling to Forsyth and another 15 minutes for an inbound road crew to remove the former Otter Tail locomotive from an inbound train at Glendive and move it to the repair shop.¹²

(b) Operations at Aberdeen

Bill Kissner, BNSF's Trainmaster at Aberdeen, explains that when the loaded Otter Tail train arrives at Aberdeen, any loaded Otter Tail cars that had been bad ordered on a prior train, repaired and delivered to Aberdeen in general freight train service, will be added to the Otter Tail train. Since this activity occurs infrequently, BNSF has not included any associated switching time. Loaded bad order cars may be removed at any location along the

¹⁰ Although the explanation is provided for repositioning units between the locomotive facility at Glendive and the Otter Tail train at Forsyth, the same scenario is performed between the locomotive facility at Alliance and Otter Tail change-outs at Gillette and Sheridan.

¹¹ The minimum time it takes to perform these switching activities is the same at Gillette and Sheridan.

¹² It also takes 15 minutes to perform these same activities at Alliance.

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route and, after being repaired, will be moved to Aberdeen where they will be added to a loaded Otter Tail train. On occasion, the locomotives will receive additional fuel at Aberdeen to enable the train to make the round trip from Aberdeen to Big Stone to Aberdeen. If operating conditions require, additional locomotives will be added at Aberdeen in order to operate the loaded train from Aberdeen over Summit Hill (MP 733) to Big Stone.

The empty Otter Tail train is serviced at Aberdeen. Both head-end and “DP”¹³ locomotives are switched to the service track for fueling, sanding, and servicing. Next, the inspectors blue flag the track and inspect the train.¹⁴ The inspectors identify which cars can be repaired in place and which cars will need to be switched to the “RIP”¹⁵ track for repairs. Otter Tail shipments moving under the challenged rates average 4.3 bad order cars per train.¹⁶

According to Mr. Kissner, the switching of bad order cars is accomplished either by a three-person road-switcher crew or a two-person outbound road crew depending on the time of day that the empty Otter Tail train arrives. Approximately 70 percent of the time the road-switcher crew works the empty train upon its arrival. The road switcher will remove the bad-order cars from the Otter Tail train after the blue flags have been removed, place the bad orders on the RIP track, and switch the serviced DP unit to the rear of the train. Depending on the

¹³ “DP” refers to a “Distributed Power” configuration where locomotives at the rear of the train are operated remotely.

¹⁴ “Blue flag” is the term used to indicate that a track has been temporarily removed from service so that car inspectors can work on equipment located on the track. While blue flags are placed between the rails at each end of a cut of cars, no cars or locomotives can be placed on or removed from that track.

¹⁵ A RIP track is a track where cars are repaired. “RIP” is the acronym for “Repair In Place.”

¹⁶ Electronic workpaper “2002-2003 Bad Orders.xls.”

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quantity and location of cars that need to be removed from the train, the road-switcher will require approximately 90 minutes per train to complete this work.

However, if the road-switcher crew is unavailable to perform these tasks, switching of bad-order cars from the train, transferring them and placing them on the RIP track, and adding the DP unit to the end of the train will be completed by a two-person outbound road crew. Generally, it takes the two-person road crew 15 minutes longer than it takes a three person road-switcher crew to perform the same switching activities.

After the DP unit has been attached, the outbound crew takes a serviced locomotive to the coal car spare track, collects the requisite number of fill cars that will bring the empty train to its ideal tender, and places them on the Otter Tail train. According to Mr. Kissner, these activities take on average 45 minutes per train to perform.¹⁷

(c) Operations at Big Stone

At Big Stone, a loaded train exits the mainline onto a spur track leading to the loop track at the plant. The switch for the spur off of the mainline is operated remotely by a BNSF dispatcher in Fort Worth. At the loop track there is a manual hydraulic switch, which must be lined for the train to move in a clockwise direction around the loop track. On arrival, the loop-track switch is lined either by Otter Tail or BNSF personnel.

Upon arrival at the coal dumper, the BNSF road crew continues to control the train while the first two cars are unloaded. After the first two cars are unloaded, the BNSF crew

¹⁷ If an outbound crew must switch out bad ordered cars and connect the DP unit (as well as collect the head-end locomotives from the fueling facility and fill cars from the spare track) and this work exceeds 5.5 hours (including 2.5 hours for the car inspectors to inspect the train under blue flag conditions), the crew will not be able to take the train to Hettinger before it outlaws, so a new outbound crew will be called.

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engages the dumper's indexer arm (which then controls the unloading process) and isolates the rear locomotive remotely from the lead locomotive. Because the loop track is on a grade, the engineer periodically must add independent air to the train to prevent the train from rolling and damaging the indexer arm. When the last car has been dumped, the indexing system is disengaged and the BNSF road crew resumes control of the train.¹⁸ After obtaining permission from the Fort Worth dispatcher, the empty train enters the BNSF mainline and returns to Aberdeen.

(d) Operations over Rhame Hill

On occasion, a loaded Otter Tail train must be broken in two to traverse the steep grade at Rhame Hill. This process is termed "doubling." Rhame Hill, which is located between mileposts 994 and 981 on the Hettinger Subdivision, has a ruling grade of 1.5 percent and five miles of approximately 1.0 percent grade.¹⁹ Under certain operating conditions, such as when a locomotive is not able to contribute full power or inclement weather, a loaded Otter Tail train will stall on this hill even though it is powered by three SD70MACs operating in Distributed Power configuration. When a train stalls, the crew will divide the train into two sections and take one section at a time over the hill. Once both sections of the train are over the hill, the crew reassembles the train. The BNSF Train Activity Reports made available to Otter Tail in discovery indicate that it takes between 3 and 4.5 hours to break the train apart, traverse Rhame Hill, and reassemble the train on the other side.²⁰ When doubling is required, the road crew

¹⁸ The train remains in DP configuration during the unloading process at Big Stone.

¹⁹ BNSF.OP.WP.II.A-0070 to 0078.

²⁰ Electronic workpaper "Rhame Hill.xls."

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typically will “outlaw” before it can reach Hettinger, and a second road crew must be transported by van to the train to relieve the first crew.

(e) Operations at Hettinger

Switching may also be required at Hettinger in order to avoid blocking multiple at-grade public crossings. When the loaded Otter Tail train arrives at Hettinger for the crew change, it blocks a state highway crossing west of Hettinger. When the empty Otter Tail train comes to rest at Hettinger, it blocks two to three grade crossings.²¹ If BNSF anticipates that the Otter Tail train will be stopped at Hettinger for more than 10 minutes, the inbound road crew must break the train into sections in the loaded direction as well as in the empty direction to clear the grade crossings. Prior to departure the outbound road crew must reassemble the train. According to Mr. Kissner, these switching activities (breaking the train and reassembling the train) take on average a total of 90 minutes – 45 minutes to separate and secure the train and another 45 minutes to reassemble it. If the train has been separated for more than 4 hours, the crew must also perform a full initial terminal air brake test before departing Hettinger, requiring an additional 75 minutes to complete.

(4) Helper Services

All loaded Otter Tail trains require helper service at two locations. If the coal originates at Belle Ayr, the train is helped by the Belle Ayr helper. If the coal originates at Eagle Butte, the train is helped by the Campbell helper. In both cases, the Big Stone train is also helped by the Sheridan helper. The relevant helper locations are identified on Exhibit II.A-2.

²¹ The crossings are Golf Course, Gommer, and, in certain months, Foot, which provides access to a recreation area that is used principally in the summer. Electronic workpaper “Hettinger.ppt.”

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Each of these helpers uses a two-person crew and is described more fully below, based on the materials produced to Otter Tail in discovery.²²

(a) Campbell Helper

Otter Tail trains that load at Eagle Butte receive assistance from the Campbell helper. The Campbell helper is placed on the train as the loaded train departs the mine and is usually removed at Campbell for an average one-way distance of 9.5 miles. The Campbell helper uses one SD70MAC locomotive.

(b) Belle Ayr Helper

Otter Tail trains that load at Belle Ayr receive assistance from the Belle Ayr helper. The helper unit is placed on the train as the loaded train departs the mine and is removed when the train crests the hill at Whitetail for an average one-way distance of 8.2 miles. This helper has a locomotive consist of one SD70MAC locomotive.

(c) Sheridan Helper

Loaded Otter Tail trains are assisted by the Sheridan helper (also referred to as the Parkman helper) from Clearmont to Parkman (MP 660.5 to MP 724), a one-way distance of 63.6 miles. This helper has a locomotive consist of one SD40-2 locomotive and one SD60M locomotive.

²² BNSF/OTP 04135 to 04136, included as BNSF.OP.WP.II.A-0014 to 0015.

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b. Traffic And Operating Characteristics Of The Otter Tail Movement

Since the challenged rate went into effect on January 1, 2002, two mines have originated the vast majority of coal for Big Stone, Belle Ayr and Eagle Butte.²³ In this narrative, BNSF develops variable costs for movements from the Belle Ayr and Eagle Butte mines each quarter from First Quarter 2002 through First Quarter 2003. The traffic and operating statistics that were used to develop the BNSF variable costs of serving the Big Stone plant are set forth below.

In *Potomac Electric Power Co. v. Consolidated Rail Corp.* (“PEPCO”),²⁴ the Interstate Commerce Commission outlined the “cost-related evidentiary requirements” required to complete the variable cost record in a coal rate proceeding. This *PEPCO* decision also required that the relevant operating characteristics be presented in tabular form. Table II.A-2 presents the characteristics used to develop BNSF’s variable costs for Fourth Quarter 2002, and Exhibit II.A-3 presents the characteristics for each quarter. As required by *PEPCO*, a narrative description of each item follows the table and explains the source of the data.

Table II.A-2
Traffic and Operating Characteristics
For Shipments from Belle Ayr and Eagle Butte to Big Stone, 4Q02

Item	Aluminum Car Rate
1. Name of origin mines	Belle Ayr, WY Eagle Butte, WY
Name of destination	Big Stone, SD
2. Milepost(s) at origin	Belle Ayr MP 16.0 Eagle Butte MP 9.5

²³ As described above in footnote 2, these two mines have originated 98 percent of the Big Stone traffic moving under the challenged rates. Electronic workpaper “opstats.xls.”

²⁴ Docket No. 36114 (Sub-No. 1), served April 7, 1982.

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Milepost at destination	Big Stone MP 602.31
3. Annual tons	1.97 million in 2002
4. Date of first shipment	January 1, 2002
5. Alpha-numeric car type	Plain Gondolas (AAR Code J)
6. Weight of lading per car (in tons)	Belle Ayr 119.8 tons Eagle Butte 119.7 tons See Table II.A-4 Below
7. Tare weight per car (in tons)	21.6 tons
8. Identity of car owner	Otter Tail
9. Identity of locomotive owner	BNSF
10. Car lease rental (railroad supplied cars)	N/A
11. Locomotive lease rental	See Below
12. Present rates per net ton	\$13.76 per net ton / Aluminum
13. Proposed rate	See Below
14. Initial rate and effective date	\$13.49 per net ton / January 1, 2002
15. Amounts (or percent) of rate escalation and date	See Below
16. Cars per train or per shipment	Belle Ayr 116.9 cars Eagle Butte 117.0 cars See Table II.A-5 Below
17. Loaded miles (excluding loop track)	Belle Ayr 908 miles Eagle Butte 900 miles
18. Empty miles	Same as loaded miles
19. Length of origin loop track	Belle Ayr 0.8 Loaded 1.0 Empty Eagle Butte 3.3 Loaded 4.3 Empty
20. Length of destination track	3.7 Loaded 3.0 Empty
21. Number of locomotive units	Belle Ayr 3.14 units Eagle Butte 3.03 units See Table II.A-7 Below
22. Loading hours	Included in Item 24
23. Unloading hours	Included in Item 24
24. Cycle hours	Belle Ayr 108 hours Eagle Butte 106 hours See Table II.A-8 Below

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25.	Number of train sets	N/A
26.	Trips/year per train set	N/A
27.	Crew districts, loaded	See Below
28.	Crew districts, empty	See Below
29.	Turnaround crews	Gillette-Gillette (BNSF loading crews) Aberdeen-Aberdeen
30.	Locomotive units required	See Below
31.	Cars required (RR-supplied)	N/A
32.	Cabooses	N/A
33.	Locomotive spare margin	{ } percent
34.	Car spare margin	N/A
35.	Switching by road haul locomotives	268 minutes
36.	Switching by yard locomotives	N/A
37.	Helper service	<u>Belle Ayr</u> Belle Ayr & Sheridan <u>Eagle Butte</u> Campbell & Sheridan
38.	Helper crew	See Below
39.	Location of interchanges	None
40.	Location of inter- and intratrain switches	Aberdeen
41.	Joint facility payments	System-Average

(1) Name of mines and power plant

The Belle Ayr and Eagle Butte mines originated virtually all of the coal destined to Big Stone moving under the challenged rate.²⁵ Since the challenged rates became effective on January 1, 2002, one shipment originated from Cordero mine and three shipments originated from Caballo Rojo mine. All four of these movements occurred in the Fourth Quarter of 2002. In light of the exceptional nature of these moves and the limited data associated with them, BNSF does not present variable cost evidence for these movements.

²⁵ BNSF.OP.WP.II.A-0018 to 0021 and electronic workpaper "opstats.xls."

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The destination is the Big Stone Generating Station near Big Stone City, South Dakota.

(2) Milepost at origins; milepost at destination

Table II.A-3 presents the mileposts for the origin mines and the turnout at Big Stone, as identified from track charts BNSF produced in discovery. The Big Stone plant is located on a spur track 2.45 miles from the BNSF mainline.²⁶

Table II.A-3
PRB Mine Origins and Otter Tail Plant Destination

Rail Facility	BNSF Subdivision	BNSF Station	Milepost
Eagle Butte Mine, WY	Campbell	Eagle Butte Jct.	9.5
Belle Ayr Mine, WY	Orin	Caballo Jct. South	14.8
Big Stone Plant, SD	Appleton	Big Stone	602.31

Source: BNSF track charts (BNSF/OTP 00036) included as electronic workpapers "Orin.pdf," "Campbell.pdf," and "Appleton.pdf"

(3) Annual tons

CCPA-BNSF 90062 and 90062-A include a minimum annual tonnage requirement of 1.80 million tons per year. In 2002, BNSF transported 1.97 million tons to Big Stone.²⁷

(4) Date of first shipment

The first train to move under the challenged rate was waybilled on January 1, 2002.²⁸

²⁶ BNSF.OP.WP.II.A-0026.

²⁷ Electronic workpaper "opstats.xls."

²⁸ Electronic workpaper "opstats.xls."

(5) Alpha-numeric car type

According to data produced by BNSF in discovery, the freight cars used in Big Stone service during the First Quarter 2002 through the Fourth Quarter 2002 were virtually all AAR Car Type Code J311, plain aluminum gondolas.²⁹ BNSF's variable costs for First Quarter 2003 assume that Otter Tail trainsets continue to use this same car type.

(6) Lading weight per car

Messrs. Fisher and Plum developed the average lading per car for the shipments to Big Stone from freight bills.³⁰ Table II.A-4 presents the average lading weights and origin mine by quarter.

Table II.A-4
Average Lading Weights Per Carload

Mine	1Q02	2Q02	3Q02	4Q02	1Q03
Belle Ayr	117.9	121.0	121.0	119.8	116.5
Eagle Butte	118.0	120.9	121.1	119.7	115.1

Source: BNSF.OP.WP.II.A-0017 and electronic workpaper "opstats.xls"

(7) Tare weight of car

Like lading weights, Messrs. Fisher and Plum developed the average tare weight from freight bills. The average tare weight, 21.6 tons, was the same for each quarter and for Belle Ayr and Eagle Butte shipments.³¹

²⁹ Electronic workpaper "Otter Tail Cars.xls."

³⁰ Electronic workpapers "Freight Bills.pdf" and "opstats.xls."

³¹ Electronic workpaper "opstats.xls."

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(8) Identity of car owner

CCPA-BNSF 90062 and 90062-A specify that Otter Tail will provide the rail cars used to transport coal to Big Stone.

(9) Identity of locomotive owner

BNSF provides the locomotives used to move the Big Stone coal trains. *See* Item 21.

(10) Car lease rental

Not applicable.

(11) Locomotive lease rental

BNSF acquired the locomotives used to power Big Stone coal trains through purchases and operating leases. Messrs. Fisher and Plum used detailed accounting data produced by BNSF in discovery to calculate locomotive ownership costs.³² The calculation of the costs is described below in section II.A.1.c.(16).

(12) Present rate

CCPA-BNSF 90062-A established a rate of \$13.76 per net ton for movements in shipper-supplied aluminum cars and \$14.51 per net ton for movements in shipper-supplied steel cars.³³ BNSF applied those rates to all Big Stone shipments effective January 1, 2003.

(13) Proposed rate

See Item 12.

³² BNSF.OP.WP.II.A-0042 and electronic workpaper "OTP Loco Ownership.xls."

³³ BNSF.OP.WP.II.A-0005 to 0012.

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(14) Initial rate and effective date

CCPA-BNSF 90062 established a rate of \$13.49 per net ton for movements in shipper-supplied aluminum coal cars and \$14.23 per net ton for movements in shipper-supplied steel cars.³⁴ BNSF applied that rate to all Big Stone shipments from January 1, 2002 through December 31, 2002.

(15) Amounts (or percent) of rate escalation

The rates provided for in CCPA-BNSF 90062 were in effect for one year from January 1, 2002 through December 31, 2002 and were not escalated during that year. The rates provided for in CCPA-BNSF 90062-A are effective until “changed, superceded or cancelled” and are not subject to escalation during that time period.³⁵

(16) Cars per train

CCPA-BNSF 90062 and 90062-A specify a minimum of 115 cars per train. Messrs. Fisher and Plum developed the average number of cars per train for shipments to Big Stone from freight bills.³⁶ Table II.A-5 presents the average number of cars per train by origin mine and quarter.

Table II.A-5
Average Number of Cars Per Train

Mine	1Q02	2Q02	3Q02	4Q02	1Q03
Belle Ayr	115.5	116.9	116.9	116.9	116.5
Eagle Butte	116.8	116.8	117.0	117.0	115.2

Source: BNSF.OP.WP.II.A-0017 and electronic workpaper “opstats.xls”

³⁴ BNSF.OP.WP.II.A-0005 to 0012.

³⁵ BNSF.OP.WP.II.A-0010.

³⁶ Electronic workpapers “Freight Bills.pdf” and “opstats.xls.”

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(17) Loaded miles

The distances on BNSF track from the PRB mines to Big Stone are 908 miles for Belle Ayr and 900 miles for Eagle Butte.³⁷

(18) Empty miles

As BNSF Assistant Vice President, Unit Train Operations Richard C. Ellis explains above in section II.A.1.a.(1), the Otter Tail trains return from Big Stone to the mines via the loaded route. Consequently, Messrs. Fisher and Plum use the distances presented in Item 17 for the empty miles to calculate variable costs.

(19) Length of origin loop track

Each origin load-out has a loop track that is owned by the mine. Table II.A-6 presents the empty miles at the origin (the miles the empty train travels from the division of ownership with BNSF-owned track to the load-out) and loaded miles at the origin (the miles the loaded train travels from the load-out back to BNSF-owned track) for each mine. These distances were developed from schematic diagrams accompanying the track charts that BNSF produced to Otter Tail in discovery.³⁸ Because the origin loop tracks are mine-owned, the mileages are not included in the totals listed in Item 17.

Table II.A-6
Origin Loop Track Mileages

Origin Mine	Empty Miles	Loaded Miles
Belle Ayr	1.0	0.8
Eagle Butte	4.3	3.3

Source: Electronic workpaper "vc network.xls"

³⁷ BNSF.OP.WP.II.A-0025 and electronic workpaper "vc network.xls."

³⁸ BNSF/OTP 00036, included as electronic workpapers "Orin.pdf" and "Campbell.pdf."

(20) Length of destination track

Based on documents provided by Otter Tail, Messrs. Fisher and Plum determined the loaded distance at destination (from division of ownership with BNSF-owned track to the coal dumper) and empty distance (from the coal dumper back to BNSF-owned track) to be 3.7 miles and 3.0 miles, respectively.³⁹ Because the destination track is owned by Otter Tail, these mileages are not included in the totals shown in Item 17.

(21) Number of locomotives

Messrs. Fisher and Plum developed the average locomotive consist sizes for Big Stone coal trains by origin and quarter from the BNSF train movement files produced by BNSF for First Quarter 2002 through Fourth Quarter 2002. These records show that the issue traffic is powered predominantly by a consist of three 4000HP SD70MAC units for the entire round trip.⁴⁰ As explained above in section II.A.1.a.(3)(b)., additional units are sometimes required between Aberdeen and Big Stone. To develop variable costs for First Quarter 2003, Messrs. Fisher and Plum used the average locomotive consist size for shipments moving under the challenged rates in the prior four quarters, *i.e.*, full year 2002. Table II.A-7 presents the average consist sizes by quarter and origin mine that Messrs. Fisher and Plum used to calculate the variable costs of the Otter Tail trains.

³⁹ BNSF.OP.WP.II.A-0024-0026 and electronic workpaper "vc network.xls."

⁴⁰ Electronic workpaper "Big Stone Trains 2002.xls," Tabs "1," "2," "3," and "4."

Table II.A-7
Average Number of Locomotives Per Train

Mine	1Q02	2Q02	3Q02	4Q02	1Q03
Belle Ayr	3.02	3.11	3.07	3.14	3.08
Eagle Butte	3.04	3.07	3.04	3.03	3.04

Source: BNSF.OP.WP.II.A-0022 and electronic workpaper "Big Stone Trains 2002.xls," Tab "Locos per Train"

(22) Loading hours

Included in Item 24.

(23) Unloading hours

Included in Item 24.

(24) Cycle time

Messrs. Fisher and Plum developed an average cycle time for Big Stone coal trains from the BNSF train movement files produced by BNSF for the First Quarter 2002 through the Fourth Quarter 2002.⁴¹ They included in their cycle time calculations the time associated with both bringing replacement locomotives from locomotive shops and servicing facilities (*e.g.*, Glendive and Alliance) to the Otter Tail train and returning locomotives used on Otter Tail trains to facilities for inspection and/or repair.⁴² The treatment of this time is discussed below in section II.A.1.c.(16)(b). To develop variable costs for First Quarter 2003, Messrs. Fisher and Plum used the average cycle time for Otter Tail shipments moving under the challenged rates in the prior four quarters, *i.e.*, full year 2002. Table II.A-8 presents the cycle time by origin mine.

⁴¹ Electronic workpaper "Big Stone Trains 2002.xls," Tab "Cycle Times."

⁴² Electronic workpaper "Big Stone Trains 2002.xls," Tab "Consist Change Pivot New."

Table II.A-8
Average Locomotive Cycle Time per Train (in Hours)

Mine	1Q02	2Q02	3Q02	4Q02	1Q03
Belle Ayr	108	136	119	108	118
Eagle Butte	106	114	115	106	110

Source: BNSF.OP.WP.II.A-0023 and electronic workpaper "Big Stone Trains 2002.xls," Tab "Cycle Times"

(25) Number of train sets required

Not applicable.

(26) Trips per year per train set

Not applicable.

(27) Crew districts, loaded direction

From Gillette, Wyoming, BNSF crews move the loaded train through the following crew districts: Gillette-to-Sheridan; Sheridan-to-Forsyth; Forsyth-to-Hettinger; and Hettinger-to-Aberdeen.

(28) Crew districts, empty direction

As Mr. Ellis explained above in section II.A.1.a.(1), the empty Otter Tail train typically travels, in reverse direction, the same crew districts traversed by the loaded train and identified in Item 27 above.

(29) Turnaround crews

The Aberdeen to Big Stone crews can operate in turnaround service. Frequently, however, an Aberdeen crew cannot deliver a loaded train to Big Stone and return to Aberdeen within its maximum allowable hours-of-service. Messrs. Ellis and Kissner describe above in section II.A.1.a. the train and crew operations required to deliver a loaded train to the Big Stone plant. Also, Belle Ayr shipments are originated by BNSF loading crews that work in turnaround

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service from Gillette; and Gillette-based mine crews handle trains between Gillette and the third party loaders at Eagle Butte.

(30) Locomotive units

Messrs. Fisher and Plum identified the specific locomotive units used on the Big Stone coal trains from the BNSF train movement data produced by BNSF for the First Quarter 2002 through Fourth Quarter 2002. In 2002, 98 percent of the locomotive hours on Otter Tail trains were provided by 4000HP SD70MACs.⁴³ The BNSF variable costs reflect locomotive ownership costs for the actual units that powered the Big Stone trains in 2002, based on purchase and lease information that BNSF produced in discovery.⁴⁴

(31) Cars required

CCPA-BNSF 90062 and 90062-A require that Otter Tail provide the cars used in the issue service.

(32) Cabooses required

Otter Tail coal trains use end-of-train devices ("EOTDs"), not cabooses.

(33) Locomotive spare margin

Messrs. Fisher and Plum include a locomotive spare margin of { } percent based on a special study described below in section II.A.1.c.(16).(c).⁴⁵

⁴³ Electronic workpaper "Big Stone Trains 2002.xls," Tab "Total Locomotive Use."

⁴⁴ BNSF.OP.WP.II.A-0042 and electronic workpaper "OTP Loco Ownership.xls."

⁴⁵ BNSF.OP.WP.II.A-0030 and electronic workpaper "Spare Margin.xls."

(34) Car spare margin

Not applicable.

(35) Switching by road-haul locomotives

BNSF road crews and locomotives switch cars bad-ordered along the rail line or at locations not served by yard crews. Messrs. Fisher and Plum determined the location and frequency of cars bad-ordered from the Otter Tail coal trains from BNSF car movement data.⁴⁶ As explained below in section II.A.1.c.(6).(b).(iii)., BNSF road crews and locomotives perform the majority of bad-order switching operations at Aberdeen.

In addition, there are switching operations associated with replacing locomotives in need of service or inspection on the Otter Tail trains with recently serviced locomotives. As Messrs. Ellis and Tait explained above in section II.A.1.a.(3).(i)., because the Otter Tail train does not pass through a major locomotive maintenance facility, BNSF must pre-position a serviced locomotive along the Otter Tail route when it needs to replace a locomotive on an Otter Tail train. Typically, BNSF adds the serviced locomotive to a train from Glendive (or Alliance) for repositioning at Forsyth (or Gillette or Sheridan) where it awaits the Otter Tail train. At Forsyth (or Gillette or Sheridan), the locomotives are swapped. The locomotive that is switched out of the Otter Tail train is subsequently switched onto a passing train and taken usually to Glendive/Alliance for inspection and service as appropriate. Thus, there are two switching events at Glendive/Alliance and four at Forsyth/Gillette/Sheridan associated with replacing locomotives on the Otter Tail trains. At Glendive/Alliance, (1) the serviced locomotive must be switched onto a train for repositioning to Forsyth/Gillette/Sheridan and (2) the locomotive that

⁴⁶ Electronic workpaper "2002-2003 Bad Orders.xls."

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was removed from the Otter Tail train and repositioned to Glendive/Alliance must be switched out of the train on which it arrived. At Forsyth/Gillette/Sheridan, (1) the serviced locomotive must be switched off the train that delivered it; (2) it is then switched into the Otter Tail train; (3) the locomotive that needs service must be switched out of the Otter Tail train; and (4) it is then switched into a passing train for repositioning to Glendive/Alliance.

(36) Switching by yard locomotives.

Messrs. Fisher and Plum did not include costs for yard locomotives or yard crews to perform switching related to the Otter Tail trains.

(37) Helper service

Table II.A-9 presents the locations where Big Stone coal trains are helped.

Table II.A-9
Helper Service Locations

Helper	Location	Subdivision
Belle Ayr	MP 16.0 – MP 8.2	Orin
Campbell	MP 9.5 – MP 0.0	Campbell
Sheridan	MP 660.5 – MP 724.0	Big Horn

Source: BNSF/OTP 04135-04136, included as BNSF.OP.WP.II.A-0013-0015

(38) Helper crews

Messrs. Fisher and Plum determined the crew wage expense associated with the helpers required to provide the Big Stone service from payroll data provided to Otter Tail in discovery.⁴⁷

(39) Location of interchanges

There are no interchanges for the Big Stone movement.

⁴⁷ Electronic worksheet "ottertail.bnsf helper crew wages.xls."

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(40) Location of inter and intra-train switching

Bad-ordered cars may be switched out of the Otter Tail train at locations along the route and then delivered to Aberdeen in general freight train service. According to BNSF records, however, virtually all bad-order car switching occurred at Aberdeen and, therefore, BNSF includes in its variable cost calculations inter-train or intra-train car switching activities performed at Aberdeen only.

(41) Joint facility payments

By using URCS system-average maintenance-of-way costs, Messrs. Fisher and Plum incorporate system-average joint facility expenses in developing the variable costs for the issue movements.

c. Variable Costs Of The Otter Tail Movement

Variable costs are costs that change in direct proportion to changes in output. The Board requires that URCS be used to calculate variable costs in railroad rate proceedings.⁴⁸ Variable costs for the Otter Tail traffic were calculated using the BNSF 2002 URCS that Messrs Fisher and Plum developed. In order to calculate the variable costs of service for the Otter Tail traffic, Messrs. Fisher and Plum used BNSF 2002 URCS system-average costs and applied quarterly indices (*see* section II.A.1.c.(19)) as appropriate. Where data were available, they used actual BNSF costs to perform movement-specific adjustments that reflect the actual traffic and operating characteristics described in Section II.A.1.a. and b. above. The methodologies used to

⁴⁸ URCS is the cost accounting tool that the Board uses to estimate variable costs. Each year, using cost and operating statistics from each Class I carrier's Annual R-1 Report, the Waybill Sample, the Annual Report of Cars Loaded and Terminated (Form STB-54), and the Report of Freight Commodity Statistics (Form QCS), the Board develops the URCS unit costs for each carrier.

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make the movement-specific adjustments are explained in the following sections of this Narrative. Table II.A-10 sets forth BNSF's variable costs by cost component for shipments originating at Belle Ayr mine in Fourth Quarter 2002. Exhibit II.A-1 contains similar information for Belle Ayr and Eagle Butte originations for First Quarter 2002 through First Quarter 2003.

In accordance with Board precedent, the URCS used by BNSF to calculate Otter Tail variable costs has been adjusted to *include* Account 90 (Construction in Progress) and *exclude* expenditures recorded in Account 76 (Interest During Construction) in order to determine the general overhead ratio for return on investment. Most recently in *TMPA*, the Board recognized that "unless the construction projects included in Account 90 are long-term in nature," it is appropriate and consistent with ICC and STB precedent to include Account 90 and exclude Account 76.⁴⁹ While the burden is on the complainant to demonstrate that the construction projects included in Account 90 are long-term in nature, BNSF nevertheless presents in Exhibit II.A-4 two recent special studies that demonstrate the short-term nature of the construction projects in Account 90. These special studies were presented by BNSF in the *Xcel* and *AEPCO* rate cases.⁵⁰ One of the studies is comparable to the study accepted by the Board in *TMPA* as demonstrating the short-term nature of construction projects in Account 90.

⁴⁹ *TMPA* at 40.

⁵⁰ Opening Evidence and Argument of the Burlington Northern and Santa Fe Railway Company, *Public Service Co. of Colorado d/b/a Xcel Energy v. The Burlington Northern and Santa Fe Railway Co.*, STB Docket No. 42057 (filed Jan. 10, 2003); Opening Evidence of the Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company, *Arizona Elec. Power Coop., Inc. v. The Burlington Northern and Santa Fe Railway Co. and Union Pac. R.R. Co.*, STB Docket No. 42058 (filed Feb. 7, 2003).

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Table II.A-10
Variable Costs Per Carload and Ton
Belle Ayr Mine to Big Stone
Aluminum Car Rate, Fourth Quarter 2002

Item	4Q02
1. Carload O/T - Clerical Expense	{ }
2. Carload Handling - Other Expense	{ }
3. Switching Expense - Yard Locomotives	{ }
4. Loop Track Expense (GTM and LUM)	{ }
5. Switching Expense - Road Locomotives (Non-Yard Tracks)	{ }
6.A Switching Expense - Road Locomotives (Yard Tracks, excluding Crew Wages and Loco Ownership)	{ }
6.B Switching Expense - Road Locomotives (Yard Tracks, excluding Crew Wages)	{ }
6.C Road Locomotives (Yard Tracks)	{ }
7. Gross Ton-Mile Expense (GTM)	{ }
8. Train-Mile Expense - Other Than Crew	{ }
9. Locomotive Unit-Mile Expense (excluding Ownership)	{ }
10. Train-Mile-Expense - T&E Crew	{ }
11. Helper Expense - LUM	{ }
12. Helper Expense - Crew	{ }
13. Freight Car Expense (RR-Owned Only)	{ }
14. User Responsibility for Freight Car Repairs	{ }
15. Loss & Damage Expense	{ }
16. Locomotive Ownership Expense	{ }
17. EOTD Ownership Expense	{ }
18. Third Party Loading Expense	{ }
19. Total Variable Cost per Carload (Lines 1-18)	\$717.88
20. RFA-URCS Linking Factor	0.9934
21. Linked Variable Cost Per Carload	\$713.14
22. Net Tons Per Carload	119.8
23. Variable Cost Per Ton	\$5.95
24. Rate Per Ton	\$13.49
25. R/VC Ratio	227%

Source: Exhibit II.A-1 and electronic workpaper "BNSF OTP OPEN PRG.123"

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(1) Carload Originated or Terminated - Clerical

The URCS process develops a system-average unit cost for clerical expenses associated with originating and terminating freight cars. To be consistent with Board precedent for costing trainload shipments of coal, Messrs. Fisher and Plum modified the BNSF 2002 URCS unit cost to reflect the Ex Parte No. 399 adjustment.⁵¹ This adjustment associates 75 percent of the unit cost with each individual car in a trainload shipment and the remaining 25 percent of the unit cost with all of the cars in a shipment. For Otter Tail trains carrying 117 cars, this adjustment reduces the system-average unit cost by nearly 25 percent.⁵²

(2) Carload Handling - Other

The URCS process also develops a system-average unit cost for other expenses associated with handling freight cars. BNSF's variable costs use the BNSF 2002 URCS unit cost, adjusted to reflect the Board's treatment of this cost in *TMPA*.⁵³

(3) Switching Expense - Yard Locomotive

Messrs. Fisher and Plum did not include costs for switching by yard locomotives.

(4) Loop Track Expense

BNSF developed the variable costs of operating over the spur and loop tracks at the PRB mine origins and the spur and loop tracks at Big Stone by treating them as extensions of the line-haul operation. As mentioned above, because these tracks are not BNSF-owned,

⁵¹ Electronic workpaper "BNSF OTP OPEN PRG.123," Tab "F."

⁵² $0.75 + 0.25/117 = 75.2$ percent.

⁵³ BNSF.OP.WP.II.A-0031 to 0032, electronic workpaper "Carload Handling.xls" and *TMPA* at 53.

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BNSF's variable costs include only operating costs for these portions; they do not include costs associated with track maintenance and ownership.

(5) Switching Expense - Road Locomotives (Non-Yard Tracks)

Messrs. Fisher and Plum costed all road switching as occurring on yard tracks and did not include costs associated with road switching on non-yard tracks.

(6) Switching Expense - Road Locomotives (Yard Tracks)

As explained in section II.A.1.a. by Messrs. Ellis, Tait, and Kissner, the vast majority of switching associated with the Otter Tail train is performed by road locomotives and typically occurs at the following yards: (1) Glendive or Alliance, (2) Forsyth or Gillette or Sheridan, (3) Hettinger, and (4) Aberdeen. To develop the costs associated with the switching activities performed at each of these locations, Messrs. Fisher and Plum used a three-step process. First, they modified the URCS switch-engine-minute ("SEM") unit cost to reflect more accurately the costs associated with each specific switching activity. Second, they determined the amount of time per Otter Tail train for each activity. Third, they multiplied the minutes per train for each activity by the appropriate modified URCS switching unit cost. Each of these steps is explained below.

(a) Modification of URCS switching unit cost

While the vast majority of switching associated with the Otter Tail train is performed by road locomotives on yard tracks, the composite URCS SEM cost is not specific to this activity. This URCS SEM cost includes the following expenses: (1) switching track ownership and maintenance; (2) road operations related to switching; and (3) yard operations. To produce a single unit cost, the URCS process combines expenses in these three categories,

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and then divides by the total number of switching minutes incurred system-wide by both road and yard engines.

Application of the same unit cost to different types of switching activities, however, is not the most accurate means of costing switching activities, because actual switching costs vary significantly based on whether the switching is performed by a road or yard switch crew and whether the switching occurs on yard tracks. For example, because the road crews and yard crews are subject to different pay rates and labor agreement provisions, their unit costs per minute of switching activity is different. Thus, to reflect more accurately the switching costs associated with the Otter Tail trains, Messrs. Fisher and Plum separated from the URCS switching unit cost the component costs associated with the switching by road locomotive on yard tracks (“SEM-Road Switching on Yard Tracks”).⁵⁴ This component unit cost includes road operating expense including yard maintenance and ownership expense, and reflects the BNSF system average per-minute cost of switching performed by road crews using road locomotives on railroad-owned yard tracks.

The “SEM-Road Switching on Yard Tracks” cost is based on the URCS system-average road crew costs and road locomotive ownership costs. Messrs. Fisher and Plum, however, performed special studies that identified certain road crew wages and locomotive ownership costs specific to the Otter Tail trains and modified to SEM component unit cost to reflect the movement-specific costs. Because these special studies account for the wages of the road crews working the Otter Tail trains crews and for the ownership costs of the locomotives

⁵⁴ BNSF.OP.WP.II.A-0033 to 0037 and electronic work paper “BNSF-02-SWITCH SPLIT.123.”

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powering the Otter Tail trains, Messrs. Fisher and Plum further modified the SEM component unit cost to avoid overstating crew wage and locomotive ownership costs.

First, for the switching that is performed by the Otter Tail train crews that report to the Otter Trail train symbol discussed in section II.A.1.a.(3). above, Messrs. Fisher and Plum excluded the crew wage and locomotive ownership expenses from the modified URCS switching costs, because they were already accounted for in the respective special studies for the Otter Tail trains.

Second, for the switching that is performed by the Aberdeen road switcher discussed in section II.A.1.a.(3).(b). above, Messrs. Fisher and Plum excluded the crew wage expenses from the switching costs to avoid a double-count. They *included* the URCS system-average switching costs for locomotive ownership, however, as the road switcher's units were *not included* in the special study of locomotive ownership for the Alliance Pool SD70MACs that power the Otter Tail trains from which the variable costs are developed.

Finally, for the switching that is performed by non-Otter Tail road crews (*i.e.*, the "other road crews" that switch locomotives into and out of trains at Glendive/Alliance and Forsyth/Gillette/Sheridan as described in section II.A.1.a.(3).(a)., Messrs. Fisher and Plum included the URCS system-average switching costs for crew wages and locomotive ownership. Because the switching is performed by non-Otter Tail road crews, their crew wage costs are not included in Messrs. Fisher and Plum's special study of Otter Tail crew wages. Similarly, because the switching is performed by locomotives that are not used on Otter Tail trains, the locomotive ownership costs for these units are not included in Messrs. Fisher and Plum's special study of locomotive ownership costs.

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(b) Switching Expenses By Location

Table II-A-11 summarizes the different types of switching, the amount of road switching per train, and the cost items that were included in the switching unit costs.

Table II-A-11
Road Switching on Yard Tracks
For Big Stone Trains

Type	Crew	Minutes per Event	Frequency	Switching Minutes per Train
<i>Bad Order Cars at Aberdeen</i>				
	Road Switcher (RTW)	90	70%	63.0
	OTP train (BSB)	105	30%	31.5
<i>Locomotive Switching at Aberdeen</i>				
	OTP train (BSB)	45	100%	45.0
<i>Swapping Locomotives at Forsyth/Gillette/Sheridan</i>				
	OTP train (BSB)	90	21%	18.9
	Other Road Crews	60	19%	11.1
<i>Swapping Locomotives at Glendive/Alliance</i>				
	Other Road Crews	30	16%	4.8
<i>Switching at Hettinger To Avoid Blocking Grade Crossings</i>				
	Loaded OTP train (BSB)	90	47%	42.3
	Empty OTP train (BSB)	90	57%	51.3
<i>Totals</i>				
	OTP train (BSB)			189.0
	Road Switcher (RTW)			63.0
	Other Road Crews			15.9

Source: Electronic workpapers "SWITCH MIN.123" and "Big Stone Trains 2002.xls," Tab "Consist Change Pivot New"

i) Switching at Glendive and Alliance

The locomotives used on the Otter Tail trains are inspected and repaired at either Glendive or Alliance. As discussed above in Section II.A.1.a.(3)(i), the Otter Tail train, however, does not pass through Glendive, Alliance or any other locomotive maintenance facility. Therefore, locomotives used on the Otter Tail trains generally must be brought to the Otter Tail train from one of these facilities. Typically, these locomotives travel from Glendive to Forsyth (where they are swapped in and out of the Otter Tail train) by another train on its way to or from

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Otter Tail service.⁵⁷ Thus, if a locomotive to be used in Otter Tail service did not come from a mechanical event at a repair shop, Messrs. Fisher and Plum did not include the switching at Glendive or Alliance. Similarly, if a locomotive used in Otter Tail service did not then report a mechanical event at a repair shop, the switching at Glendive or Alliance was also excluded from the costs associated with the Otter Tail movement. Their special study shows that 79 percent of the locomotives swapped onto an Otter Tail train had been repositioned from a locomotive shop facility, and 73 percent of the locomotives swapped out of an Otter Tail train then traveled to a locomotive shop facility.⁵⁸ Messrs. Fisher and Plum applied these shop-related frequencies to the proportion of associated change-outs on 2002 Otter Tail trains (21 percent) to determine that a locomotive change-out results in switching at Glendive or Alliance on 16 percent of Otter Tail trains.⁵⁹ Accordingly, to account for the switching that occurs at either Glendive or Alliance, Messrs. Fisher and Plum included 4.8 minutes of switching per Otter Tail train.⁶⁰

Finally, Messrs. Fisher and Plum converted this time to costs per train by applying the appropriate SEM component unit cost. The crew wage and locomotive ownership costs of providing these switching activities are not accounted for in Messrs. Fisher and Plum's calculations of Otter Tail train crew wages and locomotive ownership costs because the switching is performed by non-Otter Tail road crews using locomotives that are not used in Otter Tail service. Therefore, to calculate the per train cost associated with switching at Glendive or

⁵⁷ This was done by identifying in the train event data whether there was a mechanical event code before a locomotive was repositioned for use on an Otter Tail train or after the locomotive was repositioned after being used on an Otter Tail train.

⁵⁸ Electronic workpaper "Loco Shop Special Study-2001.xls."

⁵⁹ Electronic workpaper "Big Stone Trains 2002.xls," Tab "Consist Change Pivot New."

⁶⁰ 30 minutes per change-out x 0.16 switches per train = 4.8 minutes per train.

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Alliance, Messrs. Fisher and Plum multiplied the 4.8 minutes of switching by the SEM-Road Switching on Yard Tracks unit cost that includes crew wages and locomotive ownership at system-average switching costs.⁶¹

ii) Switching at Forsyth/Gillette/Sheridan

As explained in section II.A.1.a.(3).(a). above, the change-out of locomotives on the Otter Tail train typically occurs at Forsyth, Montana, but may also occur at Gillette, Sheridan and other locations along the route. There are four switching events associated with each locomotive change-out. First, a locomotive fresh from a locomotive repair facility must be switched out of the train on which it arrives at Forsyth/Gillette/Sheridan from the repair facility. Second, that same locomotive must be switched into the Otter Tail train. Third, the locomotive on the arriving Otter Tail train that is in need of inspection or repair must be switched out of the Otter Tail train. Fourth, the locomotive switched out of the Otter Tail train must be switched into another train to make the trip to a locomotive repair facility. BNSF's Trainmaster at Forsyth, Howard Tait, explained that these four activities take a minimum of 150 minutes to accomplish -- 90 minutes by Otter Tail crews and 60 minutes by road crews on the other trains.

To confirm this time, Messrs. Fisher and Plum performed a special study of the Train Activity Reports produced to Otter Tail in discovery.⁶² Those reports indicate that these four switching activities take from 55 minutes to 4 hours, 25 minutes to perform.⁶³ Train

⁶¹ Electronic workpaper "BNSF OTP OPEN PRG.123," Tab "K."

⁶² BNSF produced to Otter Tail the specific Train Activity Reports selected by its consultants during site visits to Forsyth and Sheridan. Messrs. Fisher and Plum's special study is based on this sample of Train Activity Reports. BNSF.OP.WP.II.A-0079 to 0085.

⁶³ Electronic workpaper "Loco Swap.xls."

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Activity Reports, however, may not provide sufficient detail to measure specific switching times. Thus, to be conservative, Messrs. Fisher and Plum developed switching costs based on the 150-minute minimum to which Mr. Tait testified.

To determine on a per-train basis the number of minutes associated with these switching activities, Messrs. Fisher and Plum conducted a special study of the frequency that locomotive change-outs on the Otter Tail train result in switching at Forsyth/Gillette/Sheridan. This study was described in section II.A.1.c.(6)(a) above. Their special study showed that switching by the Otter Tail crew occurs on 21 percent of Otter Tail trains,⁶⁴ or 18.9 minutes per train.⁶⁵ Messrs. Fisher and Plum included all switching performed by Otter Tail road crews. They also included all switching by non-Otter Tail road crews, except when the data were ambiguous as to whether the switching was exclusively in support of Otter Tail train operations (e.g. the locomotive being switched by the non-Otter Tail crew for use in the Otter Tail train had not come directly from a repair shop). In those instances, Messrs. Fisher and Plum assigned only 50 percent of the switching by the non-Otter Tail crew to Otter Tail service. As a result, they assigned 30 minutes per change-out and 30 minutes per change-in performed by non-Otter Tail road crews to 19 percent⁶⁶ of the Otter Tail trains, producing 11.1 minutes per train.⁶⁷

⁶⁴ Electronic workpaper "Big Stone Trains 2002.xls," Tab "Consist Change Pivot New."

⁶⁵ 90 minutes per change-out x 0.21 switches per train = 18.9 minutes per train.

⁶⁶ As described above, the special study determined that 79 percent of the locomotives that were changed onto the Otter Tail train and 73 percent of the locomotives that were changed out of the Otter Tail train were associated with locomotive shop events. Thus, an average of 76 percent of change-outs/change-ins on Otter Tail trains are shop-related. To calculate the switching minutes performed by non-Otter Tail crews, Messrs. Fisher and Plum then added to the 76 percent, one-half of the switching occurrences where it was not apparent that the switch was exclusively in support of Otter Tail service. This calculation showed that 88 percent of the non-Otter Tail road crew switching at locations

Finally, Messrs. Fisher and Plum converted this time to costs per train by applying the appropriate SEM component unit cost. For the 18.9 minutes of switching performed by Otter Tail train crews using Otter Tail locomotive units, they applied the SEM-Road Switching on Yard Tracks unit cost that excludes crew wage and locomotive ownership costs, as those costs are already accounted for in Messrs. Fisher and Plum's calculations of Otter Tail train crew wages and locomotive ownership costs.⁶⁸ For the 11.1 minutes of switching performed by non-Otter Tail crews using locomotives not used in Otter Tail service, they applied the SEM-Road Switching on Yard Tracks unit cost that includes crew wages and locomotive ownership at system-average switching costs, as those costs are not accounted for in their calculations of Otter Tail crew wages and locomotive ownership costs.⁶⁹

iii) Switching of Bad-Ordered Cars and Locomotives at Aberdeen

Freight cars used to deliver the Big Stone coal that become unsafe or are damaged must be removed from the train, repaired, and returned to service. BNSF provided Messrs. Fisher and Plum detailed car movement records for cars that were bad-ordered from the Big Stone trains that moved under the challenged rates between May 2002 and April 2003.⁷⁰ These

where locomotives are added to or removed from the Otter Tail trains is assignable to Otter Tail. They then applied the 88 percent to the frequency that locomotives are changed out of and onto Otter Tail trains (21 percent) to produce the 19-percent figure. Electronic workpaper "Big Stone Trains 2002.xls," Tab "Consist Change Pivot New."

⁶⁷ 60 minutes per change-out x 0.19 switches per train = 11.1 minutes per train.

⁶⁸ Electronic workpaper "BNSF OTP OPEN PRG.123," Tab "I."

⁶⁹ Electronic workpaper "BNSF OTP OPEN PRG.123," Tab "K."

⁷⁰ Electronic workpaper "2002-2003 Bad Orders.xls."

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car movement records show that on average 4.3 cars per train were bad ordered, virtually all of which were switched from empty Otter Tail trains when they returned to Aberdeen. Bill Kissner, BNSF's Trainmaster at Aberdeen, explains above in section II.A.1.a.(3).(a) that it takes on average 90 minutes per train for the three-person road-switcher crew -- which performs the switching approximately 70 percent of the time -- to switch bad order cars out of the Otter Tail train at Aberdeen, and it takes 105 minutes for the two-person outbound road crew to remove the bad order cars from the train. This time is supported by the Train Activity Reports completed by the road crews that performed switching at Aberdeen.⁷¹ To develop the variable costs for the Otter Tail move, Messrs. Fisher and Plum use 90 minutes per train for the 70 percent of trains switched by the road-switcher crew and 105 minutes per train for the 30 percent of trains switched by the outbound road crew.⁷²

In addition, the outbound road crew performs other switching activities. The crew takes a serviced locomotive to the coal car spare track, collects the requisite number of fill cars that will bring the empty train to its ideal tender, and places them on the Otter Tail train.⁷³

⁷¹ Electronic workpaper "TAR Switching Data.xls" identifies two to three hours of switching per train for the road crews. The Aberdeen road-switcher crews do not generally chronicle switching activities in Train Activity Reports.

⁷² Electronic workpaper "SWITCH MIN.123."

⁷³ If an outbound crew must switch out bad ordered cars and configure the DP unit (as well as collect the head-end locomotives from the fueling facility and fill cars from the spare track) and this work exceeds 5.5 hours (including 2.5 hours for the car inspectors to inspect the train under blue flag conditions), the crew will not be able to take the train to Hettinger before it outlaws, and a new outbound crew will be called.

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According to Mr. Kissner, these activities take on average 45 minutes to perform, which Messrs. Fisher and Plum use to develop switching costs.⁷⁴

Finally, Messrs. Fisher and Plum calculated the switching costs associated with switching at Aberdeen in two steps. First, they multiplied the minutes per train of switching performed by the Otter Tail road crews by the SEM-Road Switching on Yard Tracks unit cost that excludes crew wage and locomotive ownership costs, as those costs are already accounted for in Messrs. Fisher and Plum's calculations of Otter Tail crew wage and locomotive ownership costs. Next, they multiplied the minutes per train of switching performed by the Aberdeen road-switcher crews by the SEM-Road Switching on Yard Tracks unit cost that excludes crew wage costs and includes system-average locomotive ownership costs, as the road switcher crew wage costs are accounted for in Messrs. Fisher and Plum's special study of Otter Tail crew wage costs, but the locomotives used by the road-switcher are not included in their special study of locomotive ownership costs.⁷⁵

iv) Switching at Hettinger

As Mr. Kissner explains in section II.A.1.a.(3)(e) above, BNSF road crews frequently must break apart the Otter Tail train at Hettinger to avoid blocking state highway and other grade crossing while the train is parked at Hettinger. According to Mr. Kissner this switching takes on average 90 minutes (45 minutes to break the train apart and 45 minutes to

⁷⁴ As indicated earlier, Messrs. Fisher's and Plum's use of 150 minutes (105 minutes for removing bad orders and 45 minutes for the other switching activities) is supported by the Train Activity Reports. Electronic workpaper "Aberdeen Switching.xls."

⁷⁵ As explained in section II.A.1.c.(10). below, BNSF produced to Otter Tail in discovery payroll records for road crews working Otter Tail trains (reporting to "BSB" train symbols) as well as Aberdeen road-switcher crews (reporting to "RTW" train symbols) that also work Otter Tail trains.

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reassemble). Messrs. Fisher and Plum confirmed this time in a special study of Train Activity Reports produced to Otter Tail in discovery. Those reports show that each activity takes approximately 55 minutes, or 110 minutes in total.⁷⁶ To be conservative, however, Messrs. Fisher and Plum use the 90 minutes to which Mr. Kissner testifies. Messrs. Fisher and Plum then determined the frequency with which such switching occurs by identifying from BNSF's 2002 train movement data produced in discovery the trains that were stopped at Hettinger for more than 30 minutes.⁷⁷ The special study showed that switching is required at Hettinger on 47 percent of the loaded Otter Tail trains and 57 percent of the empty Otter Tail trains.⁷⁸ Accordingly, to account for the switching that occurs at Hettinger, Messrs. Fisher and Plum include 93.6 minutes of switching per Otter Tail train.⁷⁹

Finally, Messrs. Fisher and Plum calculated the switching costs associated with switching at Hettinger by multiplying the minutes per train of switching at Hettinger by the SEM-Road Switching on Yard Tracks unit cost that excludes crew wage and locomotive ownership costs, as those costs are already accounted for in Messrs. Fisher and Plum's calculations of Otter Tail crew wage and locomotive ownership costs.

⁷⁶ BNSF.OP.WP.II.A-0086 to 0137.

⁷⁷ This threshold is conservative, as the statutory maximum time a crossing is permitted to be blocked is only 10 minutes. N.D. CENT. CODE § 49-11-19 (2001) as amended by 2003 N.D. Laws 1372.

⁷⁸ Electronic workpaper "Big Stone Trains 2002.xls," Tab "Hettinger Dwell."

⁷⁹ 90 minutes per train x 0.47 loaded trains + 90 minutes per train x 0.57 empty trains = 93.6 minutes per train.

(7) Gross Ton-Mile Costs

URCS develops gross ton-mile unit costs for road property maintenance and ownership. As explained in BNSF's Response to Otter Tail's Motion to Compel which is incorporated herein by reference, BNSF's road property data cannot be used to develop a reliable line-specific adjustment to system-average road ownership costs. Nor does BNSF maintain data that would support the development of a movement-specific adjustment for maintenance-of-way ("MOW") variable costs. Accordingly, BNSF uses system-average road ownership and MOW costs to develop the variable costs of the Otter Tail traffic.

Gross ton-mile costs also include a portion of the expenses associated with train fuel, locomotive maintenance, and locomotive and train administration activities. BNSF uses URCS system-average costs to calculate each of these components of BNSF gross ton-mile costs.

(8) Train Mile Expense - Other than Crew

This category includes expenses for road operations, train inspections, and other miscellaneous train-mile expenses. Because Big Stone coal trains use end-of-train devices ("EOTDs") instead of cabooses, Messrs. Fisher and Plum removed operating and ownership expenses related to cabooses from the "train-mile other" URCS unit cost. They made a movement-specific adjustment and calculated variable costs for EOTDs using purchase information produced in discovery.⁸⁰

⁸⁰ BNSF.OP.WP.II.A-0046 and electronic workpaper "2002 EOTD Data.123."

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(9) Locomotive Unit-Mile Expense (excluding ownership)

URCS develops costs per locomotive unit-mile that include expenses associated with locomotive ownership and maintenance, a portion of locomotive repair and servicing, a portion of locomotive and train administration, and a portion of train fuel. The treatment of locomotive fuel and maintenance expenses are discussed in section II.A.1.c.(7), above. With the exception of locomotive ownership expense (described below in section II.A.1.c.(16)), all other locomotive unit-mile costs are included at system-average levels.

(10) Train-Mile Expense – T&E Crew

Messrs. Fisher and Plum developed movement-specific crew wage expenses to reflect the costs that BNSF incurred in providing service in the Otter Tail movement to Big Stone. In discovery, BNSF provided payroll records identifying all wages paid to train and enginemen that worked Big Stone coal trains during 2002.⁸¹ Using that information, Messrs. Fisher and Plum applied the methodology that the Board uses to determine crew wage costs for rate reasonableness proceedings.⁸² They used a four-step process to calculate the movement-specific adjustment to the URCS system-average expense for train crews.

First, Messrs. Fisher and Plum compiled the “Otter Tail trains” wage files that BNSF provided in discovery to identify the actual wages paid to train crews working Otter Tail trains moving under the challenged rates.⁸³

⁸¹ BNSF/OTP/TAPE 132, included in electronic workpaper “Otter Tail Train Wages database.mdb.”

⁸² *FMC* at 80.

⁸³ Electronic workpaper “Otter Tail Train Wages database.mdb.”

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Second, Messrs. Fisher and Plum calculated the relationship between the wages that BNSF reported in the train wage files and the total wages paid to the crewmen who worked Otter Tail trains using the data provided in discovery. Messrs. Fisher and Plum used the “full wages” files that BNSF provided in discovery⁸⁴ to determine the factors, or “mark-up ratios,” by occupation (*e.g.*, engineer, conductor), that account for BNSF’s full wage expenses.⁸⁵

Third, Messrs. Fisher and Plum applied the mark-up ratios to the actual train wages that were generated in step one to determine the full crew wages.⁸⁶ Steps two and three develop wages that crewmen who work Otter Tail trains earn for activities such as vacations, holidays, personal days, training, testing, and safety meetings. The use of a mark-up ratio is necessary to account for these items. The Board has repeatedly accepted this methodology.⁸⁷

Fourth, Messrs. Fisher and Plum converted the full crew wages for Otter Tail trains to the variable crew expense that is an input to the cost calculations. They applied factors from the BNSF 2002 URCS to account for non-wage expenses, departmental overheads, and crew wage variability.⁸⁸

In addition to train crews, BNSF PRB loading crews, Aberdeen road-switcher crews, and helper crews are required for the Otter Tail coal trains. Messrs Fisher and Plum compiled wages for each of these types of crews from the year-2002 payroll records that were

⁸⁴ BNSF/OTP/TAPE 132, included in electronic workpaper “Otter Tail Train Wages database.mdb.”

⁸⁵ Electronic workpaper “ottertail.bnsf markup 2002.xls.”

⁸⁶ BNSF.OP.WP.II.A-0038 to 0040 and electronic workpaper “ottertail.bnsf roadcrew wages v2.xls.”

⁸⁷ *See WPL* at 56, *FMC* at 80.

⁸⁸ BNSF.OP.WP.II.A-0038 to 0040 and electronic workpaper “BNSF-02-T&E-ADJ.123.”

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produced to Otter Tail, and applied the corresponding mark-up ratio, by occupation, to include an appropriate allocation of “non-train” pay.⁸⁹ For Otter Tail trains originated at Belle Ayr mine by BNSF loading crews, Messrs. Fisher and Plum assigned average wages for one BNSF loading crew to each Otter Tail train that loaded at Belle Ayr. For all Otter Tail trains, they assigned 23 percent of the average wages for Aberdeen road-switcher crews to each Otter Tail train. This factor is based on multiplying the frequency with which the Aberdeen road-switcher worked an Otter Tail train (70 percent) by the portion of those shifts spent working the train that is assignable to Otter Tail (33 percent). To assign helper crew wages to the Otter Tail trains, Messrs. Fisher and Plum used the average number of helps per shift at each location based on information provided to Otter Tail in discovery.⁹⁰

(11) Helper Expense - LUM

Messrs. Fisher and Plum develop variable costs for the Otter Tail move using URCS system-average costs for this cost component.

(12) Helper Expense - Crew

See Item 10 above.

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

Pursuant to CCPA-BNSF 90062 and CCPA-BNSF 90062-A, Otter Tail provides the cars moving under the challenged rate.

⁸⁹ Because it was not possible to identify the wages for the specific crews that worked the Big Stone trains, Messrs. Fisher and Plum used the average wages in each quarter of 2002 for all crews that worked at each location in developing variable costs. Electronic workpaper “Other Crew Wages.pdf.”

⁹⁰ BNSF/OTP 04135-04136, included as BNSF.OP.WP.II.A-0013 to 0015.

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(14) User Responsibility for Freight Car Repairs

While Otter Tail supplies the cars for the issue move and is generally responsible for their upkeep and maintenance, there are some repair and replacement costs that are BNSF's responsibility. Specifically, when cars are destroyed or damaged by train accidents, carrier mishandling of trains (such as damage to wheels when brakes are applied improperly), or are otherwise destroyed in the course of business, BNSF, as the car user, is responsible for the cost of repairing those cars or for reimbursing the owner if a car cannot be repaired (less salvage value).⁹¹ In Ex Parte 334, *Car Service Compensation – Basic Per Diem Charge – Formula Revision in Accordance with the Railroad Revitalization and Regulatory Reform Act of 1976* (decided August 1, 1977), the Commission concluded that such user costs for private cars are 9.51% of total Account 314, Freight Train Car Repairs.⁹²

To develop variable costs for the Otter Tail movement, Messrs. Fisher and Plum applied 9.51 percent of BNSF's URCS freight car repair unit cost per mile to the round-trip car-miles for the Otter Tail move.

(15) Loss and Damage

Because the Board's 2002 URCS data set has not been released, BNSF applied the 2001 URCS loss and damage cost for coal to develop the Otter Tail variable costs.

⁹¹ *Chicago, B.&Q.R. Co. v. New York, S.&W.R. Co.*, 332 I.C.C. 176, 189 (1968) ("Repairs made necessary by improper use and handling of the car are not considered ownership responsibility items, and the costs are customarily borne by the responsible railroad.").

⁹² 358 I.C.C. 716, 804 (1977).

(16) Locomotive Ownership Expense

(a) Acquisition Costs

BNSF calculated locomotive ownership costs based on the actual units that powered the Big Stone coal trains from January 1, 2002 through December 31, 2002, and eliminated the locomotive ownership portion of the URCS-based locomotive unit-mile cost. For each BNSF locomotive that appeared in a Big Stone-train consist, BNSF identified the gross investment and age -- if the locomotive was purchased or acquired through a capital lease -- or the annual payment -- if the locomotive was acquired under an operating lease -- from accounting information provided to Big Stone in discovery.⁹³ With this information, BNSF then calculated a composite annual ownership cost weighting each locomotive's costs by its proportion of the total locomotive unit-hours required to move Big Stone traffic traveling under the challenged rate.⁹⁴ BNSF converted the annual cost to a cost per locomotive unit-hour, multiplied the cost by the round-trip locomotive cycle hours, and substituted the resulting figure for the URCS system-average locomotive ownership costs.⁹⁵

Use of an annual lease payment normalized over the life of the lease is the proper methodology for calculating locomotive ownership cost for leased locomotives in this case. BNSF's locomotive operating leases generally are structured so that the amount of the payments under a particular lease may vary, sometimes dramatically, from year to year and even from

⁹³ BNSF/OTP 03973 to 04018 and 18385 to 18398, summarized in electronic workpaper "OTP Loco Ownership.xls."

⁹⁴ Electronic workpaper "OTP Loco Ownership.xls."

⁹⁵ Electronic workpaper "BNSF OTP OPEN PRG.123," Tab "Q."

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payment to payment.⁹⁶ Because of this uneven payment schedule, reliance on the actual annual lease expense does not provide an accurate picture of the real ownership cost for the equipment during any particular time period. Normalizing the cost over the life of the lease provides a more accurate depiction of true ownership costs during any specific time period.

Further, this approach is consistent with generally accepted accounting principles and BNSF's actual accounting for the lease payments at issue. Statement of Financial Accounting Standards No. 13 ("FASB No. 13") requires that such operating lease expenses be accounted for on a "straight-line" basis, *i.e.*, normalized over the life of the lease.⁹⁷ BNSF therefore accounts for its operating lease expenses on a straight-line basis. As a result, BNSF's reported locomotive ownership costs in its R-1 reflect the normalized lease payment. Since URCS costs are based on the R-1 and Congress has mandated that variable costs be based on URCS, it is appropriate to use normalized payments in the calculation of locomotive ownership costs; to do otherwise would produce costs that are inconsistent with BNSF's R-1. Therefore, for each locomotive subject to an operating lease that was used to power the AEPCO train, Messrs. Fisher and Plum calculated the lease expense on a straight line basis for the period costed.

⁹⁶ BNSF.OP.WP.II.A-0043 to 0045.

⁹⁷ FASB No. 13, which sets forth the standard for accounting for operating leases, provides, in part, the following:

Normally, rental on an operating lease shall be charged to expense over the lease term as it becomes payable. If rental payments are not made on a straight-line basis, rental expense nevertheless shall be recognized on a straight-line basis unless another systematic and rational basis is more representative of the time pattern in which use benefit is derived from the leased property, in which case that basis shall be used.

(b) Locomotive Assignment

Although most PRB coal shipments traverse a yard that contains a locomotive maintenance facility (*i.e.*, Alliance, Glendive, or Guernsey), the Otter Tail trains do not. As a result, Otter Tail trains require special coordination by BNSF to adequately service and maintain the SD70MAC locomotives that provide their power. Richard C. Ellis explains above in section II.A.1.a.(3).(a), that when a locomotive on an Otter Tail train is due for a regular shop visit or is in need of repair, BNSF sets it out along the route, where it is picked up by another train and delivered to the shop. For example, units may be removed from the consist of a loaded Otter Tail train at Forsyth. At Forsyth, a train bound for Minnesota or the Great Lakes may pick up the unit and bring it to Glendive, where it is set out and receives the necessary maintenance service. A similar series of events in reverse is used to provide a serviced or repaired unit to the Otter Tail train. An empty train that is returning through Glendive en route to the PRB may pick up a serviced unit that has been released from a mechanical event and bring it to Forsyth, where the road crew switches it out of the consist to await the Otter Tail train. Then, when the Otter Tail train arrives at Forsyth, the road crew replaces the to-be-repaired locomotive with the serviced unit.

BNSF incurs locomotive ownership costs associated with this repositioning of locomotives used in Otter Tail service. These costs are properly included in BNSF's cycle time.⁹⁸ To determine the amount of time associated with repositioning the locomotives, Messrs. Fisher and Plum performed a special study of BNSF's 2001 train movement data to determine the time associated with repositioning the locomotives for use in Otter Tail service and

⁹⁸ As discussed in Section II.A.1.c.(16).(c), the time associated with repositioning locomotives is not included in developing BNSF's locomotive space margin.

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the frequency that such repositioning occurs. This study was also the basis for the switching analysis described above in section II.A.1.c.(6).(b).(ii). First, they identified all locomotive repositioning associated with locomotive change-outs on the Otter Tail train. Next, they identified repositioning of locomotives used in Otter Tail service for which the data was insufficient to determine whether the repositioning occurred exclusively in support of Otter Tail train operations. In certain instances, locomotives did not come directly to the Otter Tail train from a repair shop or did not go directly from use in the Otter Tail train to a repair shop (*i.e.*, the data did not show a mechanical event code for the locomotive at Glendive or Alliance immediately prior to or after use in Otter Tail service). As described above, Messrs. Fisher and Plum determined that 79 percent of the locomotives changed onto Otter Tail trains followed a locomotive shop visit, and 73 percent of the locomotives changed out of Otter Tail trains then made a shop visit.⁹⁹ For the repositioning events, they also determined (1) the number of hours elapsed between a serviced locomotive's release from a repair shop and its switch onto the Otter Tail train; and (2) the number of hours elapsed between a locomotive's switch out of the Otter Tail train and its arrival at the repair shop. Messrs. Fisher and Plum determined that it takes an average of 38 hours for a repositioned locomotive to get to or from a change-out.¹⁰⁰ They then applied the shop-related frequencies identified above to account for the fact that some of the locomotive repositioning time was not directly related to locomotive servicing and repair. Table II.A-12 summarizes the results.

⁹⁹ Electronic workpaper "Loco Shop Special Study-2001.xls."

¹⁰⁰ Electronic workpaper "Loco Shop Special Study-2001.xls."

Table II.A-12
Locomotive Hours for Repositionings Assigned to Otter Tail Service

	Locomotive Hours between Shop Event and Use in Otter Tail Train Service	Percentage of Change-Outs Associated with Shop Events	Additional Locomotive Hours per Change-Out
Locomotives Changed Onto Otter Tail Trains	37.7	79%	29.6
Locomotives Changed Out of Otter Tail Trains	37.9	73%	27.7
Total			57.3

Source: Electronic workpaper "Loco Shop Special Study-2001.xls"

Messrs. Fisher and Plum applied the results of their special study of 2001 operations to the actual locomotive change-out profiles for the 2002 shipments that moved under the challenged rates.¹⁰¹ Specifically, they determined from the 2002 train movement records produced to Otter Tail in discovery that 28 locomotives were changed out of an Otter Tail train and 28 locomotives were changed onto an Otter Tail train at Forsyth, Gillette, Sheridan, or either of the mines in 2002.¹⁰² With this information, Messrs. Fisher and Plum included the additional locomotive time of 57.3 hours associated with a locomotive change-out event for every 0.21 Otter Tail trains.¹⁰³ Thus, Messrs. Fisher and Plum included 12 additional locomotive hours per

¹⁰¹ As neither the route of movement nor location of locomotive shop facilities have changed, the use of 2001 data to develop the proportions to and from the locomotive shops and the associated cycle times is appropriate.

¹⁰² Electronic workpaper "Big Stone Trains 2002.xls," Tab "Consist Change Pivot New."

¹⁰³ 28 change-outs / 132 Otter Tail trains = 1 per 0.21 Otter Tail trains, which is then multiplied by 57.3 locomotive hours per change-out to produce the 12 locomotive hours per Otter Tail train. Electronic workpaper "Big Stone Trains 2002.xls," Tab "Consist Change Pivot New."

train to account for the ownership costs associated with moving the units between the Otter Tail trains and the shop locations on other road trains.

(c) Locomotive Spare Margin

Messrs. Fisher and Plum also calculated a locomotive spare margin based on a special study of the SD70MAC locomotives in BNSF's Alliance pool.¹⁰⁴ The Board has used a 10-percent spare margin in past cases where no data are available to calculate an actual spare margin. However, data produced by BNSF in discovery¹⁰⁵ permit the calculation of an actual spare margin, so Messrs. Fisher and Plum based this locomotive ownership cost on a study of BNSF's discovery data.

Messrs. Fisher and Plum's study examined the *availability* and *utilization* of the locomotives in the pool from which Otter Tail's locomotives are drawn. Both factors must be considered in order to determine the size of a locomotive fleet necessary to provide efficient unit train service to Otter Tail and other coal shippers using the Alliance pool. The availability of a locomotive refers to the total time that a locomotive is capable of being used to power a train. The principal causes of unavailability are the need to make repairs in a shop or to service a locomotive. BNSF's data show that in 2002, the SD70MAC units in the Alliance pool were unavailable { } percent of the time.¹⁰⁶

¹⁰⁴ The detailed train movement records produced to Otter Tail indicate that SD70MACs comprised 98 percent of the locomotive hours for the Otter Tail trains. Further, BNSF uses its SD70MACs almost exclusively for coal transportation.

¹⁰⁵ BNSF/OTP 18408 to 18409, included as BNSF.OP.WP.II.A-0028 to 0029 and electronic workpaper "Spare Margin.xls."

¹⁰⁶ BNSF.OP.WP.II.A-0030 and electronic workpaper "Spare Margin.xls." The { }-percent figure reflects one modification to BNSF's standard measurement of "unavailable" time. The materials produced to Otter Tail in discovery indicate that

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To determine the spare margin necessary to account for this unavailable time, an additional calculation must be made. The purpose of a spare margin is to identify the total locomotive requirements necessary to provide the issue traffic service. Therefore, the actual locomotive hours for the service must be increased by a factor -- the spare margin -- that reflects the difference between the amount of time in service and the amount of time not in service. To take an example, assume that a locomotive is in service for 90 hours and is in a repair shop for 10 hours. In other words, the locomotive is unavailable for 10 percent of the time. However, to capture the full 100 hours of locomotive ownership cost for that locomotive, it would be necessary to apply a spare margin to the 90 hours of in service time that is greater than 10 percent.¹⁰⁷ The proper formula for calculating the spare margin factor based upon the locomotive's availability is: "Time out of service"/(100% minus "Time out of service"). In the above example, a 10-percent unavailability factor would produce an 11 percent spare margin.¹⁰⁸ Thus, to account for the { }-percent of the time that locomotives in the Alliance pool are unavailable, a spare margin of { } percent must be applied.¹⁰⁹

The second spare margin factor must be calculated to account for the time that the locomotives are available but are not being "utilized" on a train. "Utilization" refers to the

BNSF's reports usually include the following categories of time as unavailable: (1) Shop; (2) Sanding/Fueling/Servicing; and (3) Other Unavailable. Although it is unclear whether "Sanding/Fueling/Servicing" time is included in the cycle times to which BNSF applies the spare margin, in order to remove the possibility of a double-count, Messrs. Fisher and Plum excluded this time from unavailable time, thereby including it in available time.

¹⁰⁷ $90 + 10\% \times 90 = 99$, not 100.

¹⁰⁸ $10\% / 90\% = 11\%$.

¹⁰⁹ { }.

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amount of time that an “available” locomotive is actually in use. No railroad can run with perfect utilization of its locomotive fleet. While BNSF’s operations in the PRB are highly efficient, it is not possible to schedule train operations in a way that allows each locomotive in coal service to be assigned to revenue-generating service during every moment that the locomotive is available. Such a razor’s-edge approach to establishing a locomotive fleet would ensure delays that are unacceptable to BNSF’s unit train shippers. Extra units must be available so that train operations can be carried out with a minimum of delay.

BNSF maintains data in the ordinary course of business that measure utilization of the Alliance Pool locomotives and it produced such data in this litigation.¹¹⁰ Utilized time, for purposes of BNSF’s reports, is the amount of time that a locomotive is in revenue-producing service relative to the amount of time it is available (*i.e.*, not in a repair or service facility.) All of the time that units spend on coal trains, including time at the mines, plants, and intermediate yard dwell on the same train, is considered “utilized.”¹¹¹ Utilized time also includes the time associated with repositioning locomotives -- including locomotives used in Otter Tail service -- to and from repair facilities.¹¹²

Thus, a locomotive that is in service for 90 hours of 100 available hours would have a 90-percent utilization. (If the locomotive was in the shop for another 15 hours, that time would not be reflected in the utilization figures, which consider only the available time.)

¹¹⁰ BNSF/OTP 18408 to 18409, included as BNSF.OP.WP.II.A-0028 to 0029.

¹¹¹ BNSF/OTP 18408, included as BNSF.OP.WP.II.A-0028.

¹¹² Thus, the time associated with bringing locomotives to and from the Otter Tail train is treated as “utilized” time and, therefore, it is not included in BNSF’s locomotive spare margin.

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BNSF's data show that in 2002 the SD70MAC locomotives in the Alliance Pool were utilized { } percent and not utilized { } percent of the available time.¹¹³ Using the formula described above to calculate a spare margin factor produces an additional "utilization" spare margin of { } percent necessary to cover the available but non-utilized time.¹¹⁴

In order to account for the total amount of time that BNSF's Alliance fleet is not in revenue-producing service, the cycle time for the Otter Tail trains must be increased to capture both the "Unavailable" time and the "Non-Utilized" time. Because the cycle time for the Otter Tail trains to which the spare margin is applied excludes both non-utilized and unavailable time, a composite additive that captures both unavailable and non-utilized time should be applied. Since the Alliance pool locomotives are available for service { } percent of the time, and when available, are utilized only { } percent of the time, the overall utilization rate, { } percent, is determined by multiplying the availability percentage by the utilization percentage. Applying the formula discussed above for calculating a spare margin factor results in a spare margin of { } percent that must be applied to the cycle times for the Otter Tail trains to represent BNSF's full locomotive ownership requirements for the issue traffic movement.¹¹⁵ Messrs. Fisher and Plum use the 2002 locomotive spare margin in calculating variable costs for the First Quarter 2003.

¹¹³ BNSF.OP.WP.II.A-0030 and electronic workpaper "Spare Margin.xls."

¹¹⁴ { }.

¹¹⁵ If the actual utilization rate is { } percent, then locomotives are not in use { } percent of the time. { }.

(17) Cabooses and EOTD Ownership Expense

Because Big Stone coal trains use end-of-train devices (“EOTDs”) instead of cabooses, Messrs. Fisher and Plum removed operating and ownership expenses related to cabooses from the “train-mile other” URCS unit cost. They made a movement-specific adjustment and calculated variable costs for EOTDs using purchase information produced in discovery.¹¹⁶

(18) Third-Party Loading Expense

For trains loading at Eagle Butte, Messrs. Fisher and Plum included the { }-per-ton contract rate that BNSF pays.¹¹⁷

(19) Indexing

Messrs. Fisher and Plum indexed the BNSF 2002 URCS unit costs to each of the quarters in 2002 and First Quarter 2003 levels using the method adopted in ICC Statement 1E3-80 (April 1980), as supplemented in Complaints Filed Under Section 229 of the Staggers Rail Act of 1980, 365 I.C.C. 507 (1980). Messrs. Fisher and Plum segregated BNSF expenses into six categories: (1) wages without T&E employees; (2) wage supplements (less a portion of the unemployment insurance that is excluded when specific T&E wages are used); (3) materials and supplements without fuel; (4) fuel; (5) other indexable expenses, including purchased services, taxes and general expenses; and (6) non-indexable expenses, which include depreciation and other items not subject to price changes. Messrs. Fisher and Plum used AAR indices and the

¹¹⁶ BNSF.OP.WP.II.A-0046 and electronic workpaper “2002 EOTD Data.123.”

¹¹⁷ BNSF.OP.WP.II.A-0048 to 0049.

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Bureau of Labor Statistics' Producer Price Index¹¹⁸ (to index other indexable expenses) to develop a composite index for all groups except crew wages, fuel, and non-indexable expenses.

For crew wage expenses, as the results of the special study of 2002 BNSF payroll records produced in discovery are specific to each quarter, no index is necessary to develop the 2002 variable costs. To calculate First Quarter 2003 variable costs, Messrs. Fisher and Plum applied the Western Region "Wages and Wage Supplements" index to the Fourth Quarter of 2002 wages calculated for shipments moving under the challenged rates.

To develop fuel expenses, Messrs. Fisher and Plum used the actual BNSF fuel cost per gallon for each of the five quarters costed.¹¹⁹

2. Summary of Variable Costs and R/VC Ratios

Based on the above procedures, Messrs. Fisher and Plum calculated variable costs and revenue-to-variable cost ratios by origin mine for First Quarter 2002 through First Quarter 2003. Table II.A-13 summarizes the results, and Exhibit II.A-1 provides totals by individual URCS cost component. The electronic workpapers contain the underlying detail.¹²⁰

¹¹⁸ The use of the PPI conforms to the method suggested by the Board in the *FMC* decision. *FMC* at 91.

¹¹⁹ BNSF.OP.WP.II.A-0050 to 0067 and electronic workpaper "BNSF-02-IE3-INDEX.123."

¹²⁰ Electronic workpaper "BNSF OTP OPEN PRG.123."

Table II.A-13
Variable Costs and R/VC Ratios
For Shipments from Belle Ayr and Eagle Butte to Big Stone

	Aluminum Car Rate		
	Rate	Variable Cost	R/VC
<i>Belle Ayr</i>			
1Q02	\$13.49	\$5.81	2.32
2Q02	\$13.49	\$6.03	2.24
3Q02	\$13.49	\$5.90	2.29
4Q02	\$13.49	\$5.95	2.27
1Q03	\$13.76	\$6.37	2.16
<i>Eagle Butte</i>			
1Q02	\$13.49	\$5.71	2.36
2Q02	\$13.49	\$5.76	2.34
3Q02	\$13.49	\$5.82	2.32
4Q02	\$13.49	\$5.85	2.30
1Q03	\$13.76	\$6.35	2.17

Source: Exhibit II.A-1 and electronic workpaper "BNSF OTP OPEN PRG.123"

3. Other – Variable Cost Evidence in Context

The evidence in this section addresses the economic appropriateness of the rates currently in effect for coal transportation to the Big Stone plant. It is intended to provide a factual context for the variable cost evidence that BNSF has submitted in prior sections of this Narrative. BNSF acknowledges that the revenue to variable cost ratio on the Big Stone movement is well above the jurisdictional threshold. This ratio, however, is not a matter of BNSF charging Xcel an abusive or monopoly price. It is a matter of BNSF engaging in the sort of demand-driven pricing the *Coal Rate Guidelines* recognize to be essential to railroad financial health.

An expert retained by BNSF, Kenneth J. Slater, evaluated demand for coal at the Big Stone plant and whether the increase in BNSF's rates from the prior contract rate to the current common carrier rate resulted in decreased demand for coal transportation provided by BNSF to Big Stone. As demonstrated by his statement of qualifications, Mr. Slater has extensive

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experience with the electric utility industry and the factors dictating the fuel requirements and economics of power production of particular generating assets.

From his examination of the past and present delivered coal costs at the Big Stone plant, Mr. Slater concluded that there was a substantial increase in the overall delivered cost of coal at the Big Stone plant at the beginning of January, 2002, immediately following the expiration of the transportation contract with BNSF. The larger part of this increase was due to a change in the cost of the coal f.o.b. mine, rather than to the somewhat smaller change in transportation rates. Mr. Slater observed, however, that the overall increase in delivered coal costs did not affect consumption of coal at Big Stone.

Mr. Slater's investigation led him to conclude that coal consumption at Big Stone is related not just to the need for generation by the three owning utilities, but also to their ability to sell surplus generation from coal-fired generating units at attractive prices. This ability has not been diminished by the increase in cost of delivered coal at the Big Stone plant. Mr. Slater also determined from an examination of the future supply/demand situation in the Mid-Continent Area Power Pool, (MAPP), the North American Electric Reliability Council region to which the three owning utilities belong and into which they sell much of their surplus generation,¹²¹ that there is no reason why the demand for generation from Big Stone will decline from current levels.

From his analysis, Mr. Slater concluded both that the increase in transportation rates produced no material change in the consumption of coal at the Big Stone plant and that

¹²¹ The Big Stone plant is jointly owned by Otter Tail Power Company ("OTP"), MDU Resources, Inc. ("MDU"), and Northwestern Public Service Company ("NWPS"). Otter Tail is the operating agent for the plant.

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there was no reason to believe demand for surplus generation from Big Stone would decrease in the future. Mr. Slater therefore determined that, in the vicinity of currently contracted f.o.b. mine coal prices and the current transportation rates being charged by BNSF, demand for coal, and hence for coal transportation, at Big Stone is inelastic.

a. General Factors Affecting Demand For Fuel at Particular Facilities

Mr. Slater began his analysis by identifying factors that govern demand for coal at a generating facility. The quantity of fuel consumed by a thermal generating unit is determined by the way it is dispatched by the entity responsible for its operation. There are several basic tenets of generation dispatch to which all systems adhere in at least a basic manner:

- (i) the objective of the dispatch process is to minimize the variable costs of system operation while,
- (ii) ensuring safety to the public, employees and the power system equipment, and,
- (iii) meeting the demands of the customers in a reliable and secure manner.

For many utilities, including those that jointly own the Big Stone plant, a significant factor in the minimization of system variable costs is participation in power and energy transactions with other utilities. Utilities that, on an hour-by-hour basis, have surplus coal-fired generation can often find ready markets for that surplus at prices which substantially exceed their own incremental production costs, thus reducing their own net variable production cost.

A number of general characteristics of electric power generation affect dispatch decisions. First, the demands of the customers vary instant-by-instant, but do follow reasonably foreseeable hour-by-hour daily, weekly and seasonal patterns. Second, because alternating current electricity cannot be stored, these demands must be met with generation instant-by-

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instant as the demands occur. At any particular time, surplus generating capability not used to satisfy a utility's own native load must either be used to generate electricity to be sold in wholesale markets or lie idle. Third, the efficiency of an individual generator varies significantly over its operating range, and it will have a variety of operating constraints. These operating constraints include such matters as minimum operating capacity, minimum shutdown time, start-up cost, and speed of changing output levels. Fourth, the use of an individual generating plant will obviously be governed by the amount of time the generating units are available and can also be affected by the capability of the transmission network to provide customer power and voltage needs in the vicinity of the plant and to freely transport the plant output to customers. Plant usage is also governed by the extent to which generation from the plant increases or decreases the energy losses which result from energy flowing over the system's transmission lines.

Within the limitations imposed by these various system and generator characteristics and constraints, the objective of minimizing variable operating costs requires that the generators and other resources with the lowest per unit variable operating costs associated with meeting customer demands make maximum contributions to the overall required supply for native load and profitable sales. The variable operating cost of a generating unit associated with meeting customer demands is the product of its "heat rate," (mmBTU per MWh), and its delivered fuel cost together with the cost of any necessary emission allowances or abatement, (\$ per mmBTU), plus any variable operation and maintenance cost, (\$ per MWh), recognized by the unit's operator, together with an overall multiplier to recognize the impact of the unit's generation on transmission losses.

Based on these considerations, Mr. Slater explained that the amount of fuel consumed by a particular utility generating unit will, in general terms, be determined by:

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- (a) the retail and wholesale demands to be served by the utility;
- (b) the set of resources able to be used by the utility to satisfy those demands and sales opportunities and the availability of those resources;
- (c) the variable operating cost of the generator relative to the variable costs of all other resources including the resources of potential purchasers;
- (d) the impacts of transmission network limitations and energy losses; and,
- (e) the somewhat lesser effects of various other system and generator operating constraints.

Mr. Slater then evaluated each of these factors with respect to the Big Stone plant.

b. Evaluation of the Factors Affecting Fuel Consumption at Big Stone

(1) Native Load Demand

Mr. Slater first determined the scope of customer demand affecting Big Stone.

Customer demand, or “native load,” at the three owning utilities is expected to grow from current levels as is shown in Table II.A-14 below, which was developed from the 2002 MAPP EIA Form 411 Report.

**Table II.A-14
Forecast Native Load**

Year		MDU Summer Peak (MW)	NWPS Summer Peak (MW)	OTP Summer Peak (MW)
2002	Forecast	434	276	586
2011	Forecast	477	333	649

With this growing load, all three owning utilities will experience an increasing need for generation from their lower cost resources.

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(2) Wholesale Demand

Mr. Slater also assessed the likelihood that surplus coal generation could be sold in wholesale power markets. In recent years, all three owning utilities have made substantial opportunity sales of available energy at prices substantially greater than the fueling costs of the Big Stone plant. Table II.A-15 below shows these sales, and the average price obtained, for the years 1998 through 2002. A comparison of these sales to the 2002 forecast native load for each utility demonstrates that such sales represent a substantial fraction of the annual native load requirements of these three utilities.

Table II.A-15
Market Sales of Power¹²²

<i>Year</i>		<i>MDU</i>	<i>NWPS</i>	<i>OTP</i>
1998	Sales – MWh	586,540	256,186	1,180,728
	– \$/MWh	20.25	16.41	24.50
1999	Sales – MWh	943,520	417,620	1,114,844
	– \$/MWh	21.17	15.50	36.90
2000	Sales – MWh	930,318	373,713	1,415,601
	– \$/MWh	24.32	24.84	44.45
2001	Sales – MWh	898,178	360,912	1,776,223
	– \$/MWh	29.93	63.27	53.46
2002	Sales – MWh	784,530	562,988	1,455,539
	– \$/MWh	19.58	24.53	54.80
2002	Forecast Load - MWh	2,148,000	1,323,000	3,924,000

The potential for future sales from the coal-fired plants owned by MDU, NWPS and OTP can be judged from a comparison of the growth in load in the MAPP region with the planned installation of new base load generation. As shown in Table II.A-16 below, developed

¹²² Source: FERC Form 1 filings.

from the 2002 MAPP EIA Form 411 Report, planned increases in base load generating capacity (predominantly coal-fired) is a small fraction of the forecast increase in summer peak load. Forecast summer peak requirements for MAPP will increase by 5,901 MW but base load generating capacity will increase by only 836 MW. All other generating capacity additions are intermediate and peaking plants with substantially higher variable operating costs than coal-fired plants.

Table II.A-16
Planned Base Load Additions

<i>Year</i>	<i>MAPP Forecast Summer Peak (MW)</i>	<i>Increase from 2002 to 2011 (MW)</i>	<i>MAPP Planned Base Load Additions (MW)</i>
2002	33,285		
2011	39,186	5,901	836

There should be no reduction in demand for any surplus coal-fired energy that Big Stone can produce.

(3) Generation Resources

Mr. Slater next considered the generating resources able and available to satisfy the requirements of the utilities. Most of the generating capacity owned by the three utilities is presently coal-fired. Their official filings with the federal government do not project any additional coal-fired capacity. In fact, as shown in Table II.A-17 below, developed from the 2002 MAPP EIA Form 411 Report, only one of the three, Otter Tail Power, has plans to add any generating capacity. Otter Tail Power's additions are insufficient to keep pace with projected native load growth. Comparison of Table II.A-14 with Table II.A-17 below shows that Otter Tail Power's summer peak native load is forecast to increase by 10.8 percent between 2002 and

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2011 while its summer peak generating capacity will increase by only 5.8 percent. Table II.A-16 shows that over this same period demand within MAPP is projected to grow at an even faster pace. Otter Tail's expansion plans, however, do not include any substantial amount of coal-fired, or other base load, capacity.¹²³

Table II.A-17
Projected Generating Capacity

Year		MDU Summer Generating Capacity (MW)	NWPS Summer Generating Capacity (MW)	OTP Summer Generating Capacity (MW)
2002	Forecast	434	312	638
2011	Forecast	434	312	675

With no new base load resources, all three utilities will have to rely on their existing coal-fired resources.

¹²³ In 2001, Otter Tail made a filing with the South Dakota Public Utilities Commission indicating that it may be contemplating adding a 600 MW coal-fired electric generating facility adjacent to the existing Big Stone Plant. *See* Order Granting Motion to Reconsider Order of December 5, 2001, and Order Designating Affected Area and Local Review Committee, *In re Filing by Otter Tail Corp Regarding its Notification of Intent to Apply for an Energy Conversion Facility*, Docket No. EL01-027 (Jan. 31, 2002). This additional capacity is not reflected in the finalized 2002 data filed with the federal government and also is not contained in a May 28 draft of the 2003 MAPP EIA Form 411 report reviewed by Mr. Slater. The draft report does show the addition of a small combustion turbine (CT) peaking unit at MDU in 2003 and two coal-fired units elsewhere in MAPP totaling 900 MW for the summer of 2009. Even if Big Stone II and both 2009 units are added, however, the total base load additions in MAPP would still be less than would be needed to keep pace with the forecast increase in load reflected in Table II-16.

(4) Variable Operating Costs

Mr. Slater then determined that the cost advantage of coal-fired generation over oil and gas-fired generation would support continued high utilization rates at Big Stone. There is a vast difference between the fueling costs of the coal-fired generating capacity owned by MDU, NWPS and OTP and the fueling costs of oil and gas plants. As is shown in Exhibit II.A-5, fueling costs for the most efficient modern gas-fired combined cycle units is at least 70% higher than for any of these utilities' coal-fired plants at today's expected gas prices. Oil-fired generating units and less efficient gas-fired units are even more expensive. Fueling costs for nuclear units are generally below those of coal-fired units. Hence, the only generation which can reasonably be expected to "compete" with the coal-fired units owned by MDU, NWPS and OTP is other coal fired generation. As discussed above, however, the current plans of the three utilities will not add sufficient capacity of any kind to keep pace with even their own native load growth. Likewise, addition of base load units by other utilities within MAPP will not keep pace with growing demand within MAPP. Hence, economic operation will not cause a lowering of output from Big Stone.

(5) Transmission Network Limitations and Other Constraints

The 2002 MAPP EIA Form 411 Report shows no system additions (generation or transmission) which would be expected to result in an impediment to the use of energy generated at the Big Stone plant.

c. Actual Dispatch Results in Recent Years Confirm that Demand for Coal-Fired Generation from Big Stone Remains Strong Even at Higher Delivered Coal Prices

Mr. Slater confirmed that historic coal consumption at Big Stone is consistent with his expectation that Big Stone would perform at or close to its capability, even in the face of

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higher delivered coal prices, due to the strong market for surplus coal-fired generation. Exhibit II.A-6 displays the dispatch results for all MDU, NWPS and OTP coal fired plants during the period 1998 through 2002. The level of dispatch for each unit is measured in "Annual Capacity Factor," which is the ratio of the energy produced by a unit to the energy the unit would produce if it operated at maximum output for all hours of the year.¹²⁴

From this comparison it can readily be seen that the three large units (Neal #4, Coyote and Big Stone) all operate at, or close to, their capabilities. The six smaller units at Hoot Lake, Heskett and Lewis & Clark appear to be operating at less than capability. This is not unusual for smaller units, because it is only the smaller units that possess the operational flexibility to shut down during low load periods, such as some nights and weekends, and still be available for service during adjacent higher load periods.

Exhibit II.A-7 displays the monthly operating results for Big Stone for the period 1998 through 2002. Once the effects of scheduled maintenance and perhaps major forced outages are recognized, it is clear that, on a month-by-month basis, Big Stone has and still does operate at or close to its maximum capability, and that its operation has not been diminished due to the change in delivered coal costs. In all years, Big Stone appears to have had maintenance outages during the lower load spring and fall months, which would not be unusual for such a unit. In both 1998 and 2002, the fall outages appear to have been extended significantly, presumably to accommodate a major periodic maintenance or repair activity such as a turbine

¹²⁴ Of course, a generating unit cannot operate at maximum capacity all the time. Regularly scheduled maintenance periods are required to keep the unit in good condition, and, despite these outages, forced outages and derations occur frequently. Without taking such outages and derations into account, it is not possible to determine just how close to capability a unit is being operated.

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overhaul. Except for the maintenance/major outage months in question, the month-by-month capacity factors for all five years follow similar patterns. The level of output over the months of 2002 is that of a unit being dispatched at its maximum output whenever it is available, meaning that the unit produced about as much energy as it could, irrespective of its delivered fuel cost. Therefore, the amount of coal consumed at Big Stone has not been affected by the change in delivered coal costs at the end of December 2001. At the delivered coal prices in force during 2001 and 2002, the coal consumption at Big Stone, and demand for coal transportation to Big Stone, is inelastic.

d. Increased Transportation Rates Contribute Only Slightly to Big Stone's Higher Delivered Coal Costs

In recent years, Big Stone has been burning sub-bituminous coal from the Powder River Basin, as well as small quantities of automotive tire chips and agricultural waste plus start-up fuel. The delivered cost of the coal is by far the most significant determinant of Big Stone's fueling cost.

Recently, Big Stone's coal has been purchased in the Powder River Basin under a sequence of relatively short-term pricing arrangements. The pricing arrangement for coal delivered in 1998 and 1999 terminated at the end of 1999. The pricing arrangement for 2000 and 2001 coal terminated at the end of 2001, while the pricing arrangement under which 2002 coal has been purchased will terminate at the end of 2004. Such short-term contractual arrangements often exhibit significant term-to-term variations, which can be seen in the reported delivered prices of the fuel. Table II.A-18 below clearly shows "step" changes in delivered coal costs for Big Stone at the end of 1999 and the end of 2001.

Table II.A-18
Big Stone Delivered Coal Prices¹²⁵

<i>Year</i>	<i>Big Stone Annual Average Delivered Coal Price ¢ /mmBTU</i>
1998	92.7
1999	93.7
2000	99.3
2001	103.3
2002	129.5

It is the 26.2 ¢/mmBTU change between 2001 and 2002 which has significance in this case.

Transportation rates, however, account for less than { } percent of the increase in delivered coal costs. Otter Tail paid, on average, only { } more per ton for coal transported in aluminum cars in 2002 than it had under the contract with BNSF.¹²⁶ With a heat content of about 17 mmBTU/ton, this translates to an increase of only { } ¢/mmBTU due to increased transportation rates. It is clear that the change in the purchase price of the coal for Big Stone, at the end of 2001, is far more significant than the change in transportation rates which occurred at the same time.

¹²⁵ Source: FERC Form 423.

¹²⁶ BNSF electronic work paper "Rate-History.xls" contains the rates on which this calculation was based.

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- e. Demand for Coal Transportation at Big Stone is Highly Inelastic Within the Range of BNSF Transportation Rates and F.O.B. Mine Prices

On the basis of the present and future supply and demand situation for the three utilities in particular, and for MAPP in general, Mr. Slater concluded that Big Stone should continue to be dispatched as a base load resource at all times, and its energy production should continue to be close to its capability. This dispatch situation at Big Stone has been and should be unaffected by the change in coal delivery rates at the end of December 2001. Indeed, even the 25% increase in the cost of delivered coal shown in Table II.A-18 (due mostly to higher mine prices) did not materially affect coal consumption at Big Stone. Mr. Slater therefore concluded that the delivery rates charged by BNSF in 2001 and 2002 have not had and will not have any negative impact on the consumption of coal at the Big Stone plant. From all perspectives, at the f.o.b. mine prices and coal delivery rates effective both before and after expiration of BNSF's coal contract at the end of 2001, the coal consumption at Big Stone is inelastic as is Big Stone's demand for transportation of that coal.

**IV. Witness Qualifications
and Verifications**

IV. WITNESS QUALIFICATIONS AND VERIFICATIONS

1. Richard C. Ellis

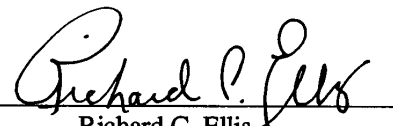
Richard C. Ellis is Assistant Vice President, Unit Train Operations of The Burlington Northern and Santa Fe Railway Company ("BNSF"). His business address is 2600 Lou Menk Drive, Fort Worth, Texas 76131-2830. He has responsibility for all unit train operations on the BNSF.

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

Mr. Ellis is sponsoring evidence relating to the operation of BNSF unit coal train service between the PRB and Otter Tail's Big Stone Generating Station. His evidence is incorporated in Section II.A.1.a of the Narrative. Mr. Ellis has signed a verification of the truth of the statements contained therein. A copy of Mr. Ellis's verification is attached hereto.

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

Executed on June 11, 2003


Richard C. Ellis

2. Benton V. Fisher

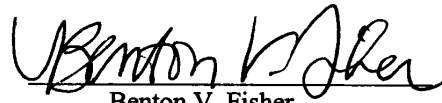
Benton V. Fisher is a Director at FTI Consulting, Inc., an economic and financial consulting firm. His business address is 1201 Eye Street, N.W., Suite 400, Washington, DC 20005. Since 1991, Mr. Fisher has been involved in various aspects of transportation consulting including economic studies involving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

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

Mr. Fisher is sponsoring evidence relating to BNSF's variable costs for the issue movement. His evidence is contained in Sections II.A.1.b, II.A.1.c and II.A.2 of the Narrative. Mr. Fisher has signed a verification of the truth of the statements contained therein. A copy of Mr. Fisher's verification is attached hereto.

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

Executed on June 11, 2003


Benton V. Fisher

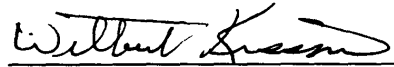
3. Wilbert Kissner

Wilbert Kissner is the BNSF Division Trainmaster at Aberdeen, South Dakota, a position he has held since 1991. His business address is 1 North Main Street, Aberdeen, South Dakota 57401. Mr. Kissner has worked for a railroad since 1971 and has been employed by BNSF or its predecessors since 1979. Among other positions, he has served as the Trainmaster/Roadforeman at the Alliance, Nebraska Yard and as Terminal Trainmaster at the Northtown, Minnesota. In his current position, Mr. Kissner oversees all operations in a territory that includes 405 miles of main line and 140 miles of branch line, and includes Otter Tail Power Company's Big Stone Generating Station.

Mr. Kissner is sponsoring evidence relating to the operation of Otter Tail trains between Hettinger, North Dakota and Otter Tail's Big Stone Generating Station. His evidence is contained in Section II.A.1.a of the Narrative. Mr. Kissner has signed a verification of the truth of the statements contained therein. A copy of that verification is attached hereto.

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

Executed on June 5, 2003



Wilbert Kissner

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the PRB.⁵⁵ Thus, for each locomotive change-out on an Otter Tail train, typically two switching events occur at Glendive. First, non-Otter Tail road crews switch a fresh locomotive from the repair shop onto a train for transport to Forsyth. Second, non-Otter Tail road crews switch the locomotive previously used in Otter Tail service from the train on which it arrives at Glendive and take it to the repair shop. Mr. Ellis explained that each such switching event requires 15 minutes of switching for a total of 30 minutes per change-out.

To determine on a per-train basis the number of minutes associated with this switching activity, Messrs. Fisher and Plum conducted a special study of the frequency that locomotive change-outs on the Otter Tail train result in switching at Glendive/Alliance. Using the 2001 train movement records for Otter Tail trains, they identified the locomotives that were either changed out of or onto an Otter Tail train. For those records, they then recorded the locomotive events immediately preceding a change onto the Otter Tail train, and the locomotive events immediately following a change-out of the Otter Tail train. From this information, Messrs. Fisher and Plum identified the change-outs for which the data did not provide sufficient detail to determine whether the change-out was exclusively attributable to the operational needs of the Otter Tail train.⁵⁶ It also included units that were not in a repair shop immediately before use in Otter Tail service and units that were not taken to a repair shop immediately after use in

⁵⁵ As discussed in footnote 10, this repositioning scenario is also performed between Alliance and Gillette, Sheridan, or other locations in the PRB.

⁵⁶ This included change-outs of locomotives that were on the Otter Tail train for less than 2 days, which Messrs. Fisher and Plum assumed were for purposes of repositioning locomotives for other train service.

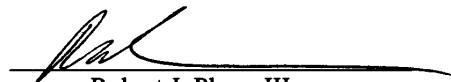
4. Robert J. Plum

Robert J. Plum is a Director of FTI Consulting, Inc., an economic and financial consulting firm. His business address is 1201 Eye Street, N.W., Suite 400, Washington, DC 20005. Mr. Plum holds a Bachelor's Degree in Accounting and an M.B.A. degree with a concentration in finance. He began his career in 1979 with Wyer Dick & Company, a consulting firm that specialized in railroad costing issues. Since that time he has been involved continuously in analyzing accounting, cost, financial and engineering issues associated with railroad operations and pricing. He has conducted numerous variable and stand-alone cost studies, conducted field studies of railroad operations, evaluated railroad contract provisions, and developed computer models to evaluate railroad engineering and operating requirements.

Mr. Plum is sponsoring evidence relating to BNSF's variable costs for the issue movement. His evidence is contained in Sections II.A.1.b, II.A.1.c and II.A.2 of the Narrative. Mr. Plum has signed a verification of the truth of the statements contained therein. A copy of Mr. Plum's verification is attached hereto.

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

Executed on June 11, 2003



Robert J. Plum, III

5. Kenneth John Slater

Kenneth John Slater is President of Slater Energy Consultants, Inc., ("Slater Consulting"), which he founded in August 1990. His business address is 3370 Habersham Road, Atlanta, Georgia 30305. The firm is an engineering-economic and management consultancy with particular expertise in energy and public utility matters. The firm provides advice to electric utilities, generators, customers and other participants in the electric utility business, and analysis of supply/demand options, power system reliability, operating situations and events, replacement power costs, avoided costs, new technologies, market prices and generation dispatch, deregulated market rules, strategic decisions, public policy matters and ratemaking issues.

Mr. Slater obtained a Bachelor of Science degree in Pure Mathematics and Physics in 1960 and a Bachelor of Engineering degree in Electrical Engineering in 1962, both at the University of Sydney, Australia. He also received a Master of Applied Science degree in Management Sciences at the University of Waterloo in Ontario, Canada in 1974.

Since 1957, Mr. Slater has been employed in the electric and gas utility industries in Australia, Canada and the United States. Immediately prior to founding Slater Consulting, he was Senior Vice President and Chief Engineer at Energy Management Associates, Inc. ("EMA") in Atlanta, where he worked from 1983 to 1990. EMA provided industry specific software and consulting services to the electricity and gas supply industries. At EMA, after initially contributing to the firm's utility software development functions, Mr. Slater became the head of its consulting practice, leading or making significant contributions to a number of consulting engagements related to valuation or analysis of power supplies and power supply contracts, supply/demand planning, damages assessments, operating reserve requirements, replacement

power cost calculations, utility merger valuations, operational integration of utility systems, power pooling, system reliability, ratemaking, power dispatching and gas supply studies.

From 1969 until 1983, Mr. Slater worked in the Canadian utility industry, initially at Ontario Hydro, one of North America's largest electric utilities, where he headed the Production Development Section of the utility's Operating Department. There he developed computer models, including one which, for more than 20 years, produced the daily generation schedules for all of the Ontario Hydro generating resources (hydraulic and nuclear plants, coal, oil and gas-fired units). Another, the original version of PROMOD, was used within Ontario Hydro for coordination and optimization of production planning and resource management, including evaluating purchase and sale opportunities, fuel supplies and important outages.

After leaving Ontario Hydro, Mr. Slater worked as Manager of Engineering at the Ontario Energy Board (Ontario's utility regulatory commission). Following this, he became a self-employed consultant and contracted to be the Research Director for the Royal Commission on Electric Power Planning. It was at this time that Mr. Slater started his own firm, Slater Energy Consultants, Inc., in Toronto, Canada and consulted widely in Canada and the United States for utilities, governments, public inquiry commissions, utility customers and other consulting firms. It was during this time and his time at EMA that Mr. Slater was a major developer of PROMOD III[®] (which has now become PROMOD IV[®]), a widely recognized electric utility planning and reliability program. At EMA Mr. Slater also designed a gas supply model for gas distribution utilities called SENDOUT[®].

Prior to 1969, Mr. Slater was employed by the Electricity Commission of New South Wales, a mostly coal-fired electric utility and the largest electric utility in Australia, where he worked in the construction, planning and operation of that system's generating plants and

transmission network, and, in his final position, was responsible for the day-to-day operation of one of the six regions comprising that system.

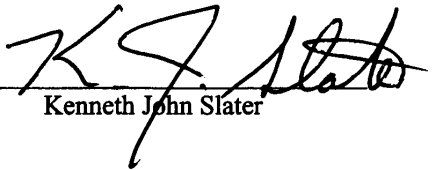
Mr. Slater has provided expert testimony in numerous regulatory proceedings before state and provincial agencies in the United States and Canada and at the Federal Energy Regulatory Commission and Surface Transportation Board. He has also appeared in Federal Bankruptcy Court, state courts and in civil arbitration proceedings. Mr. Slater also served on many occasions as an expert examiner for the Royal Commission on Electric Power Planning in Ontario.

A copy of Mr. Slater's resume, which includes a list of his publications, is attached hereto as Attachment A. A list of other cases in which Mr. Slater has provided expert testimony since about 1983 is attached hereto as Attachment B.

Mr. Slater is sponsoring evidence relating to Otter Tail's inelasticity of demand for coal transportation. His evidence is contained in Section II.A.3 of the Narrative. Mr. Slater has signed a verification of the truth of the statements contained therein. A copy of Mr. Slater's verification is attached hereto.

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

Executed on June 11, 2003


Kenneth John Slater

Technical Qualifications
and
Professional Experience

Kenneth John Slater

EDUCATION

B.Sc.,	Pure Mathematics and Physics,	Sydney University, 1960
B.E.,	Electrical Engineering,	Sydney University, 1962
M.A.Sc.,	Management Sciences,	University of Waterloo, 1974

PROFESSIONAL AFFILIATIONS

Association of Professional Engineers of Ontario

- Registered Professional Engineer

Institute of Electrical and Electronics Engineers

- Member of Power Engineering Society
- Past member of Power System Engineering Committee
- Past member of System Economics subcommittee and working group

EXPERIENCE

1957-62	Mr. Slater was a Junior Professional Officer at the Electricity Commission of New South Wales attending university and undergoing on-the-job training in power station and substation design, construction, protection, maintenance, and operation.
1962-67	Mr. Slater was a Professional Engineer Grades 1 and 2 at The Electricity Commission of New South Wales, engaged in a variety of functions within the areas of Power Station Construction, Generation Planning, System Operation and Load Dispatch.
1967-69	As Assistant Engineer Area Operation/Sydney West (Professional Engineer, Grade 3) with the Electricity Commission of New South Wales, Mr. Slater was responsible for the day-to-day operation of the Sydney West Area (approximately 20% of the State System).

He supervised the day-to-day work of more than 18 operators as they provided safe working conditions for Commission staff and others on system apparatus, and as they provided safe, secure, reliable and economic operation of this portion of the State System.

He performed the liaison function with head office staff, other divisions and customers on all operating activities, directed the performance of complicated operating procedures and trained both regular and emergency operators.

While he was in this and his previous position, Mr. Slater was responsible for the design and manufacture of the live line testing devices used by the Commissions' operators and linemen.

As well, he assumed responsibility for the preparation and execution of "black start" exercises and for the arrangement and detailing of complicated switching for major rearrangements and commissionings on the State System. He also developed original computer applications.

1969-74

As Engineer, and then Senior Engineer, heading the Production Development Section of Ontario Hydro's Operating Department, Mr. Slater was engaged in developing computational procedures and computer programs for Production Economics and Resource Management.

Major contributions included (1) the development and implementation of the computer program which, for more than 20 years, produced the daily generation schedule for the Ontario Hydro System, (2) the formulation of a Stochastic System Model to coordinate and optimize the production planning, maintenance planning, interchange planning and resource management of the Ontario Hydro System, and (3) the development of PROMOD, a Probabilistic Production Cost and Reliability model, the first version of the "core" of the Stochastic Model in (2) above.

As a member of the project group implementing the Operating Department's Data Acquisition and Computer System, he headed a work unit responsible for providing the application programs related to generation scheduling, power interchange and resource management. Also, he held responsibilities in the areas of policy determination, analytical techniques and the planning of future applications.

1974-75 As Manager of Engineering at the Ontario Energy Board, Mr. Slater was heavily involved in public hearings into Ontario Hydro's System Expansion Plans and Financial Policies, and into Ontario Hydro's Bulk Power Rates.

During this time, he provided much of the power system engineering input necessary for the start-up and formulation of the public hearing process related to Ontario Hydro. He also provided the engineering input for the regulation of Ontario's three major investor owned gas utilities.

1975-76 For 12 months, Mr. Slater was a private consultant contracted to the Royal Commission on Electric Power Planning, in Ontario, as its Research Director. During this time, he directed and participated in various studies of different aspects of electricity supply. He was also a member of the panel of expert examiners in a number of the Royal Commission's public hearings.

1976-83 As President of Slater Energy Consultants, Inc., in Toronto, Mr. Slater performed or made major contributions to a number of important assignments at the forefront of the electrical energy industry. These included:

- The Export of Electrical Power
....a study for the Ontario Ministry of Industry and Tourism.
- Load Management Studies
....for the Detroit Edison Company.
- California Utilities Increased Integration Study
....for San Diego Gas & Electric Company, Southern California Edison Company, Los Angeles Department of Water and Power, and Pacific Gas and Electric Company.
- Bradley-Milton 500kV Transmission Lines
....a study for the Ontario Ministry of Energy and the Interested Citizens Group (Halton Hills).
- Solar Energy and the Conventional Energy Industries
....a study for the Canadian Ministry of Energy, Mines and Resources.
- The Expert Examiner for the Ontario Royal Commission on Electric Power Planning during hearings into Priority Projects.

- Various Studies into Unconventional Electrical Resources
....for the P.E.I. Institute of Man and Resources and the P.E.I. Energy Corporation.
- Analysis and Expert Testimony in Support of Lower Demand Rates for Lake Ontario Steel Company, Ivaco Industries Limited and Atlas Steels.
- Claims for Consequential Damages of the Roseton Boiler Implosions
....for Consolidated Edison Company, Central Hudson Power Company and Niagara Mohawk Power Corporation.
- A study of the Potential for Megawatt Scale Wind Power Plants in Electrical Utilities
....for the Canadian Ministry of Energy, Mines and Resources.

These studies have included the need to create special and unique power system models and solution techniques and have addressed significant issues of major importance in the electrical supply industry. Mr. Slater also has carried out assignments for the following clients:

Nova Scotia Power Corporation.
The Government of Prince Edward Island.
The New Brunswick Electric Power Commission.
Ontario Energy Corporation.
Ontario Energy Board.
Go-Home Lake Cottagers Associations.
Saskatchewan Power Corporation.
FMC Corporation.
FMC of Canada Limited.
ERCO Industries Limited.
Canadian Occidental Petroleum Ltd.
State Energy Commission (Western Australia).
Toronto District Heating Corporation.

In connection with his consulting activities, Mr. Slater gave expert testimony in the state of Idaho and in the provinces of Ontario and Prince Edward Island.

Mr. Slater also was a principal developer of PROMOD III[®], a proprietary electric utility production cost and reliability model owned by Energy Management Associates, Inc. This model was used by over seventy utilities in Canada, the United States, Japan and Australia. Its wide acceptance made it the "Industry Standard" in the U.S..

1983-90

As Vice President and Chief Engineer for Energy Management Associates, Inc., Mr. Slater was responsible for giving technical direction for the development and maintenance of Energy Management Associates, Inc.'s state-of-the-art software products. As Senior Vice President and Chief Engineer, Mr. Slater was head of Energy Management Associates, Inc.'s utility consulting practice. He led or made significant contributions to a number of important consulting engagements, including:

- Study and regulatory testimony concerning the value to the Idaho Power Company system of the interruptibility provisions in F.M.C.'s supply contract.
- Generation planning studies for Cincinnati Gas and Electric Company, San Diego Gas & Electric Company and the City of Austin Electric Utility Department.
- Assistance to legal counsel during regulatory litigation regarding the hostile takeover of a major Canadian gas utility holding company (union Enterprises), including definition and examination of issues, selection of witnesses, and analysis of the opposing case.
- Development and demonstration of a method for the allocation of Inland Power Pool's operating reserve requirement among its members.
- Analysis of replacement power costs during the outage of Niagara Mohawk Power Corporation's Nine Mile Point #1 nuclear unit.
- Reserve margin assessments for Public Service Company of Indiana, Alleghany Power System Inc., Iowa Electric Light & Power Company, San Diego Gas & Electric Company, and El Paso Electric Company.
- Examination of the gas supply situation in Southern California and regulatory testimony regarding "unbundling" of storage service.

- Evaluation of the operational, planning and financial impacts of merging two large Eastern U.S. electric utilities.
- Study and regulatory testimony regarding the value and appropriate level of interruptible demand for the Union Gas system.
- Evaluation of the benefits of increased operational integration of a group of electric utilities.
- Assistance for Tucson Electric Power Co. and its legal counsel during arbitration of its dispute with San Diego Gas and Electric Company regarding the operation of a large power sale agreement.
- Analysis of the economics of a third A/C transmission line linking California and Oregon.
- A seminar on "Power Pooling and Inter-Utility Interconnections" for the management of the Central Electricity Generating Board and other parties involved in U.K. privatisation.
- Determination of the benefits of pool membership for two electric utilities in the Northeast U.S..
- Assistance for Riley Stoker Corporation and its legal counsel with the arbitration of direct and consequential damages arising out of the late completion and early poor performance of two major coal-fired generating units. The work included case examination and development, detailed reconstruction of events, analysis of all financial and economic consequences of project delay and performance with separation of fault, analysis of opponent's case and assistance with cross-examination, direct and rebuttal testimony, and assistance with oral and written argument.

Mr. Slater's consulting assignments included the areas of power system planning, operations, reliability, economics, ratemaking and assessment of the worth of unconventional resources. He appeared as an expert witness in regulatory hearings in Idaho, Iowa, Indiana, Florida, California, Texas, Ontario and Nova Scotia and in civil arbitration proceedings in Louisiana and Pennsylvania.

Mr. Slater continued to contribute to the development of E.M.A.'s utility software products. His contributions included being a principal developer of SENDOUT[®], E.M.A.'s proprietary supply model for gas utilities.

1990- In August 1990, Mr. Slater returned to working in his own practice, in Atlanta, where he heads a small corporation, Slater Consulting, which provides consulting services and expert testimony for various different participants in the utility industry.

Slater Consulting assignments, led by Mr. Slater, have included:

- Assistance to legal counsel for creditors of a bankrupt utility.
- Analysis and testimony for Texas – New Mexico Power Company regarding prudent alternatives to their decision to build TNP ONE Unit 2.
- Assistance and analysis for a utility and its legal counsel during litigation regarding damages sustained because of interference in a proposed merger of that utility with another utility.
- Analyses and testimony before the New York PSC for Sithe Energies, Inc., in certification proceedings and in numerous avoided cost and buy-back rate proceedings.
- Analyses and testimony for the Independent Power Producers of New York in QF curtailment, buy-back rate and back-up rate proceedings before the New York PSC.
- Analysis and testimony for Southwestern Public Service Co. at FERC and before the New Mexico Public Service Commission regarding the lack of production cost savings from the proposed merger of Central & South West Utilities with El Paso Electric Company.
- Analyses and testimony before the Public Service Commission for Independent Power Producers in Florida regarding QF curtailment.
- Analyses and testimony in Civil Court cases for Independent Power Producers in Florida regarding the correct implementation of contractual dispatchability provisions.

- Testimony before regulatory commissions in New York, Pennsylvania, Texas, Florida and Louisiana regarding various aspects of emerging competition.
- Analyses and testimony before the Georgia Public Service Commission on behalf of Mid-Georgia Co-gen and others regarding avoided costs on the Georgia Power / Southern Company system.
- Analysis and testimony before the Georgia Public Service Commission on behalf of Georgia Power Company regarding the Prudence of Georgia Power's 1978-1980 investment in the Rocky Mountain pumped storage plant.
- Testimony before the regulatory commissions of Texas, Virginia and Wisconsin regarding the fair allocation of utility revenue requirements to individual customer classes.
- Testimony before the United States Bankruptcy Court regarding the value of the non-nuclear assets of Cajun Electric Power Co-operative, Inc.
- Analyses for Sithe Energies, Inc. of the future dispatch and associated energy revenues for numerous generating resources in the Northeast United States.
- Operational planning analyses for Sithe Energies, Inc. regarding numerous existing and new generating resources in the Northeast United States.
- Analyses and testimony in Courts and before arbitrators for the non-operating owners of the South Texas Nuclear Project, the Cooper nuclear unit in Nebraska, and the Millstone 3 nuclear unit in Connecticut concerning the replacement power costs during extended outages.

In connection with these and other assignments, Mr. Slater has appeared as an expert in regulatory proceedings in Florida, Georgia, Louisiana, New Mexico, New York, Pennsylvania, South Carolina, Virginia, Wisconsin and Texas, and at the Federal Energy Regulatory Commission. He has also appeared in Federal Bankruptcy Court, state courts in Virginia, Nebraska, Texas and Florida, and civil arbitration proceedings in Nevada and Pennsylvania.

PUBLICATIONS & PRESENTATIONS

"Meeting System Demand"

Canada-USSR Electric Power Working Group Electrical Seminar,
Montreal, March, 1973.

"Stochastic Model for Use in Determining Optimal Power System Operating Strategies."

Power Devices and Systems Group, Electrical Engineering Department,
University of Toronto – 1973.

"Economy-Security Functions in Power System Operations"

IEEE Power System Economic Subcommittee Work Group Paper
IEEE T.P.A.S. Sept/Oct 1975 p. 1618.

"A Large Hydro-Thermal Scheduling Model"

TIMS/ORSA
Miami, November 1976.

"Generation System Modeling for Planning and Operations"

Atlantic Regional Thermal Conference
Charlottetown, June 1978.

"The Feasibility of Electricity Export from CANDU Nuclear Generation"

Canadian Nuclear Association
Ottawa, June 1978.

"Evaluation of the Worth of System Scale Wind Generation to the Prince Edward Island Electrical Grid."

IEEE Canadian Conference
Toronto, Ontario 1979.

"The Results of a Study Examining the Possible Impact of Solar Space Heating on the Electrical Utility in New Brunswick."

The Potential Impacts of the Deployment of Solar Heating on Electrical Utilities – A workshop sponsored by the Canadian Department of Energy, Mines and Resources
Ottawa, May 1980.

"Reliability Indices: Their Meaning and Differences"

Planmetrics/Energy Management Associates, Inc. 8th Annual National Utilities Conference
Chicago, May 1980.

"Description and Bibliography of Major Economy-Security Functions

Part I - Description

Part II - Bibliography (1959-1972)

Part III - Bibliography (1973-1979)"

IEEE Power System Economics Subcommittee Working Group
Papers (3).

IEEE TPAS January 1981, p.211, p.214, p. 224.

"PROMOD III® Evaluation of the Worth of Grid Connected WECS."

Fifth Annual Wind Energy Symposium, Ryerson Polytechnical Institute
Toronto, December 1982.

"Probabilistic Simulation in Power System Production Models"

China-U.S.A. Power System Meeting, Electrical Power Research Institute
of China

Tianjin, China, June 1985.

"Computer Modeling of Wheeling Arrangements"

Electricity Consumers Resource Council Seminar
Washington, D.C., September 1985.

"Power Systems Reliability Improvement Benefits – A Framework for Analysis"

ASME Energy-Sources Technology Conference
Dallas, February 1987.

Kenneth J. Slater

List of Expert Testimony (1983-2003)

1. Idaho Public Utilities Commission Case No. U-10006-185
Re: Value of Interruptibility Provisions in FMC Power Supply Contract
For: FMC Corporation
2. Idaho Public Utilities Commission Case No. U-10006-197
Re: Idaho Power Company Generation Planning
For: FMC Corporation
3. Iowa State Commerce Commission Docket No. RPU-83-23
Re: Appropriate Generation Reserve Margin for Iowa Electric Light and Power Company
For: Iowa Electric Light and Power Company
4. Idaho Public Utilities Commission Case No. U-10006-265
Re: Usefulness of Power Supply Models
For: FMC Corporation
5. Idaho Public Utilities Commission Case No. U-10006-265A
Re: Value of Interruptibility of FMC Load
For: FMC Corporation
6. Florida Public Service Commission Case No. 830470-EI
Re: Ratemaking Treatment for New Generation Asset (Crystal River 5) and Reasonableness of Certain FPC PROMOD III® Analyses
For: Florida Power Corporation

7. Indiana Public Service Commission Cause No. 37414
Re: Appropriate Reserve Margin
For: Public Service Company of Indiana
8. American Arbitration Association Case 71 199 0072 84
Cajun Electric Power Cooperative, Inc., and Riley Stoker Corporation
Re: Project delay, Operational Problems and Replacement Power Costs
For: Riley Stoker Corporation
9. Ontario Energy Board
Takeover of Union Gas Corporation by Unicorp Canada Corporation
Re: Utility Management
For: Unicorp Canada Corporation
10. Florida Public Service Commission Case No. 870220-EI
Re: Ratemaking Treatment for Nuclear Generation Asset,
(Crystal River 3)
For: Florida Power Corporation
11. California Public Utilities Commission Docket No. I 87-03-036
Re: Unbundling of Gas Storage Service
For: San Diego Gas & Electric Company
12. Texas Public Utility Commission Docket No. 8363
Re: Generation Reliability
For: El Paso Electric Company
13. Nova Scotia Board of Commissioners of Public Utilities
- Application of Nova Scotia Power Corporation for Approval to Change Rates.
{Approximately 1989}
Re: Rate Design Issues
For: Nova Scotia Power Corporation
14. Texas Public Utility Commission Docket No. 8702 et al
Re: "Used and Useful" & Generation Planning
For: Gulf States Utilities Company

15. Ontario Energy Board
Re: Value of Interruptible Customers
For: Union Gas Corporation
16. Texas Public Utility Commission No. 9945
Re: Generation Reliability
For: El Paso Electric Company
17. Texas Public Utility Commission Docket No. 10200
Re: Generation Alternatives to TNP One Unit 2
For: Texas - New Mexico Power Company
18. American Arbitration Association Case 55 110 0044 91
P. J. Dick Contracting Company v's D/R Hydro Company and Voith Hydro, Inc.
Re: Performance of Hydro-Electric Turbines
For: P. J. Dick Contracting Company
19. New York Public Service Commission Case No. 92-E-0814 et al
Re: Need to Curtail Qualifying Facilities
For: Independent Power Producers of New York
20. New York Public Service Commission Case No. 92-T-0114
Re: Avoided Production Costs
For: Sithe Energies, Inc.
21. New York Public Service Commission Cases 93-E-0376 and 93-E-0378.
Re: Calculation of Avoided Energy Costs
For: Sithe Energies, Inc.
22. New York Public Service Commission Case No. 94-E-0098 et al
Re: Setting of Buyback Rate
For: Independent Power Producers of New York
23. New York Public Service Commission Case No. 94-E-0334
Re: Calculation of Avoided Energy Costs
For: Sithe Energies, Inc.

24. Texas Public Utility Commission Docket No. 11735
Re: Revenue Requirement Allocation
For: Association for Equitable Rates
25. Florida Public Service Commission Case No. 930548-EG et al
Re: Integrated Resource Planning
For: Competitive Energy Producers Association
26. Georgia Public Service Commission Docket No. 4900-U
Re: Avoided Costs
For: Mid-Georgia Cogen L.P.
27. Georgia Public Service Commission Docket No. 4822-U
Re: Avoided Costs
For: North Canadian Power Corporation and International Power Systems Incorporated
28. FERC Docket No. EC94-7-000
Re: CSW/El Paso Electric merger related system production savings
For: Southwestern Public Service Company
29. Texas Public Utility Commission Docket No. 12065
Re: Backup power rates
For: Texas - New Mexico Power Company
30. New Mexico Public Service Commission Case No. 2575
Re: CSW/El Paso Electric merger related system production savings
For: Southwestern Public Service Company
31. New York Public Service Commission Cases 93-E-0912 and 93-E-1075
Re: Calculation of Fuel Targets and Avoided Energy Costs
For: Sithe Energies, Inc.
32. New York Public Service Commission Cases 94-E-0614 & 95-E-0172
Re: Backup power rates
For: Independent Power Producers of New York

33. Florida Public Service Commission Docket No. 941101-EQ
Re: Need to Curtail Qualifying Facilities
For: Orlando CoGen Limited, L. P.
34. District Court of Harris County, Texas, 11th. Judicial District, Case No. 94-007946
City of Austin and City of San Antonio v's Houston Lighting & Power Company
Re: Replacement Power Cost Damages
For: The City of Austin
35. South Carolina Public Service Commission Docket No. 95-1192-E
Re: Avoided Costs
For: Consolidated Hydro Southeast, Inc.
36. Circuit Court of the City of Richmond, Virginia Case No. LA 2266-4
Gordonsville Energy, L.P. v's Virginia Electric and Power Company
Re: Virginia Power Damages due to NUG outage.
For: Gordonsville Energy, L.P.
37. United States Bankruptcy Court, District of New Jersey, Case No. 95-28703
Kamine/Besicorp Allegany, L.P. v's Rochester Gas & Electric Corporation
Re: Value of Plant Output
For: Kamine/Besicorp Allegany, L.P.
38. Texas Public Utility Commission Docket No. 15638
Re: Texas Utilities' Transmission and Ancillary Service Rates
For: Texas-New Mexico Power Company
39. Texas Public Utility Commission Docket No. 15639
Re: H L & P's Transmission and Ancillary Service Rates
For: Texas-New Mexico Power Company
40. New York Public Service Commission Case 96-E-0891
Re: Retail Service Competition
For: Independent Power Producers of New York

41. United States District Court, Western District of Pennsylvania,
Civil Action No. 95-0658
Washington Power Company, L.P. v's Allegheny Power System, Inc. et al.
Champion Processing, Inc., et al v's Allegheny Power System, Inc. et al.
Re: Non-performance of contract terms and associated damages
For: Washington Power Company, LP- Champion Processing, Inc., et al
42. American Arbitration Association, Case 79 Y 199 00070 95
Las Vegas Cogeneration L.P. v's Nevada Power Co.
Re: Curtailment of contract deliveries and associated damages
For: Las Vegas Cogeneration L.P.
43. United States Bankruptcy Court, Middle District of Louisiana, Case No. 94-11474
United States District Court, Middle District of Louisiana, Case No. 94-2763
Cajun Electric Power Co-operative, Inc. Debtor
Re: Value of non-nuclear assets of Cajun Electric Power Co-operative
For: Enron Capital & Trade Resources
44. Louisiana Public Service Commission Docket U-21453
Re: Retail Service Competition
For: Alliance for Lower Electric Rates Today
45. Georgia Public Service Commission Docket No. 6739-U
Re: Prudence of investment in Rocky Mountain pumped storage
plant
For: Georgia Power Company
46. Pennsylvania Public Utility Commission Docket No. P-00971265
Re: Market prices for retail generation services
For: Enron Energy Services Power Inc.
47. State Corporation Commission of Virginia Case No. PUE960296
Re: Revenue Requirement Allocation
For: Coalition for Equitable Rates
48. Public Service Commission of Wisconsin Docket 6630-UR-110
Re: Revenue Requirement Allocation
For: Coalition for Equitable Rates

49. District Court of Lancaster County, Nebraska, Docket 528, Page 69
City of Lincoln d/b/a Lincoln Electric System v's Nebraska Public Power District
Re: Replacement Power Cost Damages
For: Lincoln Electric System
50. District Court of Lake County, Florida, (1999)
NCP Lake Power/Lake Cogen, Ltd. v's Florida Power Corporation
Re: Breach of Contract and associated damages
For: NCP Lake Power/Lake Cogen, Ltd.
51. Fourth Judicial Circuit Court, in and for Duval County, Florida, Case 97-07037-CA
Cedar Bay Generating Company, L.P. v's Florida Power & Light Company
Re: Breach of Contract and associated damages
For: Cedar Bay Generating Company, L.P.
52. Arbitration
Massachusetts Municipal Wholesale Electric Company, et al
v's The Connecticut Light and Power Company
and Western Massachusetts Electric Company
New England Power Company v's The Connecticut Light and Power Company
and Western Massachusetts Electric Company
Re: Replacement power costs for the outage of Millstone 3 nuclear unit
For: The Non-operating Co-owners of Millstone 3
53. Florida Public Service Commission Docket No. 981890-EU
Re: Peninsula Florida Generation Reserve Margins
For: Duke Energy
54. United States District Court For The District Of Nebraska, Case 9:98CV345
Entergy Services, Inc. and Entergy Arkansas, Inc.
vs Union Pacific Railroad Company
Re: Replacement Power Costs
For: Union Pacific Railroad
55. Florida Public Service Commission Docket No. 001748-EC
Re: Petition for Determination of Need for the Osprey Energy Center
For: Calpine Construction Finance Company, L.P.

56. New Orleans City Council No. UD99-2
Re: Customer Complaints of Overcharging by Entergy New Orleans
For: Reverend C. S. Gordon, Jr. et al
57. United States District Court for The Northern District of California, San Jose Division
Case Number C 99-21242 SW PVT ENE
ABB Power T&D Company v. Alstom Esca Corporation
Re: Intellectual Property Dispute
For: Alstom Esca Corp.
58. United States District Court For The District Of Kansas, Civil Action 00-2043CM
Western Resources, Inc. v. Union Pacific Railroad Company and The Burlington Northern And Santa FE Railway Company
Re: Replacement Power Costs and other damages
For: Union Pacific Railroad
59. United States District Court For The Southern District of New York, Case No 01 Civ. 1893 (JGK) (HP)
Consolidated Edison, Inc. v. Northeast Utilities
Re: Failed Merger
For: Northeast Utilities.
60. New York Public Service Commission Case 01-E-1847
Re: NMPC Standby Service Rates
For: Independent Power Producers of New York
61. Wisconsin Public Service Commission Docket Nos. 05-AE-109, 05-CE-117, 05-CE-130, 6650-CG-211, 137-CE-104
Re: CPCN for Port Washington CC's
For: PGE National Energy Group
62. Florida Public Service Commission Docket Nos. 020262-EI and 020262-EI
Re: Petitions to determine the need for additional power plant by Florida Power & Light Company
For: Florida Partnership for Affordable Competitive Energy

63. Arbitration
Morgan Stanley Capital Group v's Cobb Electric Membership Corporation, and
Snapping Shoals Electric Membership Corporation
Re: Disputed electricity trades.
For: Cobb & Snapping Shoals EMCs.
64. FERC Docket No. EL01-88-000
Re: Entergy System Agreement
For: Arkansas Electric Energy Consumers, Inc.
65. North Carolina Utilities Commission Docket No. E-100, Sub 96
Re: Carolina Power & Light Avoided Costs
For: Cogentrix

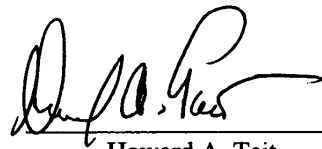
6. Howard A. Tait

Howard A. Tait is the BNSF Trainmaster at Forsyth, Montana, a position he has held since 1998. His business address is 800 Main Street P.O. Box 209, Forsyth, Montana 59327. Mr. Tait has worked for BNSF or one of its predecessors since 1975. Prior to becoming a Trainmaster, Mr. Tait worked as a Brakeman, a Conductor and as an Engineer. In his current position, Mr. Tait is responsible for, among other things, all of the trainmen and enginemen and safety in the territory from Forsyth to Jones Junction, Montana.

Mr. Tait is sponsoring evidence relating to BNSF operations at Forsyth. His evidence is contained in section II.A.1.a of the Narrative. Mr. Tait has signed a verification of the truth of the statements contained therein. A copy of that verification is attached hereto.

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

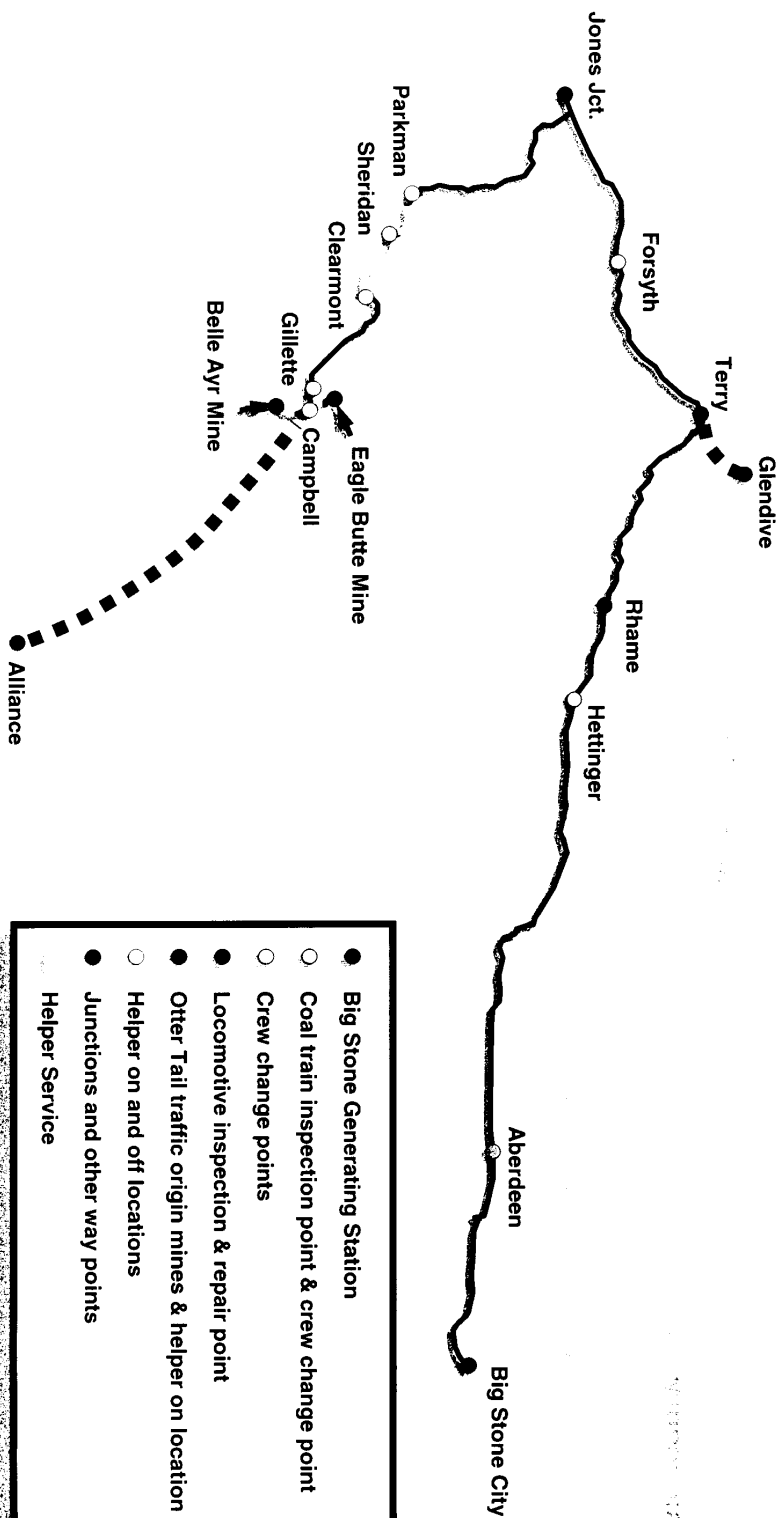
Executed on June 9, 2003


Howard A. Tait

BNSF Exh. II.A-1

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Exhibit II. A-2 Otter Tail Train Route



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BNSF Exh. II.A-3

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RETURN ON INVESTMENT - GENERAL OVERHEAD RATIO

Special Studies Establish That BNSF's Construction Projects Contained in Account 90 Are of Relatively Short Duration

BNSF's property accounting personnel and Mr. Fisher conducted two special studies to demonstrate that the projects for which funds are recorded in Account 90 are of relatively short duration. The first study examined the average length of time between the start date for work under an Authority for Expenditure ("AFE")¹ and the AFE completion date. The study included AFEs approved in 1998, 1999, and 2000. This study showed that the work authorized by AFEs is generally completed in less than eight months. The second study examined the monies in Account 90 as of October 31, 2002, to determine the average length of time those monies had resided in that account. This study shows that funds placed in Account 90 have been in Account 90 on average for less than seven months. That is, the time between the date that expenses are first incurred on a project (and reported to Account 90) and the date that the project is placed in service (and reported out of Account 90) averages considerably less than one year. Both studies confirm that the construction projects in Account 90 are of relatively short duration, and, therefore, Account 90 is properly included in the development of BNSF's general overhead for return on investment. Each of these studies is discussed below.

The first study examined BNSF's AFEs for capital spending greater than one million dollars that were approved between January 1, 1998, and December 31,

¹ Before work can begin on a construction project the estimated expenditures necessary to perform the construction must be authorized by senior management. The authorizing document is the AFE.

2000.² BNSF provided a report that identified each of these AFEs by the year it was approved, the budget class (*e.g.*, whether the AFE is for new rails, bridges and tunnels, or roadway shop and facilities), the amount of total expenditures, the project start date, the percent of the project that had been completed as of March 2, 2001, the date the project was completed, and a brief description of the project.³

Mr. Fisher identified all AFEs that had been completed (all work authorized under the AFE has been performed and all charges closed out of Account 90) as of March 2001, the date the report was generated. He found that 93 percent (252 of 271) of AFEs opened in 1998, 88 percent (144 of 164) of AFEs opened in 1999, and 77 percent (250 of 325) of AFEs opened in 2000, were identified as completed.⁴ Mr. Fisher then determined the average number of days that these completed AFEs were open (*i.e.*, the length of time between AFE start date and completion date). The study shows that AFEs were generally completed in less than eight months. The results are shown in Table II.A. Ex. 4-1 below:

² Electronic workpapers "AFE List.pdf" and "BNSF AFE 1998-2000.xls". It safely can be assumed that AFEs with charges under one million dollars are likely of shorter duration than those over one million dollars.

³ BNSF produced in discovery a more current version of this report at BNSF/OTP 03864-03877.

⁴ Of the 75 incomplete AFEs for the year 2000, 80 percent had been open less than a year as of March 2001. Mr. Fisher determined that all 75 of these AFEs had been open on average less than ten months as of March 2001.

Table II.A. Ex. 4-1
Average Length of Time Between AFE Start Date
And Completion Date

Year Approved	Number of AFEs	Average Months Open
1998	252	8.8
1999	144	10.3
2000	250	4.7
1998-2000	646	7.5

Source: Electronic workpaper "BNSF AFE 1998-2000.xls"

To confirm the conclusion reached above – that BNSF's construction projects are of a short duration – BNSF also conducted a special study of the monies in Account 90 as of October 31, 2002. Because expenses are reported to Account 90 as they are incurred and reported out when the project, or part thereof, is placed into service, the average age of monies in Account 90 reflects the average duration of BNSF's construction projects.

BNSF property accounting personnel identified that, as of October 31, 2002, Account 90 was comprised of \$337 million in charges associated with 1,088 different AFEs.⁵ BNSF then identified each of these AFEs and the date on which charges for each AFE were first incurred. Based on the AFE identification number, Mr. Fisher also determined the year in which each AFE was approved.⁶ The data showed that (1) 978 of the 1,088 projects (90 percent) commenced within the previous twelve months, and (2) \$309 million of the \$337 million (92 percent) in Account 90 as of October 31,

⁵ Electronic workpaper "BNSF Account 90 as of 10-31-02.xls".

⁶ BNSF uses one of two conventions to number AFEs, either of which indicates the year in which the AFE was approved. One convention uses an "A" prefix, which contains the year in the following two characters. For example, A014187 is a year-2001 AFE associated with tie work on the Powder River Subdivision. AFEs with a "5" prefix identify the year in the last two characters, such as 5950001, also a year-2001 AFE.

2002, were expenses incurred on projects that commenced during the prior 12-month period.

Mr. Fisher refined the analysis further to determine the average age of the monies in Account 90 on October 31, 2002. To do this, he assigned all expenses incurred under an AFE to the month in which the first expenditure under that AFE was reported to Account 90. Thus, if for a particular AFE, BNSF first charged \$1 million in July 2002, charged \$2 million in August, 2002, and then charged \$1 million to Account 90 in September 2002, Mr. Fisher treated the entire \$4 million in expenses as having been reported to Account 90 in July. It is obvious that this approach overstates the duration of funds in Account 90 and therefore is highly conservative. Nevertheless, as shown in Table II.A. Ex. 4-2, this approach shows the average age of the charges in Account 90 is less than nine months.

Table II.A. Ex. 4-2
AFE Charges Reported to Account 90
By Date of First Charge to AFE

Date of First Charge to AFE	Number of AFEs by Month of 1st Charge	Percent of All AFEs	Total Charges to AFE by Month of 1st Charge (\$M)	Percent of All Charges
Nov-01	28	3	10	3
Dec-01	62	6	85 ⁷	25
Jan-02	43	4	55	16
Feb-02	78	7	44	13
Mar-02	64	6	15	5
Apr-02	86	8	21	6
May-02	109	10	34	10

⁷ \$73 million of this \$85 million was charged on a single AFE. Although charges on that AFE were first reported to Account 90 on December 31, 2001, they did not all occur on that date. In fact, expenditures have continued throughout 2002 and, as of the October 31, 2002 report, are on average six months old.

Date of First Charge to AFE	Number of AFEs by Month of 1st Charge	Percent of All AFEs	Total Charges to AFE by Month of 1st Charge (\$M)	Percent of All Charges
Jun-02	68	6	12	4
Jul-02	69	6	9	3
Aug-02	69	6	4	1
Sep-02	92	8	11	3
Oct-02	210	19	10	3
Prior 12 Months	978	90	309	92
All Account 90	1,088		\$337 ⁸	

Source: Electronic workpaper "BNSF Account 90 as of 10-31-02.xls."

Moreover, if one were to assume that expenditures for particular projects were made evenly over the life of the projects instead of being made entirely in the first month, the average life would be only *five* months. Even this approach likely overstates the duration since the majority of expenses on a project tend to be incurred towards the end of the AFE's life.

Both studies clearly demonstrate that the projects in BNSF's Account 90 are of short duration and should be included in BNSF's net investment base.

⁸ \$28 million was incurred prior to November 2001 (*i.e.*, the difference between the \$337 million all account 90 total and the \$309 million incurred in prior 12 months). Of this \$28 million, \$5 million was associated with year-2000 AFEs (*i.e.*, was incurred in or after January 2000), and *none* was incurred prior to January 2000.

Comparison of Fueling Costs

Plant	Capacity Owned	Fueling Cost (\$/MWh)				
	(Summer MW)	1998	1999	2000	2001	2002
MDU						
Big Stone	103	9.6	9.6	10.7	11.2	14.0
Coyote	107	10.4	8.9	7.5	8.6	8.3
Heskett	104	15.9	14.3	12.6	13.5	13.3
Lewis and Clark	52	11.7	12.1	12.1	12.6	12.6
NWPS						
Big Stone	107	10.1	9.7	10.7	11.3	13.3
Coyote	42	10.5	9.5	9.7	9.3	9.3
Neal #4	54	7.8	7.9	8.1	7.9	8.3
OTP						
Big Stone	246	9.8	10.0	10.6	11.2	14.5
Coyote	150	9.9	9.1	9.1	8.8	8.6
Hoot Lake	156	14.6	14.7	14.2	14.6	15.4
Representative Nuclear Unit		6.0	6.0	6.0	6.0	6.0
Representative New CC Unit						
Gas @ 360 c/MBTU		26.1	26.1	26.1	26.1	26.1
Gas @ 480 c/MBTU		34.8	34.8	34.8	34.8	34.8
Gas @ 600 c/MBTU		43.5	43.5	43.5	43.5	43.5
Representative Gas-Fired Steam Unit						
Gas @ 360 c/MBTU		41.4	41.4	41.4	41.4	41.4
Gas @ 480 c/MBTU		55.2	55.2	55.2	55.2	55.2
Gas @ 600 c/MBTU		69.0	69.0	69.0	69.0	69.0
Representative Oil-Fired Steam Unit						
No.6 oil @ 450 c/MBTU		51.8	51.8	51.8	51.8	51.8
Representative New Gas-Fired CT						
Gas @ 360 c/MBTU		39.6	39.6	39.6	39.6	39.6
Gas @ 480 c/MBTU		52.8	52.8	52.8	52.8	52.8
Gas @ 600 c/MBTU		66.0	66.0	66.0	66.0	66.0
Representative Oil-Fired CT						
No.2 oil @ 640 c/MBTU		96.0	96.0	96.0	96.0	96.0

Sources: FERC Form 1 filings
General industry knowledge

Comparison of Monthly Capacity Factors

Big Stone

Month	Monthly Capacity Factor (%)				
	1998	1999	2000	2001	2002
January	90.81	95.76	92.77	92.32	94.70
February	82.56	96.96	90.93	97.26	88.40
March	77.12	96.44	87.10	93.43	95.58
April	90.05	88.41	92.70	94.92	86.97
May	83.22	90.87	63.61	71.67	71.49
June	80.89	90.12	94.41	89.77	87.35
July	81.21	88.10	89.19	85.13	88.36
August	84.55	82.48	90.64	85.40	82.18
September	29.89	60.29	85.74	90.54	44.37
October	0.11	88.23	92.12	64.44	14.90
November	89.76	92.70	75.96	81.08	91.10
December	92.10	94.37	96.60	97.19	93.24
Summer Capacity (MW)	452.27	455.70	455.61	455.20	455.70

Sources: MAPP EIA-411 filings
MAPP Load and Capacity reports
EIA-906 filings