

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

Western Fuels Association, Inc. and Basin Electric Power Cooperative)	
)	
v.)	STB Docket No. 42088
)	
BNSF Railway Company)	
)	

Verified Statement

Of
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On Behalf Of

Western Fuels Association, Inc. And
Basin Electric Power Cooperative

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1	Statement of Qualifications of Thomas D. Crowley
2	Impact of Modified ATC on Allocation of Contribution for LRR Traffic Group
3	LRR and Residual BNSF Revenues Under Modified and Original ATC Division Methods
4	Change In Revenue Per Ton Rankings From Switching From Modified ATC To Original ATC

I. INTRODUCTION

I am Thomas D. Crowley, an economist and the President of L. E. Peabody & Associates, Inc., an economic consulting firm that specializes in solving economic, transportation, marketing, financial, accounting and fuel supply problems. I have spent most of my consulting career of over forty (40) years evaluating fuel supply issues and railroad operations, including railroad costs, prices, financing, capacity and equipment planning issues. My assignments in these matters were commissioned by railroads, producers, shippers of different commodities, and government departments and agencies. I have previously presented evidence in this proceeding, including evidence on the calculation of stand-alone railroad revenues and revenue allocation methods. A copy of my credentials is included as Exhibit No. 1 to this verified statement (“VS”).

I have been requested by Counsel for Western Fuels Association, Inc. and Basin Electric Power Cooperative (“WFA/Basin”) to address the Comments of BNSF Railway Company on Remand (“BNSF Comments”) in STB Docket No. 42088, *Western Fuels Association, Inc. and Basin Electric Power Cooperative vs. BNSF Railway Company*. I have also been asked by Counsel to address the Joint VS of Mr. Michael R. Baranowski and Mr. Benton V. Fisher (“Baranowski/Fisher VS”), regarding certain aspects of the Surface Transportation Board’s (“STB”) Average Total Cost (“ATC”) revenue division methodology for cross-over stand-alone railroad (“SARR”) traffic.

Specifically, I will address why the STB’s modified ATC division approach adopted by the STB in this proceeding (“Modified ATC”) is consistent with basic economic principles. I will also address why there is no “double-count” of variable cost in the Modified ATC division approach as alleged by BNSF and Baranowski/Fisher, and why the so-called Original ATC division methodology produces economically illogical, biased results. Finally, I will discuss why

it would be procedurally unfair to WFA/Basin to retroactively change SARR division methodologies after all evidence has been developed and reviewed by the STB.

My testimony is discussed further below under the following topical headings:

- II. SARR Revenue Divisions
- III. Modified ATC Is Correct
- IV. Fairness Requires The Use Of Modified ATC

II. SARR REVENUE DIVISIONS

The stand-alone cost (“SAC”) constraint of Constrained Market Pricing (“CMP”) is based on the premise that a captive shipper may have its rates established based on the lower costs of an alternate, stand-alone system in which the plant size and traffic base are designed to maximize efficiencies and production economies.¹ The STB’s predecessor agency, the Interstate Commerce Commission (“ICC”), recognized that the ability to group traffic of different shippers is essential to the workings of SAC as it allows a captive shipper to identify areas where production economies yield an efficient alternative system whose traffic is divertible to a hypothetical replacement carrier.²

What the ICC did not fully address when it first implemented the SAC constraint was how SARR traffic would be grouped in a SAC analysis and how revenues would be calculated for the SARR. Rather, the “how” and “why” of traffic selection and revenue calculation were addressed in a series of subsequent ICC and STB rulings in maximum reasonable rate case decisions and one STB rulemaking proceeding. These subsequent rulings and decisions ultimately led to the adoption of the Modified ATC approach to calculate revenues in SAC cases. While just as any economic model cannot always replicate all the complexities of real world processes, the Modified ATC approach is, at the end of the day, economically justifiable and fundamentally more sound than other revenue allocation approaches developed or advocated by the railroads.

¹ See *Coal Rate Guidelines, Nationwide*, 1 I.C.C.2d 520, 542 (1985) (“*Coal Rate Guidelines*”).

² *Coal Rate Guidelines* at 544.

**A. THE NEED FOR
CROSS-OVER TRAFFIC
AND REVENUE DIVISIONS**

As indicated above, the STB, and its predecessor agency the ICC, have long acknowledged that shippers have the right to select the most advantageous traffic group for their SARR systems. This includes not only traffic that would be originated and terminated by the SARR (so-called local traffic), but also traffic that the SARR would interchange with other railroads, including the residual incumbent carrier. This latter group of traffic is known as cross-over traffic, and, as indicated by the ICC in *Nevada Power*,³ it is a critical component of SAC presentations as excluding cross-over traffic would “weaken the SAC test because it would deprive the SARR of the ability to take advantage of the same economies of scale, scope and density that the incumbents enjoy over the identical route of movement.”⁴

Just as important, the STB has also deemed cross-over traffic to be a critical simplifying tool for SAC analyses. As explained by the STB in *Xcel*⁵ the use of cross-over traffic provides a reasonable measure of simplification that allows SAC presentations to be more manageable.⁶ Cross-over traffic therefore allows a shipper to enjoy similar economies of scale, scope and density that the incumbent carrier enjoys without requiring the replication of the incumbent’s railroad system. As the STB observed in *Xcel*, without the use of cross-over traffic, the SARR could eventually grow to near the same size as the incumbent carrier’s system, thereby defeating the purpose of the SAC test.⁷

³ *Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C.C.2d 259 (1994) (“*Nevada Power*”)

⁴ See *Nevada Power* at 265, n. 12.

⁵ *Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern and Santa Fe Railway Company*, 7 STB 589 (2004) (“*Xcel*”),

⁶ See *Xcel* at 603.

⁷ See *Xcel* at 602 “The cascading analysis could result eventually in a complainant having to replicate almost all of BNSF’s system.”

**B. MODIFIED ATC MEETS
THE STB'S OBJECTIVES
FOR REVENUE DIVISIONS**

The use of cross-over traffic does create a need to divide the cross-over traffic's real world revenues. Shippers and railroads have provided extensive arguments over the years about the purpose and means of allocating cross-over revenues. The STB ultimately held in *Major Issues*⁸ that the goal in allocating revenue from cross-over traffic should be to ensure that revenue be equitably distributed in relation to the cost incurred to generate those revenues.

Instead of developing a Full SARR analysis, the STB sought a methodology which presented a reasonable surrogate for calculating the total SAC for carrying all of the traffic on the SARR. The STB found that using the incumbent carrier's relative average total costs for the on-SARR and off-SARR segments provided just such a reasonable proxy. Using average total cost in the revenue division calculation is key in the STB's approach, as using anything other than total costs will not capture economies of density inherent in the railroad industry while also reflecting the diminishing economies of density as density increases.

While the STB indicated that a cross-over traffic division methodology should capture economies of density, the chosen revenue division methodology must satisfy other economic axioms, including requiring a movement to recover its variable costs of service before other segments contribute to fixed costs. As discussed below, the Modified ATC methodology meets both of these criteria.

1. Modified ATC Is Logical

The STB originally proposed an ATC approach to cross-over revenue divisions because incorporating average total costs into the function would help capture the economies of density

⁸ Ex Parte 657 (Sub No. 1), *Major Issues in Rail Rate Cases*, Served October 30, 2006 ("*Major Issues*")

that in major part define the railroad industry. The *Major Issues* decision inferred that the ATC divisions could be calculated by applying the ATC division percentage to a movement's total revenue. The STB quickly recognized that this Original ATC approach produced illogical and biased results by allowing one segment's revenue to be below the segment's variable costs of service, while allowing the revenue on another segment to not only cover its variable costs, but also contribute to fixed costs and profits.

To address this erroneous outcome, the STB developed the Modified ATC approach. Modified ATC is a two-step approach that first calculates the variable costs of service for the on-SARR and off-SARR portions of a SARR movement, and then, after assuring each segment recovers its full or pro-rata portion of variable costs, allocates any contribution (recovery in excess of variable costs) based on the average total costs for each portion of the move.⁹ Such an approach is logical because it conforms to basic economic principles, while also capturing the economies in the railroad industry.

It is axiomatic that for a firm to continue to operate in the long-run that its revenues must recover its total cost of operations. It is also axiomatic that in the short-run, a firm's average revenue must cover its average variable cost of operations, or else the firm would be better-off shutting down.¹⁰ This is because average variable costs by definition do not change with changes in production. While a firm's total variable costs will increase with increases in output, average variable costs per unit will remain constant across certain output ranges.¹¹ If a firm is not

⁹ See *WFA/Basin 2007* at 14.

¹⁰ See for example, "Principles of Micro-Economics" Amacher, Ryan, C. or any other introductory economics text.

¹¹ This is particularly the case with ATC since the variable costs used are URCS Phase III costs, which are the same regardless of the line density of the movements being costed. This point is shown by the fact that there are no density related inputs when developing variable costs using the URCS Phase III costing model. Whether a movement occurs in the heart of the Powder River Basin Joint Line or on a lightly traveled branch line, the URCS Phase III model will produce the same variable costs for movements on high-density and low-density segments, holding all other factors constant.

recovering its variable costs from its revenues, it would lose less money by producing no products or services at all and absorbing only the loss from its fixed costs.

From a SARR stand-point, any revenue allocation approach must allow a segment to recover its variable costs of service before allowing another segment to make a contribution to fixed costs, otherwise, basic economics indicates that the under recovered portion of the movement would never move. Modified ATC meets this bedrock economic principle by assuring in Step 1 that a movement's revenue at least covers each segment's variable costs prior to contributing to another segment's fixed costs and profits.

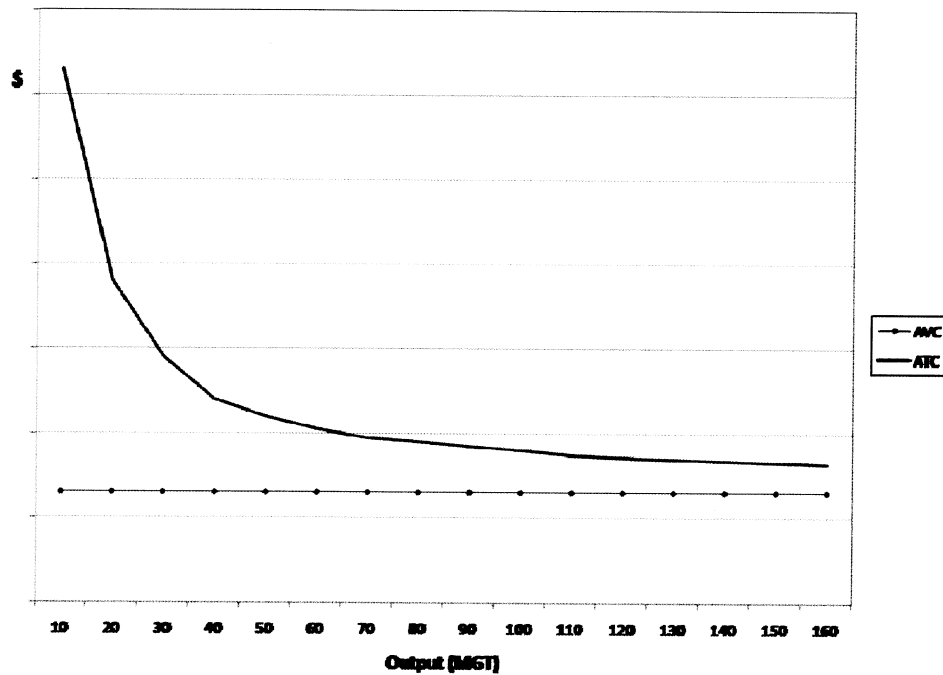
2. Modified ATC Reflects Economies of Density and Diminishing Returns Thereto

The ICC clearly explained in *Coal Rate Guidelines* that the railroad industry exhibits the existence of significant production economies, including economies of scale, scope and density.¹² Economies of density reflect the fact that the greater use of a fixed plant results in declining average total costs as fixed costs are spread over a larger number of traffic units. See *Analysis of Economies of Size and Density For Short Line Railroads*, Mountain Plains Consortium, October 2001 "Economies of density are defined as an increase in output resulting in a less than proportional increase in total costs." Therefore, the only way to incorporate the economies of density is through the use of a total cost function.

The STB illustrated this basic principle in its *Xcel II* decision, where it included a graph (reproduced below) showing the diminishing decline in average total costs as production output measured in million gross tons increases.¹³

¹² See *Coal Rate Guidelines* at 526.

¹³ See *Xcel II* at 9.



As the Board correctly concluded in *Xcel II*, the graph shows that “the economies of density diminish with higher output, as fixed threshold costs are spread over more output.” (at 10)

The second step in ATC properly captures economies of density, as well as diminishing returns because as densities increase, the average fixed cost per ton gets smaller until at very high densities, the fixed cost is so small that the allocation is effectively based on the variable cost component, i.e, the reflection of diminishing returns on density. For example, Table 1 below compares the average variable costs, average fixed costs and average total costs per ton for a hypothetical movement over tracks with different traffic densities.

Traffic Density (tons) (1)	Average Variable Cost Per Ton (2)	Average Fixed Cost Per Ton 1/ (3)	Average Total Cost Per Ton 2/ (4)	Average Variable Costs As A Percentage Of Average Total Costs 3/ (5)
1. 1,000,000	\$5.00	\$10.00	\$15.00	33.3%
2. 25,000,000	\$5.00	\$0.40	\$5.40	92.6%
3. 50,000,000	\$5.00	\$0.20	\$5.20	96.2%
4. 100,000,000	\$5.00	\$0.10	\$5.10	98.2%
5. 150,000,000	\$5.00	\$0.07	\$5.07	98.9%

1/ An assumed fixed cost of \$10,000,000 divided by Column (1).
2/ Column (2) + Column (3).
3/ Column (2) + Column (4).

As Table 1 above demonstrates, as traffic density increases, the impact of the average fixed cost component of ATC declines to the point where the percentage of variable costs to ATC nears 100 percent.

As I discuss in greater detail below, the failure to include properly the impact of density economies led the STB to reject a similar revenue division approach.

C. MODIFIED ATC FIXES
THE PROBLEMS WITH
SIMILAR DIVISION METHODS

The STB previously considered two different revenue division methodologies advocated by the BNSF, the density revenue allocation approach (“DARA”) and the Original ATC method, before adopting the Modified ATC. The STB was correct to reject these two approaches as they both contained flaws that produced illogical and/or biased results as discussed below.

1. Modified ATC Corrects The Flaws In DARA

Railroad companies first began advocating for the use of the DARA approach in the *Duke/NS*, *Duke/CSX* and *CP&L* Cases.¹⁴ BNSF subsequently argued for the use of the DARA approach to allocate cross-over revenues in the *Xcel* case. BNSF's DARA approach first calculated the attributable costs for the on-SARR and off-SARR portions of a movement using the incumbent's URCS variable costs, and then distributed the remaining contribution, e.g., the difference between the revenue and attributable costs, based on the relative densities of each line segment. BNSF boasted that its DARA approach was superior to other revenue division methodologies then used by the STB because it first determined each part of a movement's attributable costs before attempting to allocate the contribution:

BNSF's DARA procedure involves an explicit calculation of attributable costs on both portions of cross-over movements and an allocation of the residual revenue....Thus, in the current case, DARA represents a refinement over MMP because it provides a principled basis for allocating that portion of revenue on cross-over movements that is available to cover unattributable costs.¹⁵

In rejecting the BNSF's use of the DARA methodology in its *Xcel* decision, the STB found no fault with dividing cross-over revenues using a two-step process. Rather, the STB faulted the DARA approach for its failure to reflect the declining returns on density that are critical to railroad costing principles.¹⁶ The STB observed that the dollar amount that DARA would allocate to the light-density and heavy-density lines would not vary as long as the relative

¹⁴ See Docket No. 42070, *Duke Energy Corporation v. CSX Transportation, Inc.* ("Duke/CSX"), Docket No. 42069, *Duke Energy Corporation v. Norfolk Southern Railway Company*, ("Duke/NS") and Docket No. 42072, *Carolina Power & Light Company v. Norfolk Southern Railway Company* ("CP&L").

¹⁵ BNSF *Xcel* Brief at 23.

¹⁶ See Docket No. 42057, *Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern & Santa Fe Railway Company*, served January 19, 2005 ("*Xcel Reconsideration*") at 7 to 11.

densities between the different lines were held constant.¹⁷ For example, the DARA approach would assign the same revenue divisions whether the so-called light-density and heavy-density segments carried 10 and 20 MGT, respectively, or 80 and 160 MGT, respectively. As long as the ratio of tons remained 1 to 2, DARA would produce the same cross-over revenue allocations as demonstrated in the three examples below:

Example 1
Strong Economies of Density

	Residual	SARR
Density	10 MGT	20 MGT
AVC	\$2.50	\$2.50
ATC	\$12.50	\$7.50
DARA	$AVC + (\$5 \times (20 \div 30)) = \5.83	$AVC + (\$5 \times (10 \div 30)) = \4.17

Example 2
Significant Economies of Density

	Residual	SARR
Density	40 MGT	80 MGT
AVC	\$2.50	\$2.50
ATC	\$5.00	\$3.75
DARA	$AVC + (\$5 \times (80 \div 120)) = \5.83	$AVC + (\$5 \times (40 \div 120)) = \4.17

Example 3
Weak Economies of Density

	Residual	SARR
Density	80 MGT	160 MGT
AVC	\$2.50	\$2.50
ATC	\$3.75	\$3.13
DARA	$AVC + (\$5 \times (160 \div 240)) = \5.83	$AVC + (\$5 \times (80 \div 240)) = \4.17

DARA failed because it did not take into consideration the diminishing returns as traffic density increased. The STB's Modified ATC division approach follows the same basic two-step approach advocated by BNSF in *Xcel*, but corrects for the failure to reflect diminishing returns on density economies in Step 2. First, under both DARA and Modified ATC approaches, in Step

¹⁷ See *Xcel Reconsideration* at 10.

1 each segment's attributable costs are first estimated using the incumbent carrier's URCS variable costs. Next, any remaining contribution, which includes unattributable costs and profits, are allocated in Step 2 to the on-SARR and off-SARR segments of each movement. However, the STB's Modified ATC approach corrects the failings of DARA. By allocating the Step 2 contribution using average total costs, which reflects the fact that economies of density become less pronounced at higher density levels.

This point is demonstrated by restating the example used in *Xcel II*, but substituting ATC Step 2 for DARA Step 2.

**Example 1
Strong Economies of Density**

	Residual	SARR
Density	10 MGT	20 MGT
AVC	\$2.50	\$2.50
ATC	\$12.50	\$7.50
Modified ATC	$AVC + (\$5 \times (\$12.50 \div \$20)) = \5.63	$AVC + (\$5 \times (\$7.50 \div \$20)) = \4.37

**Example 2
Significant Economies of Density**

	Residual	SARR
Density	40 MGT	80 MGT
AVC	\$2.50	\$2.50
ATC	\$5.00	\$3.75
Modified ATC	$AVC + (\$5 \times (\$5 \div \$8.75)) = \5.36	$AVC + (\$5 \times (\$3.75 \div \$8.75)) = \4.64

**Example 3
Weak Economies of Density**

	Residual	SARR
Density	80 MGT	160 MGT
AVC	\$2.50	\$2.50
ATC	\$3.75	\$3.13
Modified ATC	$AVC + (\$5 \times (\$3.75 \div \$6.88)) = \5.23	$AVC + (\$5 \times (\$3.13 \div \$6.88)) = \4.77

The restated example from *Xcel II* demonstrates how the Modified ATC approach fixes the primary flaw with DARA. Unlike the DARA approach, which produces the same division

percentages as long as the relationship between traffic densities on the residual and on-SARR segments remains the same, the Modified ATC approach explicitly takes into consideration the diminishing returns on density economies.

As noted by the STB in *Major Issues*, by focusing only on which of the segments has higher traffic densities, the DARA formula ignores the principles of diminishing economies of density.¹⁸ The STB's Modified ATC approach fixes the flaw in the DARA approach by allocating contribution based on average total costs.

This point is confirmed by the Rebuttal VS of Mr. John C. Klick ("Klick"), a colleague of Baranowski/Fisher, in the *Major Issues* proceedings. In his verified statement, Mr. Klick confirms "unlike DARA, the Board's proposed ATC method *does* in fact account for both 'the economies of density and of the diminishing returns thereto'" (at 11) because "as densities increase, the AFC [Average Fixed Cost] per unit of volume component of ATC declines, while the AVC [Average Variable Cost] per unit of volume component remains the same."¹⁹

2. Modified ATC Corrects The Flaws In Original ATC

The STB adopted the ATC approach to cross-over revenue divisions based on the premise that prior mileage based division methodologies reflected only a crude estimate of the relative variable costs of hauling traffic over the relevant segments, and did not take into consideration economies of scale, scope and density, which are the defining characteristics of the railroad industry.²⁰ In describing its new ATC division approach in the *Major Issues* Notice of Proposed Rulemaking ("*Major Issues NPRM*"), the STB indicated that revenues from a cross-over movement would be allocated based on the ratio of the on-SARR segment's ATC to total

¹⁸ See *Major Issues* at 26. The STB noted in its February 2008 *WFA/Basin* decision that ATC fixes the problems inherent with the DARA approach. See *WFA/Basin* February 2008 at 5, n. 9.

¹⁹ See Klick Rebuttal VS .

²⁰ See *Major Issues* at 25.

ATC for the movement, and included an example as to how revenue divisions should be calculated.²¹

Based on the STB's *Major Issues* decision, both WFA/Basin and AEP Texas North Company ("AEP Texas"), the defendant shipper in a concurrent SAC case, developed revenues consistent with the Original ATC division methodology described by the STB. The STB found, however, when reviewing the evidence from both cases that applying ATC division percentages to total revenues produces economically illogical results. As noted by the STB in *WFA/Basin* and *AEP Texas*, because the traffic groups in both cases included traffic with total revenue either below or barely above variable costs, and because the off-SARR segments of the movements have lower densities, the practical effect of applying the ATC percentage to total revenues would be to drive the R/VC percentages of the movements below 100 percent.²²

As discussed above, the STB found such results to be illogical and contrary to basic economic principles. Moreover, the STB determined that such results ran counter to the purpose of SAC, which was to identify and eliminate cross-subsidies. Forcing one segment of a movement to recover less than its variable cost of operations while attributing sufficient revenue to cover another portion's variable costs, plus contribute to fixed costs and profit clearly creates a cross-subsidy.

Finally, it is clearly erroneous to use an ATC metric, which includes a fixed cost component, to allocate variable costs because average variable costs do not vary with volume. This is the same rationale that BNSF and its consultants used in supporting the DARA approach in *Xcel*. In describing DARA in that case, BNSF and its consultants Klick and Fisher stated that it was appropriate to first allocate revenue based on the variable costs of each movement because

²¹ See *Major Issues NPRM* at 20.

²² See *WFA/Basin 2008* at 14 and *AEP Texas 2007* at 15.

this was the only cost that varied with changes in volume.²³ More importantly, Klick/Fisher stated that the allocation of fixed costs occurs only in Step 2 for allocating contribution.²⁴ Simply stated, they contend it would be inappropriate to consider the impact of fixed costs when allocating variable costs between the on-SARR and off-SARR segments.

The Modified ATC approach corrects for these deficiencies inherent to the Original ATC approach advocated by BNSF by using a two-step approach. First, by assuring in the first step that each segment covers its variable costs before contributing to the fixed costs of other segments, the Modified ATC approach produces economically logical results and avoids improper cross-subsidies. Second, by applying the ATC division percentage to only the contribution, the Modified ATC approach assures that contribution is allocated using an average total cost metric that accounts for both economies of density and the diminishing returns thereto at higher density levels.

²³ See Klick/Fisher VS at 31 in BNSF Petition for Clarification filed January 20, 2004 in *Xcel* (“*BNSF Petition For Clarification*”)

²⁴ See Klick/Fisher VS at 31.

III. MODIFIED ATC IS CORRECT

In this section of my VS, I will demonstrate that the STB's Modified ATC revenue division methodology properly accounts for variable and fixed costs and equitably distributes revenues between the SARR and the incumbent. My discussion is included below under the following topical headings:

- A. Modified ATC Does Not Double Count Variable Costs**
- B. Modified ATC Does Not Dilute The Fixed Cost Weighting**
- C. Modified ATC Does Not Break Revenue And Cost Alignments**
- D. Modified ATC Correctly Captures Scale Economies And Per-Unit Profitability**
- E. Modified ATC Equitably Allocates Revenues**
- F. Modified ATC Does Not Improperly Shift Revenue**
- G. Modified ATC Properly Allocates Revenues In All Cases**
- H. Modified ATC Is Consistent With ICC/STB Precedent**
- I. Baranowski/Fisher's Variable Cost Adjustment Is Flawed**

A. MODIFIED ATC DOES NOT DOUBLE COUNT VARIABLE COSTS

BNSF argues that Modified ATC impermissibly "double counts" variable costs. BNSF's argument is incorrect and is simply an attack on the STB's proper use of a two-step revenue allocation methodology for cross-over movements. In support of its double count allegation, BNSF presents a corrupted version of the Modified ATC formula and argues that because "the VC_{SARR} term clearly appears twice"²⁵ in the formula as presented, variable costs are improperly double counted.

BNSF's double count contention is not correct from an economic perspective because the purpose of Modified ATC is not to allocate (or weight) costs, but instead to equitably allocate revenues between the SARR and the residual incumbent using a two step process where in Step 1

²⁵ BNSF Comments at p. 15.

revenues are allocated to cover on-SARR and off-SARR variable costs, and in Step 2 contribution (revenues in excess of variable costs) is allocated using an average total cost metric that captures economies of density and diminishing returns thereto. The allocation of revenues in each of the separate steps must be done equitably based on economically logical allocation methods for each step. It is in this context that the formula used to allocate revenues must be evaluated (i.e., the two allocation formulae must be evaluated on their own merits for the specific purpose for which they are used.) Combining the two formulae into one (as BNSF has done) is improper and (perhaps intentionally) confuses the economic theory that necessitates a two-step process in the first place.

As discussed above, Modified ATC is based on a simple and singular premise: for cross-over movements, the variable costs associated with a given movement must be allocated between the SARR and residual incumbent before any contribution (revenue in excess of variable costs) may be allocated. The reason is also simple: any revenue division methodology that allocates revenues less than variable costs to one entity while allocating revenues greater than variable costs to the other fails the most basic principle of railroad economics. Specifically, no rational railroad will move traffic that does not cover its incremental (variable) costs.

In the second step of Modified ATC, revenue in excess of variable costs (contribution) is allocated between the SARR and the residual incumbent. As discussed above, the Board has correctly determined that economies of density should be considered in allocating contribution between the parties. Thus, the second step of the Modified ATC incorporates the average fixed costs of the SARR and residual incumbent as components and allocates contribution unevenly – with more going to relatively lower density lines to reflect that the traffic on those lines must contribute somewhat more to joint and common costs than the traffic on higher-density lines.

Importantly, the second step of Modified ATC does not consider only the relative average fixed costs of the two movement segments. This is correct because *the second step of Modified ATC is not intended to allocate average fixed costs between the parties* – it is intended to allocate contribution (i.e., revenues in excess of variable costs), which includes both fixed costs and revenues in excess of total costs (i.e., profit) using a metric that accounts for economies of density and diminishing returns thereto. It would be inappropriate and theoretically unsound to allocate contribution based solely on the relative fixed costs of the SARR and the residual incumbent.

BNSF's argument combines the two separate and distinct formulae used to allocate the two separate and distinct revenue pools (variable costs and contribution in excess of variable costs) into one formula, and critiques this combined result because the two separate formulae BNSF combined into one, each contain a variable cost component. In other words, when the two separate and distinct formulae associated with the two separate and distinct revenue allocation steps are improperly restated and presented as a one-step formula, the result might appear as nonsensical to the casual observer. Restating the two-step Modified ATC methodology as a one-step formula is a fundamental violation of the principles that necessitated the development of a two-step process in the first place.

Because fixed costs are not the only component of revenue in excess of variable costs, it would be improper (and theoretically unsound) to allocate contribution strictly based on the ratio of fixed costs between the segments. Modified ATC recognizes this need and accounts for it by allocating revenue in excess of variable costs based on the ratio of total costs between the segments. The key point that must be remembered is that the two steps of Modified ATC are separate, distinct, and mutually exclusive and the ratio used in one bears no relationship to the ratio used in the other.

The best and most equitable way to allocate revenues at or below variable costs is based on the ratio of variable costs. The best and most equitable way to allocate revenues above variable costs is based on the ratio of total costs. This is exactly what ATC does.

A simple analogy may be drawn between the application of Modified ATC and the application of a graduated tax code. Within a given tax bracket, a specific tax rate is applied to each dollar within that bracket's range. For revenues in the next bracket, a separate tax rate is applied to each dollar within that bracket's range. This is done to ensure that every rise in pre-tax salary results in an increase in after-tax salary. The rates applied within each distinct tax bracket have no bearing on the rates applied in the other brackets, *despite the fact that many of the same macroeconomic indicators are considered in the development of the rates in all of the brackets*. That is, rates in separate brackets may be conceived and calibrated with reference to common components and/or cost indices. This does not imply a double count of those indices.

A similar construct is needed in the allocation of revenue between the SARR and the residual incumbent. The "first bracket" in SARR revenue allocation is the revenue to variable costs – to which a specific ratio is applied. The "second bracket" in SARR revenue allocation is the revenue in excess of variable costs (contribution) – to which another unrelated (despite comprising a common component) ratio is separately applied.

**B. MODIFIED ATC DOES
NOT DILUTE THE FIXED
COST WEIGHTING**

BNSF and Baranowski/Fisher argue that application of the Modified ATC formula is wrong in part because it "dilute[es]... the relative weighting of fixed costs."²⁶ BNSF further asserts that "the impact of economies of density" is diluted on *all* movements, "*regardless of the*

²⁶ Baranowski/Fisher VS at 11.

actual split between variable and fixed costs on an individual movement or *the amount of contribution on the movement.*”²⁷

BNSF’s claim of systematic bias is false. As shown below, BNSF’s arguments are premised on a very limited range of contribution scenarios, but when the number of scenarios is expanded to reflect the traffic group at issue here, it is self-evident that Modified ATC properly allocates contribution. The so-called dilution (which I will show below to be nothing but clever misdirection) exists only within the limited range of hypothetical movements included in BNSF’s self-serving examples. Therefore, if BNSF had properly constructed its analysis to include a full range of revenue-to-cost scenarios, BNSF would have actually demonstrated that there is *no systematic bias* in Modified ATC favoring one party or the other based on BNSF’s dilution metric, which is the governing standard under *Major Issues*.²⁸

To understand the many problems with BNSF’s conclusions, we must evaluate the analytical inputs individually. First, BNSF’s “demonstrations” are all based on evaluation of the application of Original ATC and Modified ATC on low-R/VC movements. Baranowski/Fishers’ Figure 6 purports to show an “over-weighting” of variable costs and a corresponding “under-weighting” of fixed costs associated with a movement where revenues are exactly equal to total costs (and 133% of variable costs). In their example, Baranowski/Fisher show that in the first step of Modified ATC, 75% of the total revenues (the amount equal to the total movement variable costs) are allocated based entirely on the relative variable costs of the SARR and residual incumbent segments. They then show that in the second step of Modified ATC, the remaining 25% of the total revenues (the amount equal to the total revenues less total movement variable costs) are allocated based on the relative total costs (which include variable costs plus fixed costs) of the SARR and residual incumbent segments. Baranowski/Fisher indicate that (a)

²⁷ BNSF Comments at 17 (emphasis added).

²⁸ *Major Issues* at. 77.

75% of the revenues are allocated based 100% on the segments’ relative variable costs, and (b) the remaining 25% of the revenues are allocated based on (i) 75% on the segments’ relative variable costs, and (ii) 25% on the segments’ relative fixed costs. They eventually conclude that variable costs are “weighted” at 94% $((0.75 \times 1.00) + (0.25 \times 0.75))$, whereas fixed costs are “weighted” at 6% $((0.75 \times 0.00) + (0.25 \times 0.25))$.

BNSF then argues that because contribution is exactly equal to fixed costs in the hypothetical example constructed and presented, the fixed cost component of total costs is underweighted in the allocation of SARR revenues. The problem, BNSF claims, is that for this particular move, fixed costs account for 25% of total revenues but only 6% of the weighting in the revenue allocation formula.

In Table 2 of Baranowski/Fisher’s VS, they expand their hypothetical to three scenarios: (1) where revenues equal 75% of total costs (100% of variable costs), (2) where revenues equal 100% of total costs (133% of variable costs), and (3) where revenues equal 125% of total costs (167% of variable costs). Baranowski/Fishers’ Table 2 purports to demonstrate that – for the low-R/VC moves included in the table – fixed costs are “underweighted” as a result of the application of Modified ATC.

Table 2 below recreates Baranowski /Fishers’ original Table 2.

<u>Item</u> (1)	<u>Revenue = 75% of Total Costs</u> (2)	<u>Revenue = 100% of Total Costs</u> (3)	<u>Revenue = 125% of Total Costs</u> (3)
1. Original ATC	25%	25%	25%
2. Modified ATC	0%	6%	13%

Source: Baranowski/Fisher VS at 15.
Note: Table contains error. Modified ATC fixed cost weighting for movement with revenue = 125% of total costs and 75/25 split between variable and fixed costs should be 10%, not 13%.

Based on the data shown in Table 2 above, BNSF claims that Modified ATC dilutes the impact of the fixed cost weighting.

To demonstrate the misleading nature of BNSF's incomplete analyses, one can simply apply the same logic to a move where revenues equal 200% of total costs (as opposed to BNSF's primary example move where revenues equal 100% of total costs.)

At 200% of total costs, fixed costs are demonstrably "over-weighted" as a result of the application of Original ATC. Assume, like BNSF did in its examples, the following as given: (1) Variable costs account for 75% of total costs, (2) fixed costs account for 25% of total costs. Further assume that revenue is equal to 2 times total costs. Under Original ATC, all revenues would be allocated based 75% on the segments' relative variable costs and 25% on the segments' relative fixed costs, despite the fact that fixed costs account for only 12.5% of total revenues for this movement. Thus under Original ATC, fixed costs are given twice the weight they should be given for this high-R/VC move based on BNSF's fixed cost weighting metric.²⁹

Table 3 below expands Baranowski/Fisher Table 2 to include a broader range of R/VC movements, and includes a statement of the extent to which fixed costs are increasingly over-weighted (and revenues are increasingly over-allocated to low-density segments) as R/VC ratios increase under Original ATC.

²⁹ In Modified ATC, revenues equal to variable costs are allocated based 100% on the segments' relative variable costs. Then revenues in excess of variable costs are allocated based 75% on the segments' relative variable costs and 25% on the segments' relative fixed costs. Under this construct, 37.5% of the revenues in this example are allocated based 100% on variable costs, and 62.5% of the revenues are allocated based 75% on variable costs and 25% on fixed costs. Fixed costs are thus considered in allocating 62.5% of the revenues, even though fixed costs only account for 25% of total costs. We thus deduce that fixed costs are given an "overall representation" of 15.6% ($0.25 \times 0.625 = 0.1563$) in the weighting. The "problem," BNSF complained of on a low-R/VC move is now shown to provide an unwarranted over allocation of revenues to the residual incumbent for this high-R/VC move *even under Modified ATC*: fixed costs account for only 12.5% of total revenues yet are given 15.6% of the weighting in the Modified ATC revenue allocation formula.

<u>Item</u> (1)	<u>Revenue = 75% of Total Costs</u> (2)	<u>Rev. = 100% of Total Costs</u> (3)	<u>Rev. = 125% of Total Costs</u> (4)	<u>Rev. = 150% of Total Costs</u> (5)	<u>Rev. = 175% of Total Costs</u> (6)	<u>Rev. = 200% of Total Costs</u> (7)	<u>Rev. = 225% of Total Costs</u> (8)	<u>Rev. = 250% of Total Costs</u> (9)
1. Original ATC	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
2. Modified ATC	0.0%	6.3%	10.0%	12.5%	14.3%	15.6%	16.7%	17.5%
3. Fixed Cost as a Percent of Total Revenue	33.3%	25.0%	20.0%	16.7%	14.3%	12.5%	11.1%	10.0%
4. Original ATC Over Weighting of Fixed Costs 1/	xxx	xxx	25.0%	50.0%	75.0%	100.0%	125.0%	150.0%

1/ Line 1 ÷ Line 3 – 1 x 100.

As shown in Table 3 above, for a movement with revenues equal to 175% of total costs, fixed costs equal 14.3% of total revenues (which is exactly the weighting ATC is given using Modified ATC.) Original ATC gives the fixed cost component 25% weighting for this move. This results in fixed costs being over-weighted by 75% $[(0.250/0.143)-1]$ for this move. For a movement where revenues equal 200% of total costs, Original ATC (25%) over-weights fixed costs (12.5% of revenues) by 100%.

As Table 3 clearly shows, Baranowski/Fisher's analysis was intentionally limited to include only low-R/VC movements. By simply expanding BNSF's own analysis, it is possible to clearly demonstrate that for high-R/VC (i.e., high-contribution) movements, the effect of Original ATC is the exact opposite of BNSF's claim with respect to Modified ATC. Specifically, while BNSF claims that the impact of economies of density is understated in the

Modified ATC formula, the reality is that the impact of economies of density is vastly overstated in the Original ATC formula.

Baranowski/Fisher's analysis conveniently omits that they are actually proposing a dramatic over-allocation of revenues to cross-over movements over low-density segments on the residual BNSF for the highest revenue movements on the SARR system based on their fixed cost weighting metric. The importance of this point cannot be overstated. As shown in Table 3 above, Modified ATC does not systemically bias the results of the analysis based on this or any other metric – and Original ATC demonstrably over-allocates revenues to the residual incumbent on high-R/VC moves based on BNSF's own metric.

In a SAC analysis, the SARR should benefit from the same traffic group that is available to the incumbent, including low and high R/VC movements. Original ATC serves to essentially eliminate access to high R/VC movements for any SARR that incorporates high-density segments, as a disproportionate share of revenues for all high-R/VC movements are allocated to the low density segment (i.e., it turns high-R/VC movements into low-R/VC movements, as shown in Table 8 in Section III. F. below.)³⁰ This severely distorts the SAC analysis because it systematically reduces the amount of high R/VC traffic revenues available to the SARR, even as the incumbent railroad realizes those revenues in the real world.

In summary, BNSF is engaging in clever misdirection here. It shows a purported problem on low-R/VC movements, when in actuality it is concerned with disallowing the SARR access to the same high revenue movements BNSF enjoys in the real world. BNSF cries afoul because it “loses” revenue to the SARR on low R/VC traffic when in reality it only seeks to “take” revenue from the SARR on high R/VC traffic.

³⁰ This point is addressed in more detail below, where we deconstruct and evaluate BNSF witness Baranowski/Fishers' flawed Tables 3 and 4.

It is also worth noting that on several occasions BNSF takes great effort to point out that the Board's original rationale for "switching" from Original ATC to Modified ATC – to correct for an unintended result of applying Original ATC to low R/VC moves, namely under allocation of revenues sufficient to cover variable costs – is "irrelevant" in the present case because WFA/Basin "removed nearly all of the low-rated traffic about which the Board had been concerned."³¹ Yet, BNSF's myriad of tables and figures which purport to demonstrate the "severe" underweighting of fixed costs in Modified ATC are all focused on and include only low R/VC movements.

**C. MODIFIED ATC DOES
NOT BREAK REVENUE
AND COST ALIGNMENTS**

Figure 8 of Baranowski/Fishers' statement suffers from the same critical flaw inherent in all of their analyses in that it focuses on "the scenario under which revenues are assumed to equal total costs."³² In this very narrow spectrum of analysis, where contribution is equal to fixed costs, BNSF purports to demonstrate that Modified ATC "consistently allocates to the SARR revenues that exceed its proportionate share of total costs."³³ The arithmetic upon which this conclusion is drawn relies entirely on BNSF's analysis of only scenarios where contribution is equal to (or close to) fixed costs. As demonstrated in Table 3 above, fixed costs as a percentage of total revenues change as revenues increase, even as fixed costs as a percentage of total costs remain static. That means that Original ATC is only a "fair" allocation methodology at one point on the revenue-to-cost scale. For every move where revenue-to-cost is above that level (i.e., higher revenue movements), Original ATC under-allocates to the SARR. For moves

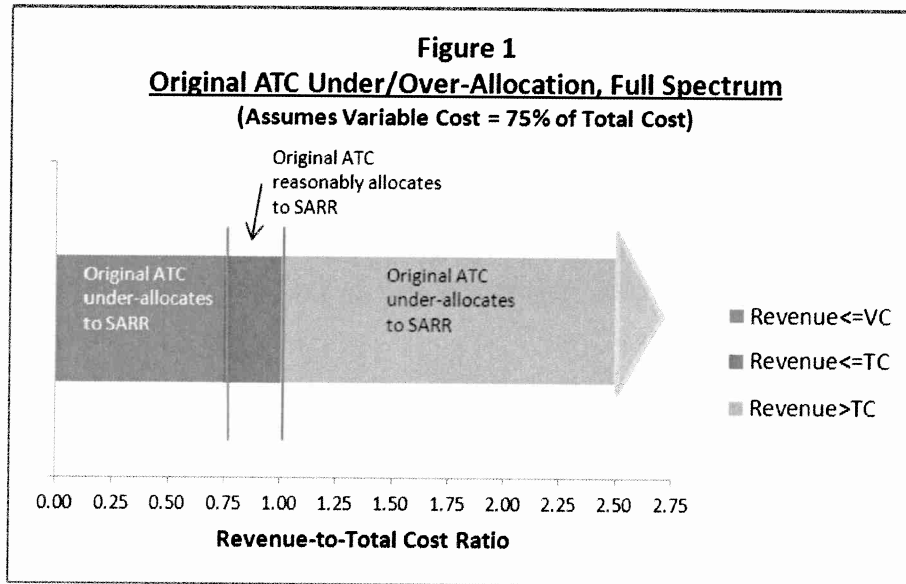
³¹ BNSF Comments at 11.

³² Baranowski/Fisher at 19.

³³ Baranowski/Fisher at 17.

where revenue-to-cost is below that level but above variable cost, (i.e., low-revenue movements), Original ATC reasonably allocates to the SARR. For moves where revenue is less than variable cost (i.e., very-low-revenue movements), Original ATC again under-allocates to the SARR.

Figure 1 below shows this problem graphically.



BNSF’s mathematical examples focus on evaluation of moves that fall into the narrow band of moves where contribution is less than or equal to fixed costs but greater than variable costs. For these moves, BNSF argues, Modified ATC “demonstrably” under-weights fixed costs in the Modified ATC revenue allocation formula. BNSF incorrectly concludes, based on these narrow evaluations, that Modified ATC under-weights fixed costs for all moves, regardless of revenue levels.

Baranowski/Fisher’s Table 3 takes this misrepresentation one step further.³⁴ In the Baranowski/Fisher’s Table 3,³⁵ Baranowski/Fisher purport to show that under Modified ATC, revenues are over-allocated to the SARR under three scenarios: (1) “Revenues = 75% of Total

³⁴ We evaluate and critique Baranowski/Fisher’s Table 3 in more detail below.

³⁵ Baranowski/Fisher at 18.

Costs,” (2) “Revenues = Total Costs,” and (3) “Revenues = 125% of Total Costs.” However, the analysis relies on the false presumption that Modified ATC actually over-allocates revenue to the SARR in all three cases, when this is clearly not the case.

For example, in case (1) where Revenues = 75% of Total Costs, we know that Revenues are exactly equal to variable costs based on BNSF’s analytical construct (variable costs = 75% of total costs). Therefore, we know that in the first step of Modified ATC the revenues up to variable costs are allocated based on the relative SARR and residual incumbent variable costs. Therefore in this scenario for both the SARR and the residual incumbent the variable costs are covered and no contribution above variable costs is allocated to either party. This is the only economically sound way to allocate revenue to the segments when revenue equals (or is less than) variable costs. Yet Baranowski/Fisher’s Table 3 shows the results from applying Modified ATC to this move (described above) and the results from applying Original ATC to this move (SARR receives less than variable cost, residual incumbent receives variable cost plus contribution) and concludes that the difference between the two values is properly labeled “over-allocation of SARR Revenue” under Modified ATC. In this case, the difference should clearly be titled under-allocation of SARR Revenue under Original ATC. This move falls into the blue region in Figure 1 above.

Similarly, in Baranowski/Fisher’s case (3) where Revenues = 125% of Total Costs, contribution is equal to double the fixed costs based on BNSF’s analytical construct (variable costs = 75% of total costs). Therefore, fixed costs represent 20% of total revenues and 25% of total costs for this movement. Under Original ATC, the revenues would be allocated based on a 25% weighting of the fixed cost component, even though fixed costs represent less than 25% of total revenues. Therefore in this scenario Original ATC over-weights fixed costs in the revenue allocation formula. Yet BNSF’s table shows the results from applying Modified ATC to this

move and the results from applying Original ATC to this move and concludes that the difference between the two values is properly labeled “over-allocation of SARR Revenue” under Modified ATC. This label is obviously incorrect when Original ATC clearly under-allocates revenue to the SARR in this case. This move falls into the green region in Figure 1 above.

Although it could be argued that in Baranowski/Fisher’s case (2) where revenues equal total costs, Modified ATC under-allocates revenue to the residual incumbent (for reasons stated elsewhere in this VS, I do not agree with this premise, but for purposes of this example I am including this statement here), the specific revenue-to-cost relationships that make this conclusion for this particular movement are not transitive to any other movement with a different revenue-to-cost relationship.

BNSF’s “logic” that because fixed costs are “under-weighted” when Modified ATC is applied to movements *where revenue exactly equals total cost* proves that fixed costs must be “under-weighted” for *all movements* to which Modified ATC is applied is preposterous and must be rejected.

D. MODIFIED ATC CORRECTLY CAPTURES SCALE ECONOMIES AND PER-UNIT PROFITABILITY

Original ATC produces absurd results by making low density lines more profitable on a per ton basis than high density lines. In contrast, Modified ATC produces reasonable results that reflect basic economic principles.

BNSF claims that Modified ATC fails to “appropriately consider economies of density, which are reflected only in fixed costs.”³⁶ The reality is that Modified ATC does “appropriately consider” economies of density, but Original ATC serves to systematically prevent the SARR

³⁶ BNSF Comments at 2.

from enjoying the same economies of density enjoyed by the defendant railroad. As noted by BNSF, economies of scale, scope, and density are “the defining characteristic[s] of the railroad industry.”³⁷ Scale economies provide firms that enjoy them with greater profitability per unit than those that do not. Similarly, within a firm, scale economies are not universal across all operations. For freight railroads, the greatest per-unit profitability on a movement is enjoyed on the highest density segments, all else being equal. A 100-mile unit coal train movement over a high-density line is more profitable than a 100-mile unit coal train movement over a low-density line, specifically because less of the revenues on the high-density line are needed to defray joint and common costs. This fundamental principle is the very incentive railroads like BNSF have to invest their capital strategically to maximize utility and by extension, scale economies. But BNSF argues that this market function should be stripped from a Stand-Alone Railroad – that SARRs should not enjoy the same economic advantage associated with economies of scale that real world railroads enjoy.

Economies of density reflect how per-unit profits for a network of a given size initially increase with increases in output. BNSF has heavily invested capital in the Powder River Basin (“PRB”) region of its network over the last four decades because moving PRB traffic is profitable and becomes more profitable with increased volumes (output). BNSF strategically invested to accommodate growth on high-density lines to leverage scale economies and *maximize profit on the traffic moving over those lines*. BNSF did not invest in PRB facilities to improve the return on its downstream assets. Yet BNSF seeks a revenue allocation methodology that does just that. It transfers the profitability associated with traffic moving on high-density lines to traffic moving on low-density lines. In essence, BNSF seeks to eliminate the SARR’s incentive to maximize its efficiency. The LRR replicates, in part, what could be considered the

³⁷ BNSF Comments at 5.

most profitable (on a per-unit basis) segment of BNSF's system. However, the methodology BNSF endorses (Original ATC) serves to transfer the inherent profitability of this high-density segment to less profitable low-density segments, thereby robbing the SARR of the very scale economies that incited BNSF to heavily invest in PRB facilities in the first place.

What BNSF is actually arguing is that economic principles should not apply to a SARR. High-density lines *are* more profitable on a per-unit basis than low-density lines. A revenue allocation methodology should reflect that truth. BNSF seeks to apply the methodology that most skews this market reality to create a hypothetical construct where movements on low-density lines are more profitable on a per-unit basis than movements on high-density lines.

The hypothetical example at pages 2-3 of Baranowski/Fisher's VS underscores this issue. In the hypothetical example posited by Baranowski/Fisher, a 1000-mile movement is split between a 500-mile SARR segment over a 50-million-ton line and a 500-mile off-SARR segment over a 25-million-ton line. The rate for the movement is \$15.00 per ton. In the example, the variable costs for each 500-mile segment are \$5.00 per ton. The fixed costs are \$1.25 per ton for the high-density SARR segment and \$2.50 per ton for the low-density off-SARR segment. The total costs are $(\$5.00 \times 2) + \$1.25 + \$2.50$, or \$13.75. Under original ATC, the SARR revenue allocation is $\$6.25/\13.75 , or 45.5%. When applied to the movement revenue (\$15.00), the resulting SARR revenues from the move are \$6.82, and the revenues allocated to the residual incumbent are \$8.18. Thus, the SARR profit on the move is $\$6.82 - \6.25 , or \$0.57. The residual incumbent profit is $\$8.18 - \7.50 , or \$0.68. The move on the low-density segment is therefore more profitable, after total costs are subtracted, than the move on the high-density segment. This is an economically illogical result.

Under Modified ATC, the allocation is as follows: \$5.00 is allocated to both the SARR and the residual incumbent to cover the variable costs of service of both carriers. The remaining

\$5.00 in revenue is allocated based on the percentage calculated above, 45.5% to the SARR and 54.5% to the residual incumbent. The SARR receives $\$5.00 + (.455 \times \$5.00)$, or \$7.27. The residual incumbent receives $\$5.00 + (.545 \times \$5.00)$, or \$7.73. Thus, the SARR profit on the move is $\$7.27 - \6.25 , or \$1.02. The residual incumbent profit is $\$7.73 - \7.50 , or \$0.23. The move on the high-density segment is therefore more profitable, *after total costs are subtracted*, than the move on the low-density segment. This is an economically logical result. The Table 4 below compares the two methodologies discussed here.

Table 4
**Comparison of Revenue Division
Methodologies, BNSF Hypothetical, R/VC = 1.50**

<u>Item</u> (1)	<u>Original ATC</u> (2)	<u>Modified ATC</u> (3)
1. Revenue	\$15.00	\$15.00
2. SARR Total Costs	\$6.25	\$6.25
3. RI Total Costs	\$7.50	\$7.50
4. SARR Density	High	High
5. RI Density	Low	Low
6. SARR Division	\$6.82	\$7.27
7. RI Division	\$8.18	\$7.73
8. SARR Profit	\$0.57	\$1.02
9. RI Profit	\$0.68	\$0.23
10. Result	Illogical	Logical

As shown in Table 4 above, Original ATC produces per unit profits that do not comport with actual railroad economics. The problem is even more evident when a relatively high rated move is evaluated. Table 5 below assesses the impact of applying Original ATC to a move with an R/VC of 2.20.

<u>Item</u> (1)	<u>Original ATC</u> (2)	<u>Modified ATC</u> (3)
1. Revenue	\$22.00	\$22.00
2. SARR Total Costs	\$6.25	\$6.25
3. RI Total Costs	\$7.50	\$7.50
4. SARR Density	High	High
5. RI Density	Low	Low
6. SARR Division	\$10.00	\$10.45
7. RI Division	\$12.00	\$11.55
8. SARR Profit	\$3.75	\$4.20
9. RI Profit	\$4.50	\$4.05
10. Result	Illogical	Logical

As Table 5 above indicates, Original ATC produces even more biased results on high revenue movements.

Finally, as a reminder of the reason why the STB properly introduced Modified ATC in the first place, it is helpful to consider a move with an R/VC of 1.00, as depicted in Table 6 below.

<u>Item</u> (1)	<u>Original ATC</u> (2)	<u>Modified ATC</u> (3)
1. Revenue	\$10.00	\$10.00
2. SARR Total Costs	\$6.25	\$6.25
3. RI Total Costs	\$7.50	\$7.50
4. SARR Density	High	High
5. RI Density	Low	Low
6. SARR Division	\$4.55	\$5.00
7. RI Division	\$5.45	\$5.00
8. SARR Contribution to Fixed Costs	(\$0.45)	\$0.00
9. RI Contribution to Fixed Costs	\$0.45	\$0.00
10. Result	Antithetical to rate-setting procedures: SARR does not recover incremental costs, Residual Incumbent recovers incremental costs and contribution to joint and common costs	Reflective of rate-setting procedures: SARR and Residual Incumbent recover incremental costs, no contribution to joint and common costs for either entity

In each of the three examples above (R/VC=1.00, R/VC=1.50, R/VC=2.20) it is clear that Original ATC allocates far too much revenue to the low-density residual incumbent segment, making the low-density more profitable on a per-unit basis after all costs (variable and fixed) are covered for movements where revenues are greater than total costs, and turning the SARR into a money loser (allocated revenues are less than variable costs) while allocating variable costs plus contribution to the residual incumbent on movements where revenues are less than total costs.

E. MODIFIED ATC EQUITABLY ALLOCATES REVENUES

Baranowski/Fisher claim that the purpose of a cost-based revenue allocation methodology is to “maintain the same relationship of revenues to total costs on each portion of a movement.”³⁸ This statement is factually incorrect and self-serving. The purpose of cost-based

³⁸ BNSF Comments at 9.

revenue allocation is to ensure cost-coverage for both parties and equitably allocate revenues in excess of total costs. As shown below, Modified ATC comes much closer to this result than Original ATC.

BNSF states that under Modified ATC, the SARR may receive a greater share of the revenue than its share of the total costs. BNSF further states that if the ratio of revenue to total costs for the SARR is greater than the ratio of revenue to total costs for the residual incumbent, the residual incumbent will have a hard time covering its costs.³⁹

These statements are nothing more than a clever play on words by BNSF intended to confuse the issue. BNSF compared the ratio of SARR revenues to through revenues to the ratio of SARR total costs to through movement total costs and concluded that if the former was greater than the latter, there was a problem. The important issue is that in the example movements, both the SARR and the residual incumbent were allocated revenues which exceeded their total costs. The fact that the ratios examined were not identical simply demonstrates that one is not directly comparable to the other. A return to the simple example in Table 5 above demonstrates the flaws in BNSF's logic and reveals BNSF's motives, as shown in Table 7 below.

³⁹ BNSF comments at 19.

<u>Item</u> (1)	<u>Original ATC</u> (2)	<u>Modified ATC</u> (3)
1. Revenue	\$22.00	\$22.00
2. SARR Total Costs	\$6.25	\$6.25
3. RI Total Costs	\$7.50	\$7.50
4. Ratio of SARR total costs to through movement total costs	0.455	0.455
5. SARR Division	\$10.00	\$10.45
6. RI Division	\$12.00	\$11.55
7. Ratio of SARR revenues to through movement revenues	0.455	0.475
8. SARR Profit	\$3.75	\$4.20
9. RI Profit	\$4.50	\$4.05
10. Ratio of SARR revenues above total costs to through movement revenues above total cost	0.455	0.509

Table 7 above tells the full story. Whereas BNSF claims there is a problem based on the difference between the values in lines 4 and 7 of Column (3), the real problem is shown on line 10 of Column (2). For high-R/VC movements, original ATC systematically over allocates revenues to the low-density segment. In the example move (which assumes equal segment length and equal variable costs between the SARR and the residual incumbent), both carriers receive revenues in excess of their total costs. Under Original ATC, the high-density carrier receives 45.5% of the revenues above total costs. Under Modified ATC, the high-density carrier receives 50.9% of the revenues above total costs. While neither is perfect (neither results in a 50/50 split in revenues above total costs), Modified ATC is clearly far superior. It is only through evaluation of high-revenue moves that BNSF's true motivation for a return to Original ATC is clear. Original ATC ensures that total costs are covered for both parties, but that the low-density segment then is allocated a disproportionate share of the revenue above total costs.

Baranowski/Fisher's Exhibit 4 purports to show that Modified ATC systematically over-allocates revenue to the SARR because the total SARR revenue division percentage is greater than the SARR portion of total costs. As shown in Table 7 above, there is no reason for the SARR portion of costs to equal the SARR revenue division except for in the examples created by BNSF's witnesses wherein every movement's total costs exactly equal its revenues. As shown in the above Table 7 example, the movement traverses the SARR and residual incumbent for equal distances at equal variable costs.

- Under Original ATC, the SARR portion of total costs, the SARR *contribution* division, the overall SARR revenue division, and the SARR portion of revenue in excess of total costs (profit) are *all* 45.5%.
- Under Modified ATC, the SARR portion of total costs and the SARR *contribution* division remain 45.5%, but the overall SARR revenue division is 47.5%, and the SARR portion of revenue in excess of total costs (profit) is 50.9%, a much more logical and reasonable allocation of revenue in excess of total costs than under Original ATC.

On higher-revenue movements, which the SARR should have a natural incentive to include in its traffic group, ensuring that the SARR's portion of costs equals its *overall* revenue division clearly under-allocates revenues to the SARR and creates an economically illogical disincentive for the SARR to include high-R/VC traffic in its traffic group.

The proper evaluation for Baranowski/Fisher to have included would have been a comparison of the SARR portion of costs to the SARR division of contribution (revenue in excess of variable costs). As I explained in detail above, it is the allocation of contribution that should properly reflect the relative total costs of the SARR and residual incumbent. Exhibit No. 2 to this VS recasts the Baranowski/Fisher Exhibit 4 in its proper light, and shows that there is no over-allocation of contribution to the SARR under Modified ATC. Therefore, there is no over-allocation of through revenue to the SARR under Modified ATC.

**F. MODIFIED ATC DOES
NOT IMPROPERLY
SHIFT REVENUE**

Throughout BNSF's Comments and Baranowski/Fisher's VS, they refer to the "inappropriate shifting" of revenues from the residual incumbent to the SARR "after the change" from Original ATC to Modified ATC.⁴⁰ Couching the merits of Modified ATC vis-à-vis Original ATC in this way is misleading and inappropriate. As Modified ATC was introduced by the STB as a remedy for an obvious flaw in the Original ATC methodology, it can just as well be said that Original ATC inappropriately shifts revenues from the SARR to the residual incumbent. Original ATC is not the correct methodology – and Modified ATC is not the incorrect methodology – simply because Original ATC predated Modified ATC.

One example of this framing issue is Baranowski/Fisher's discussion of their Exhibit No. 3, which they claim shows the Modified ATC approach over recovers the revenues necessary to cover the variable costs on the SARR portion of the movement.⁴¹ What Baranowski/Fisher's Exhibit No. 3 does not show is the minimal impact on the residual incumbent from switching from Original ATC to Modified ATC. As shown in Exhibit No. 3 to this VS, switching from the Original ATC division approach to the Modified ATC divisions approach has less than a 3 percent impact on the residual BNSF's revenues.

In another example, Baranowski/Fisher's Table 3 purports to demonstrate that Modified ATC would over-allocate revenues to the SARR in three hypothetical scenarios under which

⁴⁰ See for example Baranowski/Fisher Figure No. 4.

⁴¹ Baranowski/Fisher's Exhibit No. 3 and supporting arguments also exploit an inconsistency inherent to the STB's ATC division approach. Because the LRR's base year of operation was 2004, all of the URCS variable costs used in the ATC division process are in 2004 dollars. However, the revenues Baranowski/Fisher use in their Exhibit No. 3 analysis are 2005 revenues. This creates an "apples-to-oranges" comparison issue that increases their revenue to variable cost ratios since 2004 costs were lower than 2005 costs. I have included in my workpapers a correction to Baranowski/Fisher's analysis that places both costs and revenues on the same dollar basis. With this correction, seven (7) out of 32, or 22 percent, of the cross-over movements have R/VC ratios of less than 100 percent.

revenues are assumed to equal: (1) 75% of total costs, (2) 100% of total costs, and (3) 125% of total costs.⁴² In each of the three scenarios, BNSF presumes Original ATC results in the correct allocation of revenues, and thus couches its Table 3 presentation as a measure of the level of over-allocation of revenues to the SARR in each of the three scenarios. A simple expansion of BNSF's table highlights many flaws with its logic and argument. Table 8 below contains a restated and expanded table.

Table 8 Expanded Baranowski/Fisher Table 3 Demonstration of Problems with Original ATC Allocations at Various Revenue Levels								
Revenues = 75% of Total Costs								
	SARR Portion of Total Costs	Original ATC Revenue %	Modified ATC Revenue %	Total Movement R/VC	Original ATC SARR R/VC	Original ATC RI R/VC	Modified ATC SARR R/VC	Modified ATC RI R/VC
Move #3	65%	65%	67%	100%	98%	104%	100%	100%
Move #4	47%	47%	50%	100%	95%	105%	100%	100%
Move #5	36%	36%	40%	100%	90%	107%	100%	100%
Move #6	27%	27%	33%	100%	81%	109%	100%	100%
Revenues = Total Costs								
	SARR Portion of Total Costs	Original ATC Revenue %	Modified ATC Revenue %	Total Movement R/VC	Original ATC SARR R/VC	Original ATC RI R/VC	Modified ATC SARR R/VC	Modified ATC RI R/VC
Move #3	65%	65%	66%	126%	123%	131%	125%	127%
Move #4	47%	47%	49%	130%	123%	136%	128%	131%
Move #5	36%	36%	39%	136%	123%	145%	133%	139%
Move #6	27%	27%	31%	151%	123%	165%	142%	156%
Revenues = 125% of Total Costs								
	SARR Portion of Total Costs	Original ATC Revenue %	Modified ATC Revenue %	Total Movement R/VC	Original ATC SARR R/VC	Original ATC RI R/VC	Modified ATC SARR R/VC	Modified ATC RI R/VC
Move #3	65%	65%	66%	157%	154%	164%	156%	160%
Move #4	47%	47%	49%	162%	154%	171%	159%	165%
Move #5	36%	36%	38%	170%	154%	181%	163%	175%
Move #6	27%	27%	30%	189%	154%	206%	172%	197%

As shown in Table 8 above, there are many errors in BNSF's logic. First, in the system where Revenues equal 75% of total costs (R=VC) for all movements, Original ATC clearly

⁴² Baranowski/Fisher VS at 18.

under-allocates revenue to the SARR, as the SARR is allocated less than its variable costs while the residual incumbent is allocated its full variable costs plus some contribution to joint and common costs. This is precisely the reason why the STB instituted Modified ATC in the first place.

Second, in the system where Revenues equal 100% of total costs for all movements, Original ATC results are clearly nonsensical. Under the scenario posited by BNSF, the R/VC ratio increases steadily as the movements increase in length. However, under Original ATC, the SARR R/VC is capped at a level well below the total movement R/VC while the residual incumbent R/VC increases at a far greater rate than the rate at which the overall R/VC increases. The application of Original ATC clearly has the effect of restricting the SARR from access to real-world high-R/VC movements, and improperly diverting the revenues on those movements to the residual incumbent.

Under Modified ATC, the SARR R/VC remains at a level that is consistently below the total movement R/VC, but it properly increases as total movement R/VC increases. The residual incumbent R/VC is consistently above total movement R/VC, but it tracks changes in total movement R/VC much more reasonably.

Baranowski/Fisher's Table 4 builds off their Table 3 and purports to further demonstrate that Modified ATC would over-allocate revenues to the SARR in BNSF's hypothetical "scenario under which revenues are assumed to equal total costs".⁴³ As discussed at length above and as depicted in Figure 1, this hypothetical assumes that all moves would fall into a very narrow band (in fact a single point) on the revenue-to-cost spectrum. By definition, this narrow view cannot and does not prove that there are any systematic problems with the Modified ATC methodology. It simply shows that in one particularly unlikely hypothetical scenario, Original ATC would

⁴³ Baranowski/Fisher VS at 19.

produce reasonable results. In BNSF’s hypothetical, total revenues are exactly equal to total costs for all movements. Therefore any revenue allocation scheme that did not allocate revenues in the exact proportion of total costs would result in a failure to cover total costs for the residual incumbent while covering total costs for the SARR.

Table 9 below includes BNSF’s original Table 4, expanded to include variable costs and similar comparisons for scenarios where revenues equal variable costs, and where revenues equal 1.25 times total costs.

Table 9					
Expanded Baranowski/Fisher Table 4					
<u>Demonstration of Correctness of Modified ATC Allocations at Various Revenue Levels</u>					
Revenues = 75% of Total Costs					
	SARR Segments	Off-SARR Segments	System Total	SARR Contribution	Residual Incumbent Contribution
Total Costs	\$135	\$150	\$285	xxx	xxx
Variable Costs	\$110	\$100	\$210	xxx	xxx
Original ATC Revenues	\$103	\$107	\$210	(\$7)	\$7
Modified ATC Revenues	\$110	\$100	\$210	\$0	\$0
Revenues = Total Costs					
	SARR Portion of Total Costs	Original ATC Revenue %	Modified ATC Revenue %	SARR Contribution	Residual Incumbent Contribution
Total Costs	\$135	\$150	\$285	xxx	xxx
Variable Costs	\$110	\$100	\$210	xxx	xxx
Original ATC Revenues	\$135	\$150	\$285	\$25	\$50
Modified ATC Revenues	\$142	\$143	\$285	\$32	\$43
Revenues = 125% of Total Costs					
	SARR Portion of Total Costs	Original ATC Revenue %	Modified ATC Revenue %	SARR Contribution	Residual Incumbent Contribution
Total Costs	\$135	\$150	\$285	xxx	xxx
Variable Costs	\$110	\$100	\$210	xxx	xxx
Original ATC Revenues	\$169	\$188	\$356	\$59	\$88
Modified ATC Revenues	\$176	\$180	\$356	\$66	\$80

As displayed in Table 9 above, Original ATC fails in the scenario where revenue equals variable cost for all movements, as it leaves the SARR with revenues insufficient to cover its variable costs while allocating revenues in excess of variable costs to the residual incumbent. Additionally, we see that in the scenario where revenue equals 125% of total cost for all movements, both the SARR and the residual incumbent recover their total costs plus earn a profit under either the Original or the Modified ATC scenarios. However, the Original ATC results are nonsensical as they allocate more profit (revenues in excess of total costs) to the lower density segment, which, as discussed above, is contrary to economic principles.

These expanded tables serve to further demonstrate that BNSF's claims of systematic bias are completely erroneous. It is only where revenues fall between variable costs and total costs that one could conceivably argue that Original ATC is in any way superior to Modified ATC. Modified ATC is clearly superior in all other circumstances, and clearly is not systematically biasing the SAC model or the results of the SAC analysis.

Importantly, BNSF never complains that Modified ATC produces unreasonably low profits for the residual incumbent. When stripped of the smoke and mirrors, BNSF's argument can be seen for what it is: an attempt to allocate unreasonably high profits to movement segments over low-density lines, and to allocate unreasonably low profits to movement segments over high-density lines.

**G. MODIFIED ATC
PROPERLY ALLOCATES
REVENUES IN ALL CASES**

Baranowski/Fisher claim that the STB developed the Modified ATC approach because of the result of the application of Original ATC to the original SARR traffic group. Specifically, they state that the result of the application of Original ATC was to allocate revenues to the

SARR that were insufficient to cover the variable costs associated with those movement segments while allocating revenues in excess of the residual incumbent segment variable costs on those movements.⁴⁴ BNSF further asserts that the reason for the Board's change was to account for the shortfall that resulted from the application of Original ATC in this case. In fact, the Board's decision to change the ATC formula was not designed to remedy the results of its application in a single case. The WFA/Basin case just happened to include traffic that highlighted the critical flaw inherent in the Original ATC methodology. The Board recognized the flaw and took steps to eliminate it. Specifically:

“The traffic group included considerable traffic generating revenue either below or barely above variable cost, and because the off-SARR segments of the movements have lower densities (meaning those segments are to be assigned a higher prorated share of the revenues), the practical effect would have been to drive the revenue-to-variable cost (R/VC) percentages of the on-SARR movements below 100% (or, if the total revenue is already less than variable costs, even lower). Thus the revenue allocation for the on-SARR portion of those movements would have been insufficient to cover the variable cost of handling traffic on the highest-density portion of the movement.

To avoid such an illogical result, instead of applying the ATC allocation procedure to total revenue, we applied the procedure to total revenue contribution (i.e., revenue in excess of variable cost). Accordingly, the revenue assigned to the on-SARR part of a cross-over movement would equal the variable cost to haul the traffic over the facilities replicated by the SARR plus the portion of additional revenue contribution allocated in accordance with ATC.”⁴⁵

Baranowski/Fisher further state that the original problem that caused the Board to recognize the critical flaws in the Original ATC approach (the presence of low-R/VC movements) “virtually disappeared” when WFA/Basin recast its traffic group to include significantly less low-rated traffic. First, by BNSF's own admission, the issue is not moot

⁴⁴ Baranowski/Fisher VS at 5.

⁴⁵ See STB's February 28, 2008 Decision in *WFA/Basin* at 4.

because three shipments included in the current traffic group would be allocated insufficient revenues to cover their variable costs if Original ATC were applied in this case.⁴⁶

Second, the Board should not make methodological adjustments or exceptions in this case that will render its procedures inapplicable in another case. As the Board said in its February 17, 2009 Decision in *WFA/Basin*:

“While there may be less traffic with revenue at or near its variable costs in this traffic group, the approach we use here will be applied in all SAC cases, including in cases decided under our simplified SAC procedures. We seek a uniform revenue allocation method and remain convinced that the modification adopted in the Sept. 2007 Decision is reasonable and necessary to preserve the integrity of the ATC approach.”⁴⁷

Finally, the basis for BNSF’s entire “demonstration” that Modified ATC over-allocates revenues to the SARR is an analysis of low-R/VC movements (principally movements with $R/VC = 1.33$). As shown above, BNSF’s narrowly scoped analysis does not withstand scrutiny.

BNSF also asserts that because a shipper can determine the traffic that comprises a SARR’s traffic group and can eliminate low rated movements, there is no reason to use the Modified ATC process unlike in Simplified SAC where the shipper has no control over traffic selection. BNSF states:

Even if use of modified ATC were necessary in Simplified SAC cases because the complainant cannot select its traffic group in those cases, that is no reason to use modified ATC in full SAC cases where complainants are fully able to exclude from the SAC analysis low-rated traffic that they determine does not make sufficient contribution to coverage of SARR costs.⁴⁸

BNSF’s argument is a diversionary tactic because the issue is not whether the revenue divisions can cover the SARR’s costs as inferred by BNSF, but rather whether the division can

⁴⁶ BNSF Comments at 5.

⁴⁷ See STB February 17, 2009 Decision in *WFA/Basin* at 13.

⁴⁸ BNSF Comments at 26.

cover the incumbent railroad's costs. As indicated by the STB in its *Major Issues* decision, the objective of ATC is to select a revenue allocation methodology that reflects the incumbent railroad's relative costs of providing service over the two segments.⁴⁹ The STB reaffirmed this position in its February 2009 *WFA/Basin* decision in stating that the objective of ATC is to "reflect the defendant carrier's relative costs of providing service over the relevant segments of its network."⁵⁰ The fact that a shipper can select any traffic it wants has no impact on the ATC process as the ATC division is designed to allocate revenues based on the incumbent railroad's costs and not the SARR's costs.

The STB's decision to use Modified ATC is also consistent with CMP and SAC because the purpose of SAC is to measure the most efficient stand-alone railroad capable of handling the issue traffic. This is why a SARR's traffic group can include movements with R/VC ratios of less than 100% based on the incumbent carrier's variable costs of service. Because of the SARR's greater efficiency, it can carry traffic at a lower cost. This does not, however, remove the economically logical requirement that the divisions cover an incumbent carrier's attributable costs before making a contribution to the incumbent carrier's fixed costs and profits.

H. MODIFIED ATC IS CONSISTENT WITH ICC/STB PRECEDENT

BNSF asserts that the STB's claim that Original ATC can lead to illogical results and improper cross-subsidies is inconsistent with prior STB decisions. Instead, BNSF points towards several STB rulings and decisions, including *Non-Coal Rate Guidelines*, and the STB's

⁴⁹ *Major Issues* at 25.

⁵⁰ *WFA/Basin* February 2009 at 13. If the purpose were to measure the costs of the SARR instead of the incumbent carrier, then the SARR densities would have to be used in developing the ATC divisions, which, given the much lower density of the SARR system, would shift more revenue to the SARR railroad.

Christensen Report, to assert that because a movement's revenues are lower than the movement's URCS variable costs does not mean that the movement is not contributing to unattributable costs. In other words, BNSF's position is that it is not illogical for the SARR's portion of a railroad's total rate to be below the URCS variable costs for the SARR's portion of the movement.

There are several flaws with BNSF's argument. First, while the STB stated in *Non-Coal Rate Guidelines* that an R/VC ratio of less than 100% was not necessarily an indication of a movement not covering all of its attributable costs, the STB also stated there is no accurate way to measure a movement's attributable costs given current regulatory costing models, and URCS is the best proxy available to measure attributable costs. So while an R/VC ratio below 100% *may* cover a movement's attributable costs and avoid cross subsidy issues, an R/VC ratio of 100% ensures *all* attributable costs are covered.

Second, BNSF's argument implies that the STB completely rejected the idea that a movement was being cross-subsidized just because its revenues were below its variable costs in its *Non-Coal Guidelines* decision, and therefore failed to adopt the management efficiency adjustment to the RSAM calculation. This was not the case. The STB determined because it could not accurately measure attributable costs with current costing methods that it would calculate adjusted and unadjusted RSAM figures and treat them as the relevant starting range. In this way, the STB could ensure all factors were covered. The same logic holds in using the URCS variable costs to allocate the revenue in ATC – namely it ensures that the revenue on each portion of a movement is covering its attributable costs based on the incumbent carrier's costs.

Third, the STB has consistently stated that URCS variable costs are the only costs that can be used in regulatory proceedings. To truly understand whether the SARR or non-SARR portion of a movement is being cross-subsidized would require detailed internal costs on the SARR and non-SARR portions of a movement or, at the very least, movement-specific

adjustments. Since the STB has consistently stated that these types of costs have no place in a regulatory proceeding, URCS must be used.

**I. BARANOWSKI/FISHER'S
VARIABLE COST
ADJUSTMENT IS FLAWED**

At page 21-22 of their VS, Baranowski/Fisher claim they have developed a third alternative revenue division approach, should the Board continue to believe both the SARR and residual incumbent are entitled to receive revenues to cover variable costs, before any contribution above variable costs is allocated. Under Baranowski/Fisher's alternative approach, Original ATC would be used to divide total movement revenues on all movements with through R/VCs greater than 1.0, "any movements with SARR allocated revenues below URCS costs for on-SARR segments, would have revenues increased to equal the variable costs" and "[m]ovements with through revenue R/VC ratios less than or equal to one would be allocated based on relative variable cost" ⁵¹ This methodology is touted as one that would not distort "the relative total-cost allocation for other movements that do not contribute to [the Board's concern that there is a revenue shortfall to some low-rated movements under original ATC]." ⁵²

There are several problems with this approach. First, it is completely unnecessary. Modified ATC is, for the reasons outlined above, the best approach to allocating revenues. It properly separates the revenues into two pools: (1) revenues equal to (or up to) variable costs, and (2) revenues in excess of variable costs (contribution). It uses the most appropriate allocation ratios for each of the two separate and distinct revenue pools to account for two bedrock economic principles: (1) that revenues must first cover firms' variable costs before

⁵¹ Baranowski/Fisher VS at 22.

⁵² Baranowski/Fisher VS at 22.

contributing to joint and common costs, and (2) economies of density must be considered in allocating revenues in excess of variable costs, but that the law of diminishing returns dictates that total costs are a more appropriate metric for this purpose than fixed costs.

Second, the Baranowski/Fisher alternative is really not a single approach, but instead employs three separate formulas to allocate revenues, one of which is identical to the procedures used in Modified ATC. Under this new allocation scheme, Modified ATC would be used to allocate revenues for movements with R/VC less than or equal to 1.0. For movements with R/VC above 1.0 *either* Original ATC *or* this new variation of ATC should be used. We have demonstrated above that Modified ATC is clearly superior to Original ATC for high-R/VC movements because Original ATC severely over-weights fixed costs in allocating revenues on high-R/VC movements. Therefore, a critical flaw inherent in Original ATC would not be remedied and as a result revenues for the most profitable real-world movements would be withheld from the SARR.

Third, the Baranowski/Fisher alternative essentially allocates variable costs to both entities; then allocates contribution to the low-density segment (residual incumbent) before it allocates any contribution to the high-density segment (SARR). The SARR receives variable cost coverage, while the residual incumbent receives variable cost coverage plus contribution (the high-density segment (the SARR in this case) is allocated zero revenue above variable cost on many movements with R/VC >1.0.) This is an extension of the same problem that led to the STB's development and implementation of Modified ATC.

For the reasons outlined above, Original ATC severely over-weights fixed costs for high-R/VC movements and over-allocates revenues to low-density segments on those movements. This virtually restricts the SARR from access to all high-R/VC traffic the incumbent moves in the real world.

IV. **FAIRNESS REQUIRES THE USE OF MODIFIED ATC**

WFA/Basin first presented their opening evidence in this proceeding in April 2005 and filed their Rebuttal evidence five months later in September 2005. Those filings were developed under the then prevailing SAC rules, including the MSP revenue allocation method and the Percent Reduction rate adjustment mechanism. If the STB had continued to rely upon these methodologies in adjudicating WFA/Basin's SAC presentation, WFA/Basin would have proven that SARR revenues exceeded SAC in all periods because, as shown in the Board's September 2007 decision, SARR revenues calculated using MSP exceeded SAC by approximately \$1.8 billion.

Instead of finding for WFA/Basin under the rules and procedures available at the start of WFA/Basin's case, the STB held its decision in abeyance while it promulgated revised procedures in its *Major Issues* proceeding. The STB then instructed WFA/Basin and BNSF to file supplemental evidence based on WFA/Basin's initial traffic group and SARR system using the new procedures included in the *Major Issues* decision, including the ATC division approach. As shown in the September 2007 decision, application of these new methodologies to the originally configured SARR resulted in net SARR revenues being less than SAC over the analysis period.

However, as the STB correctly recognized in the September 2007 Decision, it was fundamentally unfair to retroactively apply the new ATC method to WFA's originally configured SARR and the STB offered WFA/Basin the opportunity to adjust its SARR configuration, operations and traffic group to reflect the idiosyncrasies of the STB's new procedures, including the Modified ATC approach used in the September 2007 decision. WFA/Basin accepted this opportunity, and, at great financial costs, developed and modeled a new SARR traffic group and configuration. This redesign was not a simple exercise. It involved

designing a whole new SARR system, including the vetting and testing customarily involved in developing a SAC presentation.

This revised SARR was designed to maximize the revenue available to the SARR while minimizing construction and operating costs taking into consideration the STB's new SAC procedures, including Modified ATC. As such, the revised SARR's traffic base excluded some movements that were included in WFA/Basin's original SAC presentation because these movements did not contribute sufficient revenue under the STB's revised revenue allocation methodology. These changes were entirely consistent with the goal of the SAC constraint, which is to identify an alternative stand-alone system in which plant size and the traffic base are designed to maximize the efficiencies and production economies given the rules at-hand. As such, WFA/Basin developed a SARR system using the applicable rules that showed BNSF's rates were unreasonably high.

Because WFA/Basin designed its revised SARR to maximize the impact of revenues calculated under the Modified ATC division approach, retroactive application of the Original ATC approach would be fundamentally inequitable and wipe away much of WFA/Basin's rate relief. Table 10 below compares the MMM R/VC ratios from the STB's June 2009 decision, which were calculated using revenues based on the Modified ATC division approach, and the MMM R/VC ratios if revenues were developed using Original ATC.

Table 10
MMM Revenue to Variable Cost Ratios

<u>Period</u>	<u>MMM R/VC With Modified ATC Revenues</u>	<u>MMM R/VC With Original ATC Revenues</u>
(1)	(2)	(3)
4Q04	241%	300%
2005	247%	345%
2006	230%	291%
2007	238%	312%
2008	244%	329%
2009	241%	325%
2010	245%	337%
2011	246%	338%
2012	248%	340%
2013	250%	345%
2014	255%	358%
2015	268%	399%
2016	269%	399%
2017	265%	383%
2018	262%	368%
2019	261%	362%
2020	261%	358%
2021	260%	346%
2022	261%	347%
2023	260%	341%
1Q-3Q2024	258%	325%

As shown in Table 10 above, moving from the Modified ATC revenue division approach to the Original ATC approach results in a significant and punitive escalation in MMM R/VC ratios.

The STB determined in its 2007 WFA/Basin decision that it would have been fundamentally unfair to retroactively change SARR revenue allocation methodologies because it

could have, and eventually did, affect the basic design of the SAC case.⁵³ The STB noted that a SARR designed under one set of revenue assumptions may be fundamentally different than a SARR developed under a different set of revenue assumptions.

The same issue holds here if the STB were to switch from Modified ATC back to its Original ATC approach. When designing its revised SARR system after the STB's 2007 decision, WFA/Basin did not just look at removing the lowest rated traffic from its prior traffic group, but rather performed a detailed analysis to determine what traffic would provide the greatest revenues at the lowest relative costs given the Modified ATC methodology. Just such an analysis is called for by the *Coal Rate Guidelines*, which provides parties broad flexibility to develop the least costly, most efficient plant.⁵⁴

Moreover, the STB cannot simply assume that WFA/Basin would have selected the same traffic group included in the 2009 decision had WFA/Basin used either Original or Modified ATC. The Modified ATC and Original ATC are two different approaches that produce two different results. For example, I performed an analysis that ranked the movements from the STB's 2007 decision on the basis of SARR revenue per ton under the Original ATC methodology and under the Modified ATC methodology. The analysis, which is shown in Exhibit No. 4, demonstrates that while the rankings of a few movements did not change due to the switch from Modified ATC to Original ATC, the vast majority of the movements' rankings changed because of the switch in revenue division methodologies, with one movement falling 24 positions between the rankings. Such wholesale changes would likely force WFA/Basin to redesign its SARR once again if the STB were to make another change to the revenue division process.

⁵³ *WFA/Basin 2007* at 20.

⁵⁴ *Coal Rate Guidelines* at 543 "The plant should be designed to minimize construction (or acquisition) and operating costs and/or maximizes the carriage of profitable traffic."

Shippers in SAC cases intend to design SARRs that maximize revenues while minimizing costs given the rules of the regulatory scheme. It would be fundamentally unfair to retroactively change the rules again, nor should WFA have to go back to the drawing board for a third time to design a SARR that maximizes revenues and minimizes costs using yet another cross-over traffic divisions methodology.

STATEMENT OF QUALIFICATIONS

My name is Thomas D. Crowley. I am an economist and President of the economic consulting firm of L. E. Peabody & Associates, Inc. The firm's offices are located at 1501 Duke Street, Suite 200, Alexandria, Virginia 22314, 760 E. Pusch View Lane, Suite 150, Tucson, Arizona 85737 and 21 Founders Way, Queensbury, New York 12804.

I am a graduate of the University of Maine from which I obtained a Bachelor of Science degree in Economics. I have also taken graduate courses in transportation at George Washington University in Washington, D.C. I spent three years in the United States Army and since February 1971 have been employed by L. E. Peabody & Associates, Inc.

I am a member of the American Economic Association, the Transportation Research Forum, and the American Railway Engineering and Maintenance-of-Way Association.

The firm of L. E. Peabody & Associates, Inc. specializes in analyzing matters related to the rail transportation of coal. As a result of my extensive economic consulting practice since 1971 and my participating in maximum-rate, rail merger, service disputes and rule-making proceedings before various government and private governing bodies, I have become thoroughly familiar with the rail carriers that move coal over the major coal routes in the United States. This familiarity extends to subjects of railroad service, costs and profitability, railroad capacity, railroad traffic prioritization and the structure and operation of the various contracts and tariffs that historically have governed the movement of coal by rail.

As an economic consultant, I have organized and directed economic studies and prepared reports for railroads, freight forwarders and other carriers, for shippers, for associations and for state governments and other public bodies dealing with transportation and related economic

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problems. Examples of studies I have participated in include organizing and directing traffic, operational and cost analyses in connection with multiple car movements, unit train operations for coal and other commodities, freight forwarder facilities, TOFC/COFC rail facilities, divisions of through rail rates, operating commuter passenger service, and other studies dealing with markets and the transportation by different modes of various commodities from both eastern and western origins to various destinations in the United States. The nature of these studies enabled me to become familiar with the operating practices and accounting procedures utilized by railroads in the normal course of business.

Additionally, I have inspected and studied both railroad terminal and line-haul facilities used in handling various commodities, and in particular unit train coal movements from coal mine origins in the Powder River Basin and in Colorado to various utility destinations in the eastern, mid-western and western portions of the United States and from the Eastern coal fields to various destinations in the mid-atlantic, northeastern, southeastern and mid-western portions of the United States. These operational reviews and studies were used as a basis for the determination of the traffic and operating characteristics for specific movements of coal and numerous other commodities handled by rail.

I have frequently been called upon to develop and coordinate economic and operational studies relative to the acquisition of coal and the rail transportation of coal on behalf of electric utility companies. My responsibilities in these undertakings included the analyses of rail routes, rail operations and an assessment of the relative efficiency and costs of railroad operations over those routes. I have also analyzed and made recommendations regarding the acquisition of

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railcars according to the specific needs of various coal shippers. The results of these analyses have been employed in order to assist shippers in the development and negotiation of rail transportation contracts which optimize operational efficiency and cost effectiveness.

Moreover, I have developed numerous variable cost calculations utilizing the various formulas employed by the Surface Transportation Board (“STB”) and its predecessor the Interstate Commerce Commission (“ICC”) for the development of variable costs for common carriers, with particular emphasis on the basis and use of the Uniform Railroad Costing System (“URCS”) and its predecessor, Rail Form A. I have utilized URCS/Rail form A costing principles since the beginning of my career with L. E. Peabody & Associates Inc. in 1971.

I have frequently presented both oral and written testimony before the ICC, STB, Federal Energy Regulatory Commission, Railroad Accounting Principles Board, Postal Rate Commission and numerous state regulatory commissions, federal courts and state courts. This testimony was generally related to the development of variable cost of service calculations, rail traffic and operating patterns, fuel supply economics, contract interpretations, economic principles concerning the maximum level of rates, implementation of maximum rate principles, and calculation of reparations or damages, including interest. I presented testimony before the Congress of the United States, Committee on Transportation and Infrastructure on the status of rail competition in the western United States. I have also presented expert testimony in a number of court and arbitration proceedings concerning the level of rates, rate adjustment procedures, service, capacity, costing, rail operating procedures and other economic components of specific contracts.

STATEMENT OF QUALIFICATIONS

Since the implementation of the *Staggers Rail Act of 1980*, which clarified that rail carriers could enter into transportation contracts with shippers, I have been actively involved in negotiating transportation contracts on behalf of coal shippers. Specifically, I have advised utilities concerning coal transportation rates based on market conditions and carrier competition, movement specific service commitments, specific cost-based rate adjustment provisions, contract reopeners that recognize changes in productivity and cost-based ancillary charges.

I have been actively engaged in negotiating coal supply contracts for various users throughout the United States. In addition, I have analyzed the economic impact of buying out, brokering, and modifying existing coal supply agreements. My coal supply assignments have encompassed analyzing alternative coals to determine the impact on the delivered price of operating and maintenance costs, unloading costs, shrinkage factor and by-product savings.

I have developed different economic analyses regarding rail transportation matters for over sixty (60) electric utility companies located in all parts of the United States, and for major associations, including American Paper Institute, American Petroleum Institute, Chemical Manufacturers Association, Coal Exporters Association, Edison Electric Institute, Mail Order Association of America, National Coal Association, National Industrial Transportation League, North America Freight Car Association, the Fertilizer Institute and Western Coal Traffic League. In addition, I have assisted numerous government agencies, major industries and major railroad companies in solving various transportation-related problems.

In the two Western rail mergers that resulted in the creation of the present BNSF Railway Company and Union Pacific Railroad Company and in the acquisition of Conrail by Norfolk

STATEMENT OF QUALIFICATIONS

Southern Railway Company and CSX Transportation, Inc., I reviewed the railroads' applications including their supporting traffic, cost and operating data and provided detailed evidence supporting requests for conditions designed to maintain the competitive rail environment that existed before the proposed mergers and acquisition. In these proceedings, I represented shipper interests, including plastic, chemical, coal, paper and steel shippers.

I have participated in various proceedings involved with the division of through rail rates. For example, I participated in ICC Docket No. 35585, *Akron, Canton & Youngstown Railroad Company, et al. v. Aberdeen and Rockfish Railroad Company, et al.* which was a complaint filed by the northern and mid-western rail lines to change the primary north-south divisions. I was personally involved in all traffic, operating and cost aspects of this proceeding on behalf of the northern and mid-western rail lines. I was the lead witness on behalf of the Long Island Rail Road in ICC Docket No. 36874, *Notice of Intent to File Division Complaint by the Long Island Rail Road Company.*

EXHIBIT NO. 2
REDACTED

EXHIBIT NO. 3
REDACTED

EXHIBIT NO. 4
REDACTED

