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May 1, 2006

BY HAND DELIVERY

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

Re: Ex Parte No. 657 (Sub-No. 1), Major Issues in Rail Rate Cases

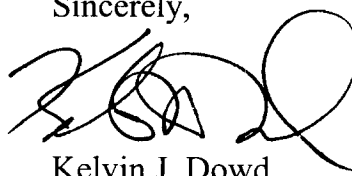
Dear Secretary Williams:

Enclosed for filing in the referenced proceedings please find an original and ten copies of the Joint Opening Comments of Western Coal Traffic League, Concerned Captive Shippers, Western Fuels Association, Inc., Edison Electric Institute, National Rural Electric Cooperative Association and American Public Power Association, along with a computer disk which contains the filing.

An additional copy of the Joint Opening Comments also is enclosed.
Kindly indicate receipt and filing by time-stamping this copy and returning it to the bearer of this letter.

Thank you for your attention to this matter.

Sincerely,



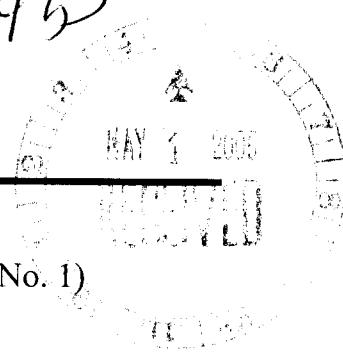
Kelvin J. Dowd

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BEFORE THE
SURFACE TRANSPORTATION BOARD

MAJOR ISSUES IN RAIL RATE CASES) Ex Parte No. 657 (Sub-No. 1)
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JOINT OPENING COMMENTS
OF
WESTERN COAL TRAFFIC LEAGUE
CONCERNED CAPTIVE COAL SHIPPERS
WESTERN FUELS ASSOCIATION, INC.
EDISON ELECTRIC INSTITUTE
NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION
AND
AMERICAN PUBLIC POWER ASSOCIATION

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Dated: May 1, 2006

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**BEFORE THE
SURFACE TRANSPORTATION BOARD**

MAJOR ISSUES IN RAIL RATE CASES

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Ex Parte No. 657 (Sub-No. 1)

**JOINT OPENING COMMENTS
OF
WESTERN COAL TRAFFIC LEAGUE
CONCERNED CAPTIVE COAL SHIPPERS
WESTERN FUELS ASSOCIATION, INC.
EDISON ELECTRIC INSTITUTE
NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION
AND
AMERICAN PUBLIC POWER ASSOCIATION**

Now come the Western Coal Traffic League, the Concerned Captive Coal Shippers, Western Fuels Association, Inc., the Edison Electric Institute, the National Rural Electric Cooperative Association and the American Public Power Association (collectively, "Coal Shippers"), and submit these Joint Opening Comments in response to the Decision served by the Board on February 27, 2006 in the captioned docket ("*Decision*") and certain embraced cases.¹

¹ The *Decision* also embraced four separate, pending dockets in which individual coal shippers are prosecuting complaints against particular common carrier rail rates. The Complainants in each of these cases also are members of Coal Shippers. These Joint Comments are submitted on behalf of Coal Shippers in the general docket opened by the *Decision*. Any submissions by individual Coal Shippers members in the embraced dockets will be made separately by these parties.

PRELIMINARY STATEMENT

The Coal Shippers come to this proceeding neither willingly nor with optimism. As will be explained in detail in these Comments, the Coal Shippers are deeply concerned that, on balance, the proposals put forward in the *Decision*, if adopted, would further erode the effective protections from rail rate abuse by market dominant carriers that captive coal shippers were promised in the *Coal Rate Guidelines*².

At the outset, it bears repeating that the Coal Shippers and every other participating railroad service consumer group were opposed to the initiation of this rulemaking proceeding when the Board first raised the possibility of a rulemaking proceeding in the Spring of 2005.³ Then as now, the Coal Shippers' expressed view was that the issues of concern with Board administration of the *Guidelines*, such as those identified in the *Decision*, all were products of determinations made in individual cases, and that consistent with the Board's established policy since 1985, methodological reforms to address those issues can, and likewise should, be considered and adopted in such cases, including the three pending proceedings whose records already have closed.⁴

² *Coal Rate Guidelines, Nationwide*, 1 I.C.C. 2d 520 (1985), *aff'd sub nom.*, *Consolidated Rail Corp. v. United States*, 812 F. 2d 1444 (3rd Cir. 1987) ("*Guidelines*").

³ Ex Parte No. 657, *Rail Rate Challenges Under the Stand Alone Cost Methodology*, Decision served February 16, 2005.

⁴ Docket No. 41191, *West Texas Utilities Co. v. BNSF Rwy. Co.*; Docket No. 41191 (Sub-No. 1), *AEP Texas North Co. v. BNSF Rwy. Co.* ("*AEP Texas*"); Docket No. 42088, *Western Fuels Assoc., Inc. & Basin Elec. Power Coop. v. BNSF Rwy. Co.* ("*Western Fuels*").

The Board's turning a deaf ear to the Coal Shippers' and other consumers' position on the question of a rulemaking is particularly disconcerting in light of the fact that it is the shippers who have suffered as a result of the implementation policies to be considered in this proceeding. While the railroad parties no doubt will raise complaints about the *status quo*, a fair reading very likely will show that they object to having to defend their rate practices at all – not that they are unhappy with the outcomes of recent cases.

The Coal Shippers' trepidation over the conduct and apparent direction of this proceeding is not solely due to the fact that rail shippers uniformly opposed this rulemaking when it first was suggested. The five-year historical run-up to the February 27, 2006 *Decision* offers deeper causes for concern.

On June 29, 2001, BNSF Railway Company and the Union Pacific Railroad Company jointly petitioned the Board for consolidation of four then-pending coal rate proceedings,⁵ for the purpose of “addressing certain methodological disputes related to the implementation of the stand-alone cost (“SAC”) test that are common to these cases.”⁶ The issues that BNSF and UP urged the Board to take up in a rulemaking-type proceeding

⁵ The proceedings were Docket No. 42056, *Texas Municipal Power Agency v. The Burlington N. and Santa Fe Rwy. Co.*; Docket No. 42057, *Public Serv. Co. of Colo. d/b/a/ Xcel Energy v. The Burlington N. and Santa Fe Rwy. Co.*; Docket No. 42058 *Arizona Elec. Power Coop., Inc. v. The Burlington N. and Santa Fe Rwy. Co. and Union Pac. R.R. Co.*; and Docket No. 42054, *PPL Montana, LLC v. The Burlington N. and Santa Fe Rwy. Co.*

⁶ Defendants' Joint Motion for Limited Consolidation (“Joint Motion”), at 1.

ring familiar in the context of the current proceeding: the length of the DCF analysis and the impact on stand-alone volume and revenue forecasts; the scrutiny of shipper-designed SARRs for improper “cross-subsidies”; the division of revenues from cross-over traffic; and the pattern of capital recovery and its impact on the measure of rate relief. *See Joint Motion* at 4-5.

While the arguments advanced by BNSF and UP counsel purported to address these issues in a neutral fashion, the *Joint Motion* nonetheless acknowledged that the unifying theme behind them was the railroads’ position that the Board’s SAC procedures should be altered to generally reduce the revenues available to SARRs, and thereby increase SAC-derived maximum coal rate levels. *Id.* at 3, 10-11, 18-21, 25-26, 35-36. The goal of changing the rules to enable the railroads to justify higher rates on captive coal traffic was stated even more forcefully by one of the carriers’ consultants:

[I]f the railroads are to have any hope of . . . contributions [to sunk costs] they must come from the portions of the network where competition is not so immediate and powerful. It is no exaggeration to say that *preclusion or even substantial limitation of such contributions is equivalent to a decision to condemn the rail network to deterioration and much of it to total disappearance.*

Joint Motion, V.S. Baumol at 8 (emphasis in original).

This first attempt at convening a general, public proceeding to consider changes in the methodological rules that would be used to decide active, pending cases was rejected by the Board. In a unanimous decision, then-Chairman Morgan and

Commissioners Clyburn and Burkes reinforced what had been consistent agency policy since the adoption of the *Guidelines*:

We have carefully considered whether the processing of pending and future cases would be aided by breaking out and separately examining some or all of the issues identified by the railroads in a general rulemaking-type proceeding. While the railroads have raised significant issues, some of which are not yet fully resolved, about how we should apply SAC in our maximum rate reasonableness adjudications, we conclude that it is preferable to continue our general policy of addressing these types of issues as they arise in individual adjudications.

Docket No. 42054, et al. Decision served November 27, 2001 at 5.

While the railroads' *Joint Motion* was not granted, their expressed desires regarding the outcome of pending and future coal rate litigation apparently fell on receptive ears.

Between January 1, 2002 and the initiation of this proceeding, the Board rendered final decisions in eight captive coal rate cases, that is, proceedings in which the railroad defendant's market dominance over the traffic at issue was clear or uncontested. Each of these cases involved challenges to unilaterally imposed increases in pre-existing rates, some of which approached 50%. Of the eight complaints, three were dismissed entirely without a final determination as to rate reasonableness even having been made,⁷

⁷ Docket No. 42054, *PPL Montana, LLC v. BNSF Rwy. Co.*, Decision served August 20, 2002; ("*PPL Montana*"), Docket No. 42058, *Arizona Elec. Power Coop. v. BNSF Rwy. Co., et al.*, Decision served March 15, 2005; Docket No. 42071, *Otter Tail Power Co. v. BNSF Rwy. Co.*, Decision served January 27, 2006 ("*Otter Tail*").

and three resulted in rulings allowing the challenged rate increases in full.⁸ While two cases produced rulings requiring reductions in the level of the rate increases, one shipper saw reductions of only 1-3%,⁹ and the other achieved a reduction that was less than half of what its evidence supported.¹⁰

Coincident with this nearly unbroken string of railroad victories over their captive coal customers before the Board, the two major western carriers, BNSF and UP embarked on new, highly-publicized coal pricing programs. These new strategies were characterized by still higher rates, a refusal to negotiate or enter into rail transportation contracts, "fuel surcharges," and a return to tariff-style, "public pricing" platforms as the vehicle to establish coal rates. While the legitimacy of BNSF and UP's actions in this regard have been called into question in various fora, their programs remain in effect today. The two major eastern carriers, Norfolk Southern and CSXT, also have been steadily increasing rates for coal transportation, and imposing similar fuel surcharges.

⁸ Docket No. 42096, *Duke Energy Corp. v. Norfolk Southern Rwy. Co.*, Decision served November 6, 2003 ("*Duke/NS*") (40-50% rate increases approved); Docket No. 42072, *Carolina Power & Light Co. v. Norfolk Southern Rwy. Co.*, Decision served October 20, 2004 ("*CP&L*"); Docket No. 42070, *Duke Energy Corp. v. CSX Transp., Inc.*, Decision served February 4, 2004 ("*Duke/CSXT*") (40-50% rate increases approved).

⁹ Docket No. 42056, *Texas Municipal Power Agency v. BNSF Rwy. Co.*, Decision served March 24, 2003 ("*TMPA*").

¹⁰ Docket No. 42057, *Public Serv. Co. of Colo. d/b/a Xcel Energy v. BNSF Rwy. Co.*, Decision served June 8, 2004 ("*Xcel*").

It was against this backdrop that the matter of a general rulemaking to consider methodological changes in the Board's SAC constraint was raised again, not by the railroads this time, but by the Board itself.¹¹ As in 2001, however, the message carried by the railroads' representatives in response to the Board's invitation was singular in purpose: change the rules to allow higher rates on captive coal traffic. For example:

- “By restricting UP's ability to price according to market demand, the SAC methodology as currently applied presents two obstacles to meeting shipper demand for service. It deprives UP of revenue by constraining rates directly, through prescription, and indirectly, by creating litigation risks (and costs) that discourage UP from engaging in differential pricing that would fully reflect shippers' relative demand elasticities.” *Comments of Union Pacific Railroad Company*, April 20, 2005 at 7.
- “Increasing demand means that rates should be going up . . . BNSF does not believe that these shippers are entitled to any relief” *Statement of John P. Lanigan*, BNSF, April 26, 2005.
- “Railroads have a pressing need for additional revenue and it is fair to ask for our coal customers to contribute more We believe that it's an urban myth that coal shippers are paying too much We believe that the application of the SAC methodology, as it is currently being applied, however, is interfering with our ability to raise rates for coal traffic to market levels.” *Transcript of Proceedings*, April 26, 2005 at 56-57 (statement of UP counsel, L.A. Rinn).

¹¹ *Ex Parte No. 657, supra*, Decision served February 16, 2005.

The Board took no formal action in the immediate wake of the *Ex Parte No. 657* hearings, an outcome consistent with the expressed views of the entire participating shipper community. Later in the year, however, the Board marked the twenty-fifth anniversary of the *Staggers Rail Act of 1980* with an open forum to solicit the views of the agency's constituencies regarding the state of rail regulation. On cue, railroad representatives reprised their chorus for rules changes to sanction higher rates on captive traffic:

To keep up with demand, more revenues – and higher returns – will be needed to finance the investments necessary to address growth. . . . Any government action that reduces rail revenues will reduce future investment levels. Any effort to curtail rail revenues in one market will send errant signals to the marketplace

Statement of James R. Young, President and COO, Union Pacific Railroad, October 12, 2005 at 8.

The railroads' fundamental position, understood by all, aptly was summarized by the Board's own counsel during appellate proceedings arising out of the *Xcel* case. Responding to BNSF's challenge to the shipper's inclusion of cross-over traffic in its rate presentation before the agency, Board counsel noted "that it is not just the agency's use of cross-over traffic that [BNSF] finds offensive, but any application of the SAC test that results in relief to captive shippers."¹²

¹² *BNSF Rwy. Co. v. S.T.B. and United States*, D.C. Cir. 05-1030, Joint Brief of Respondents, July 21, 2005 at 36.

The historical context in which this proceeding is taking place, then, is well-defined. For at least the past five years, the major coal-hauling railroads have sought changes in the *Coal Rate Guidelines*' SAC constraint which effectively would put meaningful rate relief beyond the reach of all shippers, and accomplish a *de facto* total deregulation of captive coal rates. In a general rulemaking, issues and theories can be debated in the abstract, without the backdrop of an actual record to show the real world impact of a particular proposal or rule modification. The Coal Shippers are concerned that through some of the specific proposals outlined in the *Decision*, the Board has offered the railroads an opportunity to achieve their long-sought and oft-stated goal.

In these Comments, the Coal Shippers address the specific proposals described in the *Decision*, as well as one additional, extremely consequential issue that has featured prominently in the Board's most recent coal rulings: the proper approach to so-called "internal cross-subsidy" question.

IDENTITY AND INTEREST

The Western Coal Traffic League ("WCTL") is a voluntary association of entities responsible for the purchase and transportation of coal mined from sources west of the Mississippi River. WCTL members include the following 18 entities: Ameren Energy Fuels and Services; Arizona Electric Power Cooperative, Inc.; Arizona Public Service; CLECO Corporation; City of Austin, Texas; CPS Energy; Kansas City Power & Light Company; Lower Colorado River Authority; MidAmerican Energy Company; Minnesota

Power; Nebraska Public Power District; Omaha Public Power District; Texas Genco, LP; Texas Municipal Power Agency; Western Farmers Electric Cooperative; Western Fuels Association, Inc.; Wisconsin Public Service Corporation; and Xcel Energy. WCTL members collectively arrange and pay for the transportation of over 140 million tons of coal annually, nearly all of which moves by rail. WCTL has a strong interest in the subject matter of this proceeding. It has been an active participant before the Board and the ICC in every proceeding of significance that has addressed the procedural or substantive rules applied to adjudicate complaints challenging the reasonableness of rates on traffic subject to railroad market dominance. Also, several WCTL members are and have been complainants in cases brought under the *Coal Rate Guidelines*.

The Concerned Captive Coal Shippers include the following entities: American Electric Power Service Corporation; Dairyland Power Cooperative; Duke Energy Corporation; Grand River Dam Authority; Intermountain Power Project; Lafayette Utilities System; Platte River Power Authority; Progress Energy, Inc.; Seminole Electric Cooperative, Inc.; South Carolina Public Service Authority (Santee Cooper); and South Mississippi Electric Power Association. All of these entities consume coal to generate electricity, and each relies upon market dominant rail carriers to transport that coal. A further description of each of the Concerned Captive Coal Shippers is appended hereto at Exhibit A. Several of the Concerned Captive Coal Shippers have been involved in maximum rate litigation before the STB and/or ICC under the *Coal Rate Guidelines*, and each, by virtue of its circumstances, has a strong interest in the subject matter of this

matter of this proceeding. The group also participated in *Ex Parte No. 657*, and in the Board's 2005 proceeding commemorating the 25th anniversary of the *Staggers Rail Act*.

Western Fuels Association, Inc. ("WFA") is a non-profit fuel supply cooperative corporation headquartered in Denver, Colorado. WFA members consist of 19 consumer-owned utilities, including rural electric generation and transmission cooperatives, municipal utilities and other public bodies. WFA exists to assist its members in obtaining coal, and coal transportation, at reasonable delivered prices. One of WFA's members, is Basin Electric Power Cooperative, Inc. ("Basin Electric"), a regional consumer-owned wholesale electric generation and transmission cooperative, headquartered in Bismark, North Dakota. Basin Electric, together with the five other cooperatives and other public power providers constituting the Missouri Basin Power Project,¹³ own the Laramie River Station ("LRS"). WFA, together with Basin Electric, is a complainant in the *Western Fuels* case. This case involves a challenge to BNSF's common carrier coal transportation rates to LRS. WFA, Basin and the Missouri Basin Power Project participants have a very strong interest in the subject matter of this proceeding.

The Edison Electric Institute ("EEI") is the association of U.S. investor-owned electric utilities and international affiliates and associates worldwide. EEI's U.S.

¹³ The other five participants in the Project are: Heartland Consumers Power District, Lincoln Electric System, Tri-State Generation and Transmission Association, Inc., The Western Minnesota Municipal Power Agency, and The Wyoming Municipal Power Agency.

members serve 97 percent of all customers served by the shareholder segment of the U.S. electric utility industry and 71 percent of all electricity produced by U.S. electric generators. EEI frequently represents its U.S. members before state and federal agencies, courts, and legislators in matters of common concern, including before the STB. EEI members ship by rail hundreds of millions of tons of coal annually to generate electricity. EEI has participated in virtually every general interest proceeding before the Board and its predecessor in which the rules governing the resolution of disputes over the reasonableness of rail rates on coal have been an issue. EEI members also have been complainants in numerous coal rate reasonableness cases before the Board and the ICC, and have a strong interest in the subject matter of this proceeding.

National Rural Electric Cooperative Association ("NRECA") is the not-for-profit national service organization representing approximately 930 not-for-profit, member-owned rural electric cooperatives, encompassing both distribution cooperatives that provide retail electric service to over 37 million consumer-owners in 47 states, and generation and transmission cooperatives that supply wholesale power to their distribution cooperative owner-members. NRECA also has a strong interest in the subject matter of this proceeding. Many NRECA members receive coal transportation service from market dominant rail carriers or are otherwise dependent on electricity generated at plants that are served by market dominant rail carriers. Also, many of its members have been involved in coal maximum rate litigation at the STB and ICC.

The American Public Power Association (“APPA”) is the national service organization representing the interests of the nation’s approximately two thousand (2,000) locally owned, locally controlled, not-for-profit electric utilities and entities of government, such as municipalities, counties, public utility districts and an occasional state government, throughout the United States. APPA members also ship by rail millions of tons of coal annually to generate electricity, its members have been and are complainants in coal rate reasonableness cases before the Board and the ICC, and it has a strong interest in the subject matter of this proceeding.

COMMENTS ON THE BOARD’S PROPOSALS

I. MAXIMUM RATE DETERMINATIONS

The Board’s first proposal is to eliminate the use of the so-called “percent reduction” method of allocating surplus SARR revenues over total SAC among the members of the SARR traffic group (and, thus, the measure of rate relief), in favor of two alternative methodologies for the allocation of total SAC. The Coal Shippers’ position is that while these methodologies represent significant improvements over the flawed percent reduction rule, they should not be adopted as the *exclusive* acceptable methods of determining maximum reasonable rates.

A. Background

When the Board’s predecessor first promulgated the *Coal Rate Guidelines*, it declined to adopt a specific formula for allocating SAC among the members of a particular

traffic group. Instead, the agency ruled that allocations were “best left for a case-by-case resolution . . . on the basis of Ramsey principles.” *Id.*, 1 I.C.C. 2d at 546. Recognizing that the specific measure of a key component of Ramsey-based pricing – relative demand elasticities – would be difficult in the context of coal rate litigation, the agency opted for a practical solution:

[w]here information on demand elasticity is required . . . we will consider qualitative (rather than necessarily quantitative) evidence on the relative demand elasticity of specific movements and/or commodities.

Id. at 527.

We will consider evidence that particular [SARR] shippers face similar market conditions and therefore have similar demand elasticity.

Id. at 533.

In the earliest cases decided under the *Guidelines*, the allocation methodology used by the agency first assigned each SARR customer its respective variable service cost, then allocated the remaining, unattributable costs among the shippers “pro rata, on the basis of usage.” *Omaha Pub. Power Dist. v. Burlington N. R.R. Co.*, 3 I.C.C. 2d 123, 136 (1986) (“*Omaha Pub. Power*”). *See also*, *Arkansas Power & Light Co. v. Burlington N. R.R. Co.*, 3 I.C.C. 2d 757, 774 (1987) (“*Arkansas Power & Light*”). In these cases, the Board’s predecessor agreed that shippers moving the same commodity (coal) from the same general origins (the Powder River Basin) in similar service (unit trains) to the same destinations (coal-fired generation stations), who likewise had access to only one rail transporter, showed sufficiently similar demand elasticities on

a qualitative basis to justify the approved allocation approach. *Omaha Pub. Power*, 3 I.C.C. 2d at 139-40.

Starting in 1990,¹⁴ the agency converted to the percent reduction method, whereunder challenged rates are reduced for each year of the study period by the same percentage by which total SARR revenues exceed total SAC for such year. As the Board noted in its *Decision*,¹⁵ “the underlying rationale . . . has been that allocating the SAC costs among the traffic group in proportion to the existing rate structure would implicitly reflect the varying demand elasticities within the SAC traffic group.”

B. The Flaws in The Percent Reduction Method

The *Decision* references a significant flaw in the percent reduction method which has been pointed out repeatedly by complainants in recent coal rate proceedings: because the starting point for the formula is the challenged rate and the defendant has the statutory right to set the rate,¹⁶ the railroad can “manipulate the outcome” of the analysis and ensure a favorable result solely by virtue of its pricing decision.¹⁷ This manipulation issue is a key flaw in the percent reduction method. While its remedy is imperative, so

¹⁴ *Coal Trading Corp. v. Baltimore & Ohio R.R.*, 6 I.C.C. 2d 361, 380 (1990).

¹⁵ *Decision* at 7.

¹⁶ *See* 49 U.S.C. § 10701(c).

¹⁷ *Decision* at 8, *citing CP&L*, *Decision* served December 23, 2003 at 31.

too are other defects which also must inform an evaluation of the Board's proposed alternatives.

First, the percentage reduction formula violates Ramsey principles by focusing on the *prices* paid by the SARR's customers, rather than the mark-up of price over marginal cost, as the presumed indicator of demand elasticity. Under true Ramsey principles, price changes would be disproportionate in response to demand elasticities, not uniform in percentage across the customer group. The essence of true Ramsey pricing is that it sets rates differentially across markets to allow the recovery of unattributable costs, while deviating as little as possible from optimal (that is, marginal cost) pricing. It does this by setting prices such that the *markup over marginal cost* – not price – is inversely related to elasticity of demand. By focusing solely on relative, absolute prices without regard to marginal costs, the percent reduction method distorts Ramsey results.

Second, by keying on the defendant's rate structure, the percent reduction method violates the *Guidelines*' directive that the complainant be permitted to design the most efficient, lowest cost alternative to the incumbent. *Guidelines*, 1 I.C.C. 2d at 524. When the proponent of a SARR demonstrates that its revenues exceed SAC, presumptively the SARR is revenue adequate; that is, it generates a rate of return on investment equal to its cost of capital. In this realm, the *Guidelines* clearly mandate that a railroad's pricing patterns must shift from that which characterizes other, revenue inadequate railroads:

captive shippers should not be required to continue to pay differentially higher rates than other shippers when some or all of the differential is no longer necessary to ensure a

financially sound carrier capable of meeting its current and future service needs.

Id. 1 I.C.C. 2d at 535-36.

By continuing to maintain a differential pricing profile attributable to a revenue inadequate incumbent for the revenue adequate SARR, the percent reduction method offends this essential principle of the *Guidelines*. Wholly apart from the manipulation risk identified by the Board in the *Decision*, the formula's erroneous reliance on price as an indicator of demand elasticity, and its inconsistency with the rule against unnecessary differential pricing following the achievement of revenue adequacy, make it unsuitable for further use as a SAC/rate relief allocation vehicle.

C. The Board's New Proposals

In its *Decision*, the Board offers two, reasonably similar SAC allocation methodologies which it proposes to use in pending and future cases in lieu of the percent reduction method. *Id.* at 9-16. The Coal Shippers agree that the Board's alternatives are superior to the percent reduction formula in several respects, and represent steps in the right direction. However, the suggested approaches themselves have shortcomings, and they should not be adopted as the *exclusive* methods for SAC allocation in major coal rate cases. The Board also should consider alternative methodologies that may be developed and proposed in individual proceedings, including in particular the formulas advanced in *Western Fuels* and *AEP Texas*.

1. The Maximum Contribution Methodology (MCM)

The Board's first proposed formula – MCM – determines maximum SAC rates by allocating each year's total SAC among all the members of the SARR traffic group on the basis of each shipper's ton-miles, with the proviso that no shipper would bear an allocation greater than its existing rate. If a given shipper's allocation (on a ton-mile basis) is greater than its current rate, the excess is re-allocated among the remaining shippers. This process is repeated until the total SAC has been allocated and "no movement in the traffic group is assigned a higher share of the SAC costs than the SARR could profitably levy on that movement in the marketplace." *Decision* at 9.

According to the Board, MCM enjoys three advantages over percent reduction: it eliminates the potential for manipulating the outcome of a rate analysis; it respects the principle that a railroad should maximize revenues from competitive traffic before charging differentially higher rates to captive shippers; and it would facilitate negotiated settlements by allowing parties to predict the outcome of rate litigation. *Decision* at 11-12. The Coal Shippers submit that while MCM is *superior* to percent reduction in each of these areas, it would not be as completely effective as the Board suggests.

As Professor George Borts explains in his accompanying testimony, so long as the rate set and charged by the railroad plays a necessary role in the SAC allocation/rate relief process, the risk that the carrier could manipulate the outcome of the rate analysis will be present. V.S. Borts, at 6-8. While MCM goes a long way toward

ameliorating this risk, it does not eliminate it entirely (*id.*). For example, using the cost and revenue numbers set out in the Board's Table 3 (*Decision* at 11), if the "Complainant" had been paying \$15.00 per ton under an expiring contract, the railroad still could engineer a post-litigation rate increase of \$1.44 per ton by setting a post-contract rate of \$25.00. Similarly, because the railroad still cannot be compelled to establish a common carrier rate until shortly before service commences,¹⁸ MCM cannot restore entirely the incentive to negotiate that evaporates under the percent reduction method.

The Board is correct that MCM shows greater fealty than percent reduction to the "Long-Cannon" mandate that carriers recover as much of their unattributable costs as demand will permit from competitive traffic, before turning to captive shippers to make up the shortfall.¹⁹ See *Decision* at 12. However, the implicit barometer of demand elasticity (and, thus, the SAC allocation limit) remains absolute price, rather than the mark-up of price over marginal cost. In this key respect, MCM is no more true to the core principle of Ramsey pricing than is percent reduction.²⁰

¹⁸ See, e.g., *Burlington N. R.R. Co. v. S.T.B.*, 75 F. 3d 685 (D.C. Cir. 1996).

¹⁹ See 49 U.S.C. § 10701(d)(2).

²⁰ Percent reduction allocates SAC from the "top down," reducing rates on the SARR traffic on an equal percentage basis from the levels charged by the incumbent until total revenues equal total SAC. MCM allocates SAC from the "bottom up," using the incumbent's current rates as a contribution ceiling. In both cases, marginal costs and the relative mark-ups of price over marginal cost essentially are ignored.

2. The Maximum Markup Methodology (MMM)

One characteristic of MCM is that it does not take into account differences in variable costs among the members of the SARR shipper group. As the Board acknowledges in its *Decision*, this “feature” probably makes MCM ill-suited for cases in which a SARR’s traffic group is diverse in terms of commodities, train types, and mix of long-haul and short-haul traffic. *Decision* at 13. To address this shortcoming of MCM, the Board has proposed the MMM alternative.

Under MMM, URCS-based estimates of the variable cost of every movement in the SARR traffic group will be used to calculate each movement’s maximum SAC allocation as a percentage mark-up over variable cost. No shipper would receive a SAC allocation greater than that which produces the same rate/cost ratio as the incumbent’s current rate to that shipper. To secure relief, the complainant would show that total SAC is lower than the SARR’s total revenue, and that its allocated percentage mark-up over variable cost was lower than the mark-up implied by the challenged rate. As the Board notes, “[u]nder MMM, a movement with a higher variable cost per ton would have a higher maximum contribution toward total SAC costs (sic), and vice-versa.” *Decision* at 13.

While MMM may be more complicated to apply than MCM, it nonetheless has the virtue of being somewhat truer to Ramsey principles, since the contribution limits are keyed to price mark-ups rather than absolute prices, such that those SARR customers

with the highest mark-ups would stand to receive the greatest measure of rate relief.²¹

This feature likewise should offer a stronger antidote for the manipulation problem than MCM, for the same reason.

In its *Decision*, the Board seeks comment on whether MMM – if adopted – should be expressed in terms of a revenue/cost ratio or a dollar mark-up over variable cost, and if the latter, whether it should be expressed on a car-mile or ton-mile basis. As described in detail in the accompanying Verified Statement of Thomas D. Crowley, a dollar mark-up approach tends to distort the relationships among the rates to individual members of the SARR traffic group, and as such could produce results which do not faithfully reflect their relative demand elasticities. V.S. Crowley at 4-7. Therefore, the Coal Shippers submit that if the Board does adopt MMM, it should be implemented on the basis of revenue/cost ratios.

Finally, the Board opines that it might be “inadvisable” to use MMM if adjustments to URCS system average variable costs continue to be permitted for purposes of calculating the jurisdictional threshold. *Decision* at 16. The Coal Shippers disagree. Because MMM is a comparative mark-up based allocation methodology, what matters most is not that individual movement costs are calculated with appropriate movement-

²¹ The Board implicitly assumes that all else being equal, a higher price mark-up reflects a lower elasticity of demand, a point with which the Coal Shippers would agree. Since Ramsey theory holds that inelastic demand shippers should bear a greater share of unattributable costs when those costs (and, thus, revenue need) rise, they also are entitled to greater relative rate reductions when the SARR is found to have surplus revenue over total SAC.

specific cost adjustments, but that the costs for all members of the SARR group are calculated in the same manner. Put another way, it is the relativity of the mark-ups to one another that is significant, not the actual dollar amount of each mark-up. Because the calculations serve different purposes, there is no meaningful inconsistency in using system average URCS costs to determine the SAC allocation mark-ups as a matter of administrative efficiency and practicality, while continuing to rely on movement-specific variable costs for purpose of calculating the jurisdictional threshold (and the regulated rate floor) for the issue traffic.

D. The Coal Shippers' Position

The Coal Shippers do not object to the Board's adoption of MCM and MMM as alternative replacements for the percent reduction method, and they specifically endorse the retirement of the percent reduction formula itself. Moreover, if MMM is adopted, the Board should direct that it be expressed on a revenue/cost ratio basis, as described *supra*.

While MCM and MMM are improvements over percent reduction, the Board should not adopt them as the *exclusive* methods for allocating SAC and rate relief in proceedings under the *Guidelines*.²² The Coal Shippers submit that there are at least two other maximum rate determination methodologies – which are summarized below –

²² The Board may wish to adopt MCM and MMM as presumptively valid methodologies, such that their use would not have to be supported by separate evidence and argument in each individual case.

that are superior to MCM and MMM in terms of consistency with the core principles of Ramsey pricing, and should be endorsed by the Board as valid alternatives that also may be used in individual rates cases.

In *Western Fuels*, the complainant developed and proposed a formula denominated the “reasonable allocation method” or “RAM.”²³ As proposed, RAM is a relatively simple, five-step process in which each member of the SARR traffic group is assigned its share of total variable costs, and those shippers without effective transportation competition (i.e., the demand inelastic shippers) cover the SARR’s unattributable costs (total SAC minus total variable costs). Consistent with *Omaha Pub. Power* and *Arkansas Power & Light*, RAM relies on qualitative evidence of similar demand elasticities among the captive shippers in the SARR traffic group to allocate unattributable costs among those shippers on a pro-rata basis. See *Omaha Pub. Power*, 3 I.C.C. 2d at 139-40; *Arkansas Power & Light*, 3 I.C.C. 2d at 774.

RAM cures the flaws in the percent reduction method by making the railroad’s choice of the rate for the issue traffic irrelevant to the determination of a maximum reasonable rate, and by distributing unattributable SAC on the basis of qualitatively-observed demand elasticities, rather than absolute price (which cannot be a barometer of demand elasticity unless costs also are calculated and margins compared).

²³ See Docket No. 42088, Complainant’s Opening Narrative (Public Version), April 19, 2005 at III-H 13 to 33.

Likewise, it is fully consistent with the Ramsey principles originally invoked in the *Guidelines*, where SAC distributions follow demand elasticities measured through a multi-factored qualitative analysis.²⁴

Another valid, superior alternative to percent reduction was presented by the complainant in *AEP Texas*. The “generalized percentage reduction methodology” or “GPRM” distributes excess SARR revenues over total SAC among the members of a traffic group according to their relative demand elasticities as reflected in their price mark-ups over average marginal costs.²⁵ Thus, proportionally higher relief is awarded to those group members with higher contribution mark-ups, the same shippers that would bear a proportionally greater burden if revenues were inadequate.

As with the RAM approach, GPRM solves the manipulation issue by divorcing the starting price from the determination of the end result, since its focus properly is on mark-ups over marginal cost. Indeed, GPRM also discourages a complainant from filling its SARR with high-margin traffic; under GPRM that traffic, not the complainant’s traffic, would realize the greatest measure of rate relief. And by allocating SAC and associated rate reductions based on relative mark-ups over marginal

²⁴ A second methodology set out in *Western Fuels*, the Reduced Markup Method, also is superior to percent reduction.

²⁵ See Docket No. 41191 (Sub-No. 1), Brief of Complainant, June 9, 2005 at 19-22.

cost, GPRM is equally in line with the “second best pricing” directed by Ramsey principles.

The *Guidelines* call for the issue of SAC allocation to be resolved on a “case-by-case” basis consistent with Ramsey principles. 1 I.C.C. 2d at 546. The Coal Shippers concur in this fundamental position. The percent reduction method is fatally defective, and the Board is right to replace it. MCM and MMM represent steps in the right direction, and the Coal Shippers are not opposed to their adoption in this proceeding. However, they should not become the *sole* acceptable methods for determining coal rate relief. In its final decision, the Board should clarify that parties to individual cases remain free to prepare and support sound, alternative methods that are consistent with Ramsey principles, and should specifically confirm that RAM and GPRM meet those criteria.

II. REVENUE DIVISIONS ON CROSS-OVER TRAFFIC

In its *Decision*, the Board proposes to replace the methodology that it currently uses to divide cross-over traffic revenues between the SARR and the incumbent – the Modified Straight Mileage Prorate or “MSP” method – with what it calls the Average Total Cost (“ATC”) approach. Under this approach, “[t]he revenues for each part of the [SARR and off-SARR] movement would be allocated in proportion to the average total cost of the movement on-and-off SARR.” *Decision* at 16.

The Coal Shippers strongly urge the Board *not* to adopt the ATC methodology because the *Coal Rate Guidelines*, as properly and authoritatively construed

from 1985 to 2003, require that SARR revenue divisions be determined using market-based methods. If the Board does decide to depart from a market-based approach for determining SARR revenue divisions – which it should not – then the Board should not adopt ATC, as that methodology suffers from the same flaws that led the Board to reject similar approaches that did not fairly allocate fixed costs.

A. The Guidelines Call For The Use of Market-Based SARR Divisions

In the seminal *Nevada Power II* decision, the ICC ruled that cross-over traffic divisions should be allocated on the basis of market principles. *Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C.C. 2d 259, 268 (1994) (“*Nevada Power II*”).

This ruling was explained in detail in ICC Chairman McDonald’s comment:

A third generic issue settled by this decision is how to estimate the *revenue* that a SARR would earn on cross-over traffic. Because this traffic is not currently interlined, there are no actual revenue shares, or “divisions” data, available. We find that the proper approach is to estimate what the market-based divisions would be, and this will be the standard for future cases.

We use here a mileage proration *method* for estimating market-based divisions. That is, the SARR’s share of the total revenue is set equal to its share of the total mileage. However, I view our acceptance of that particular method to be a case-specific finding. Based on the specific evidence of record and our informed judgment about the workings of rail markets, we find that mileage-based revenue divisions offer a reasonable approximation in this case to the

market-based divisions that would be available to the SARR.

Id. at 280.

The ICC, the STB and litigants all adhered to the *Nevada Power II* market-based divisions rule in all subsequent SAC cases until *Duke/NS*. See, e.g., Docket No. 42022, *FMC Wyoming Corp. v. Union Pac. R.R. Co.*, Decision served May 12, 2000 at 30 (“*FMC*”). For example, in *FMC*, UP’s principal revenue witness testified that “[i]n the ‘contestable’ world, what should determine divisions is relative costs and general market place tendencies.”²⁶

The agency’s pre-2003 rulings conform with certain basic principles underlying the *Guidelines*’ SAC test: (1) the SARR is an independent replacement for the defendant carrier over the involved SARR route; (2) the SARR is not required to replicate off-SARR lines in order to handle the traffic of its shipper group; and (3) the SARR would negotiate market-based divisions with the residual incumbent. See V.S. Borts at 3-4, 16-17.

1. The SARR is an Independent Replacement Carrier

The *Guidelines* call for the complainant shipper to model a new, independent carrier that replicates the origin-to-destination service provided by the

²⁶ See Docket No. 42022, UP Reply Evidence, Verified Statement of Richard B. Peterson (filed March 31, 1999) at 19; Docket No. 42088, Complainant’s Opening Electronic Workpaper “III-A-Peterson wp.”

defendant carrier to the complainant shipper. In *Nevada Power II*, the ICC addressed the issue whether the SARR should be viewed as a carrier that replaces the incumbent over the lines it replicates, or should be viewed as a competitor. The ICC ruled that the SARR must be viewed as a replacement for – not a competitor of – the incumbent carrier over a SARR system. See *Nevada Power II*, 10 I.C.C.2d at 267. This ruling consistently has been upheld in subsequent ICC and STB decisions.²⁷

Nevada Power II and its progeny are rooted in the contestable market theory upon which the SAC test is based. See *Guidelines*, 1 I.C.C. 2d at 528. Contestable market theory is premised on a competitor freely entering a market, underpricing the incumbent (without fear of price retribution) and freely exiting the market (with its profits). Under contestability theory, the new entrant must be seen as a replacement carrier, because if the new entrant was viewed as a competitor, the incumbent could engage in retaliatory price reductions.

As explained by Professor Baumol and confirmed by Professor Borts in this proceeding, contestability theory is predicated upon potential entrants evaluating “the

²⁷ See *AEPCO*, Decision served Aug. 20, 2002 at 6 n.9 (“contestable market theory allows for the simulation of a competitive price by calculating what a hypothesized efficient producer would need to charge to provide replacement service”); *McCarty Farms Inc. v. Burlington N., Inc.*, 2 S.T.B. 460, 472 (1997) (“*McCarty Farms*”) (“[a]s the ICC explained at some length in *Nevada Power II*... it would be inconsistent with the nature and purpose of a SAC analysis to treat the SARR as a competitor of the incumbent railroad rather than its replacement”); *West Texas Utilities Co., v. Burlington N. R.R. Co.*, 1 S.T.B. 638, 670 (1996) (“*West Texas Utilities*”) (a SARR is “a replacement carrier that steps into the shoes of the incumbent carrier for the segment of the rail system that the SARR would serve”).

profitability of entry at the incumbent firms' pre-entry prices" without "fear of retaliatory price alterations" by the incumbent:

A contestable market is one in which the positions of incumbents are easily contested by entrants. In brief, a perfectly contestable economic market is defined to be one into which entry is completely free, from which exit is costless, in which entrants and incumbents compete on completely symmetric terms, and entry is not impeded by fear of retaliatory price alterations.

Baumol, Danzar and Willig, *Contestable Market and the Theory of Industry Structure* at 5, 349 (Rev. Ed. 1988) ("*Contestable Markets*").²⁸ It is clear that under basic principles of contestability theory, the new entrant replaces the incumbent for the business that it solicits. Otherwise, the new entrant could not evaluate "the profitability of entry at the incumbent firm's pre-entry prices,"²⁹ and could not set its own prices without "fear of retaliatory price alterations" by the incumbent.³⁰

²⁸ Accord Bailey & Baumol, *Deregulation and the Theory of Contestable Markets*, 1 Yale J. on Reg. 111, 114 (1984) ("[a] contestable market works most effectively if, in response to a profit-making opportunity, new firms can enter quickly, earn profits at least temporarily (before incumbents can constitute countermeasures) and then leave without any loss of investment or sunk capital").

²⁹ See *Contestable Markets* at 5.

³⁰ *Id.* at 349.

2. The SARR Is Not Required to Replicate Off-SARR Lines

The *Guidelines* permit and encourage shippers to augment the issue traffic with other traffic; that is, to “group” traffic in logical and efficiency-maximizing configurations. See 1 I.C.C. 2d at 544. When this “essential” element of contestability theory³¹ involves the inclusion of traffic that the SARR would handle in interchange with the incumbent, governing principles neither require the SARR to replicate off-SARR lines to accommodate this cross-over traffic, nor require the SARR to insure that the revenue over the off-SARR lines covers the off-SARR SAC costs. As Chairman McDonald observed in *Nevada Power II*:

in designing a stand-alone railroad (SARR), it may be assumed that existing single-line traffic would become interline traffic that is passed on at hypothetical interchange points. Permitting this assumption and thus crediting a SARR with so-called “cross-over traffic,” will allow shippers to make effective cases before the Commission using smaller hypothetical SARRs than would otherwise be required. Viewing a SARR’s interline rail partners simply as additional customers of the SARR means that the captive shipper is not required to ensure that far-flung rail lines are earning their full replacement cost of capital.

³¹ See, e.g., *West Texas Utilities*, 1 S.T.B. at 655; Docket No. 42051, *Wisconsin Power & Light Co. v. Union Pac. R.R. Co.*, Decision served September 13, 2001 at 12 n.20 (“*Wisconsin Power & Light*”); *Guidelines*, 1 I.C.C. 2d at 544.

10 I.C.C. 2d at 280 (Chairman McDonald, commenting). Thus, under the SAC test, “a rail captive shipper is not required to pay more than would be necessary to replicate the rail service it needs *for its own traffic*.”³²

This ruling also flows logically from underlying principles of contestable markets. *See* V.S. Borts at 16. A new replacement carrier is entitled to choose any segment of the incumbent’s market it wishes to serve. Indeed, contestability theory assumes that the new entrant will target entry for the most profitable segments of an incumbent’s business. *See Contestable Markets* at 481 (“entry opportunities will naturally be most attractive in those lines of activity whose incremental revenues are highest relative to incremental costs. It is entirely legitimate and desirable for entrants to seek out and exploit such “cream skimming” opportunities....”). *Guidelines*, 1 I.C.C. 2d at 543 (a least cost SARR should “maximize the carriage of profitable traffic” *inter alia*, by selecting routes to “tak[e] advantage of economies of density”).

Requiring a SARR to provide origin-to-destination service for all members of its traffic group would constitute a barrier to entry – in violation of other contestable market principles. Contestable market theory assumes that a new entrant faces no barriers to entry (V.S. Borts at 3), and carriers entering rail market today are not required to build facilities to provide origin-to-destination service for all shippers that they serve.³³

³² *McCarty Farms*, 1995 WL 55409 at *7 (emphasis added).

³³ *See, e.g.,* F.D. No. 33407, *Dakota, Minnesota & Eastern R.R. Corp. Construction Into the Powder River Basin*, Decision served January 30, 2002 at 39-50.

3. The SARR Would Negotiate A Market Division With The Residual Incumbent

The SARR entering a new market necessarily would negotiate divisions with its connecting carriers, including the residual incumbent (V.S. Borts at 10). Divisions agreements are arrangements between connecting railroad companies determining how the carriers will divide the revenues received from multiple-carrier movements.³⁴ As Chairman McDonald correctly recognized in *Nevada Power II*, divisions agreements between separate rail carriers are market-based, and “result from the interaction of supply considerations . . . and demand considerations . . .” 10 I.C.C. 2d at 280.

In the cases decided after *Nevada Power II* through *Duke/NS*, the ICC and the Board consistently found on the records presented that it was appropriate to utilize the MMP method to establish market-based SARR/residual incumbent divisions, on cross-over traffic.³⁵ MMP is the methodology the Board uses to calculate actual, market-based divisions on traffic contained in its waybill sample. The Board’s waybill sample contains statistical data collected from terminating waybill carriers.³⁶ For movements involving two or more carriers, the line-haul revenue shown on the waybill data typically is

³⁴ See *Official – Southwest Divisions via Southern Freight Territory*, ICC Docket No. 25390 (Decision served July 6, 1990) at 1990 WL 288358*1.

³⁵ See *McCarty Farms*, 2 S.T.B. at 472; *FMC* at 31; *Wisconsin Power & Light* at 24; *PPL Montana* at 11.

³⁶ See 49 C.F.R. § 1244.

aggregated. For example, in a two carrier line-haul move, the waybill data will show the total line-haul charge invoiced to the shipper. The waybill data does not show the division earned by each carrier.

The Board uses the waybill data for various carrier-specific analyses. As part of these analyses, the Board must determine what each carrier charges on its portion of a joint haul. Since this division data is not captured in the waybill, the Board uses the MMP method to estimate each carrier's actual revenue divisions. Under MMP "each carrier is assigned one 'block' for every 100 miles or part thereof that it carries the traffic, plus an additional block for originating or terminating the traffic; the total revenues are then allocated based on each carrier's share of the total number of blocks."³⁷ The purpose of MMP is to obtain an accurate estimate of the actual market divisions earned by the waybill sample carriers.

B. The Board's Abandonment of Market-Based Divisions

In its 2003 decision in *Duke/NS*, the Board abruptly abandoned its long-standing and correct conclusion that SARR divisions should be set using market principles. In *Duke/NS*, the Board found that market-based divisions "ha[ve] no place in a SAC analysis." *Id.* at 19. The Board went on to hold that "the revenue allocation should reflect ... the defendant carrier's relative costs of providing service over the two segments." *Id.* at 19-20.

³⁷ See *Duke/NS* at 17.

The Board made its ruling in *Duke/NS* without ever explaining that it was radically departing from longstanding and contrary precedent. Nor did the Board do so in the major SAC decisions that followed. Instead, the Board appeared to embark on an orchestrated, decision-by-decision attack on *Nevada Power II* and its progeny, essentially undoing the fundamental principles underlying these prior decisions.

1. The Predicate Decisions

In *Duke/NS*, Duke's proposed SARR provided origin service for many eastern coal origins that NS served.³⁸ NS argued that on many of the movements it was the sole destination carrier, that it exerted bottleneck pricing power over these shipments, and that it could use its bottleneck power to negotiate the SARR's divisions on cross-over traffic "down close to variable cost levels." *Id.* at 18.

In *Duke/NS*, the Board concluded that such a result would require the complainant shipper to "bear most of the fixed costs" of the SARR facilities, thus "depriv[ing] [the complainant] shipper of the benefit of grouping traffic (*i.e.*, realizing the economics of scale, scope and density)." *Id.* at 19. The Board then announced that as a result, marketplace divisions have "no place in a SAC analysis:"

Thus, a debate over how much of the revenues from cross-over traffic the hypothetical carrier could negotiate with the residual defendant has no place in a SAC analysis. (Indeed, the defendant carrier does not negotiate with itself as to whether one segment of its line should be allocated a larger share of

³⁸

See Duke/NS at 42-43.

the revenues from a movement than another segment of its own line.) Rather, the revenue allocation issue should reflect, to the extent practicable, the defendant carrier's relative costs of providing service over the two segments.

Id. at 19-20 (footnote omitted).

Significantly, the Board rejected Duke's request that NS produce actual market divisions, on grounds such production would not be "particularly instructive,"³⁹ and further ruled that application of the Board's MMP division standard would produce results that were too favorable to Duke. The Board then proceeded to apply its "relative cost" test, marking not only a radical departure from precedent because it rejected the market approach previously used, but a serious break from the *Guidelines*' view of the SARR as a replacement for the incumbent. For the first time, without explanation, the Board implied that the SARR was some sort of subset of the incumbent. *See Duke/NS* at 19 ("the defendant carrier does not negotiate with itself as to whether a segment of its line should be allocated a large share of revenues from a movement than another segment of its own line").

Next, in *Xcel*, the Board affirmed its ruling in *Duke/NS* that the Board should set cross-over traffic divisions using a "relative cost" test. The Board then proceeded implicitly to overturn another longstanding SAC principle – that a SARR is not required to replicate all lines used by its traffic group – by repeatedly referring to the use

³⁹ *Duke/NS* at 20.

of cross-over traffic as a “simplifying” modeling device, thus implying that a SARR is required as a matter of SAC theory to replicate all service provided by the defendant carrier to all members of the SARR traffic group. *Xcel* at 13-17.

In *Xcel*, the Board addressed a SARR constructed to provide origin-to-destination service from the PRB to Xcel’s Pawnee Colorado Station. The Xcel SARR included cross-over traffic. The Board opined that if the Xcel SARR provided origin-to-destination service for all of the cross-over traffic, the SARR “would need to be at least 10 times longer” (*id.* at 14), the expanded system would require additional traffic to build volumes over the extended network, resulting in Xcel’s “having to replicate almost all of BNSF’s system” (*id.* at 16), and the ensuring modeling process “would become so complicated as to risk being intractable.” *Id.* The use of cross-over traffic, the Board further opined, “provides a reasonable measure of simplification that allows SAC permutations to be more manageable.” *Id.* The Board never even mentioned its prior holdings that a SARR is not required to build origin-to-destination facilities for all SARR traffic group members.

The Board’s implicit *Xcel* rulings became explicit in *Otter Tail*, where the Board expressly stated that a SARR is required to replicate all service provided by the incumbent:

Without cross-over traffic, the SARR would replicate the entire service provided by the defendant railroad for all of the traffic included in the SAC analysis, so that all capital and operating costs associated with serving the

traffic group would be included in the SAC analysis, rather than relying on the “residual defendant” to provide what is often the majority of the transportation for the traffic group.

Otter Tail at 12.

The Board proceeded in *Otter Tail* to marry-up its new SAC theory – that the SARR must replicate all of the incumbent’s service for SARR traffic group members – with its new “relative cost” divisions methodology. According to the Board, the “relative cost” test reasonably approximates the revenue allocation that would apply if the complaining shipper modeled a SARR that replicated all of the service the incumbent provided to all members of the SARR traffic group, and then divided the SARR into on-SARR and off-SARR segments for revenue allocation purposes. As stated by the Board:

By focusing on the ratio of actual costs incurred by the defendant carrier, the revenue allocation method should maintain, to the extent possible, the relationship between revenue and costs that would exist in a full SAC analysis.

Otter Tail at 14.

The Board also addressed and dismissed *Otter Tail*’s argument that the Board should set SARR divisions using a market-based approach. In its discussion, the Board repeated its assertion – first expressed in *Duke/NS* – that a carrier “does not negotiate with itself” – and asserted that the result is consistent with the principle of contestable markets which, the Board opined, would produce a “cost-based” result because a SARR “would have no market power”:

if the question were what revenue division would result in a contestable marketplace, a market-based inquiry would collapse to the cost-based approach. The key feature of a contestable marketplace is the absence of entry barriers, such that a firm operating in this environment would have no market power. Thus, in a contestable market, divisions would be cost-based.

Otter Tail at 15.

Finally, the Board in *Otter Tail* made a backhanded reference to the fact that prior to *Duke/NS*, the ICC and the Board consistently had ruled that cross-over traffic divisions should be set using market principles. The Board stated that “even though the agency *might* have once thought otherwise” (*id.* at 15, emphasis added), the Board no longer believed that cross-over traffic divisions should be set using market principles. In its *Decision*, the Board simply repeated much of what is said in *Otter Tail* concerning the asserted propriety of using a cost-based division methodology.

2. The Board’s Rejection of a Market-Based Divisions Standard Violates the *Guidelines*

The Board should not adopt the ATC method to determine SARR divisions – or any other method that is solely cost-based – for one fundamental reason: adoption of such a standard violates the *Guidelines* as correctly construed and applied by the ICC and STB for 18 years. The Board’s step-by-step unraveling of the governing principles violates the *Guidelines* for several interrelated reasons, all of which flow from the theory of contestable markets upon which the SAC standard is premised.

**a. The Board's Cost-Based Divisions Test
Imposes Impermissible Barriers to Entry**

The *Guidelines* and contestable market theory assume that a SARR does not face any barriers to entry or exit. For SAC purposes, a barrier to entry consists of “any type of cost that a new entrant would have to incur that was not actually incurred by the defendant carrier.” *TMPA*, Decision served September 27, 2004 at 23. “Entry barriers can take the form of any friction that would slow entry into the industry and concomitantly increase the cost of entry.” *West Texas Utilities*, 1 S.T.B. at 657 n.37. The Board's cost-based divisions methodology imposes several impermissible barriers to entry.

- Construction Barrier to Entry. The Board's recent decisions, starting with *Duke/NS*, are based on the theory that a SARR must replicate the incumbent's origin-to-destination service for all members of the SARR traffic group. This requirement imposes an obvious entry barrier. In the real world, no carrier filing an application with the STB for authority to build a new rail line is required, as a prerequisite to entry, to construct facilities to provide origin-to-destination service for all the shippers it expects to service. Instead, the carrier – at its election – can build some facilities and enter into interchange agreements with other carriers.

For example, in 1981, Western Rail Properties, Inc. ("WRPI") obtained ICC approval to originate PRB coal deliveries.⁴⁰ WRPI provided *no* origin-to-destination service. Instead, WRPI entered into interchange agreements with UP to move traffic beyond its lines. Under the Board's current application of the SAC test, the real world WRPI would not have entered as it did, because the ICC would have required it to construct facilities to provide service beyond the lines it chose to construct.

Similarly, the Board recently re-approved the Dakota, Minnesota and Eastern's ("DM&E") application to originate PRB coal deliveries.⁴¹ DM&E does not provide origin-to-destination service for many of its potential customers. In re-approving DM&E's application, the Board did not require DM&E to provide service beyond the lines DM&E chose to construct or upgrade

The ICC correctly ruled in *Nevada Power II* that consistent with contestability theory, a complainant shipper did *not* have to provide origin-to-destination service for its cross-over traffic group members. This decision correctly applied the *Guidelines* and contestability theory. The Board's decisions starting with *Duke/NS* violate the *Guidelines* and contestability theory.

⁴⁰ *Chicago and N.W. Transp. Co. Construction and Operation of a Line of Railroad*, 363 I.C.C. 906 (1981).

⁴¹ See Finance Docket No. 33407, *Dakota, Minnesota & Eastern R.R. Corp. – Construction Into The Powder River Basin* Decision served February 15, 2006. .

• Price Barrier to Entry. The Board's cost-based divisions test provides a corollary price barrier to entry. In the real world, a carrier is not required to negotiate divisions using arbitrary "relative cost" measures. See V.S. Borts at 16. Instead, as the ICC held in *Nevada Power II*, it can negotiate a division based upon pertinent market factors, which include cost and demand factors. The STB's regulatory practice – outside of SAC cases – is to the same effect. The STB has statutory authority to set joint rate divisions in cases where the parties cannot agree.⁴² The STB's predecessor had the same authority, and routinely would consider evidence of negotiated divisions to determine divisions set under comparable market circumstances.⁴³ As observed by one court:

A validly established and currently applied basis of divisions of revenue derived from similar traffic moving in the same or adjacent territory under similar circumstances may properly be considered [in prescribing divisions]⁴⁴

Conversely, the ICC did not prescribe divisions based solely on the "relative costs" of the involved carriers: "[r]elative cost of service is not the only factor to be considered in determining just divisions."⁴⁵ As summarized by the ICC:

⁴² See 49 U.S.C. § 10705.

⁴³ See *Rates on Lumber and other Forest Products from Points in Arkansas*, 31 I.C.C. 673, 676 (1914).

⁴⁴ *Boston and Maine R.R. v. United States*, 208 F.Supp. 661, 677 (D.Mass 1962).

⁴⁵ *United States v. Abilene & S. Ry.*, 265 U.S. 274, 284 (1924).

There is no single yardstick or criterion which can be employed in determining fair divisions. *Baltimore & O.R. Co. v. United States*, 298 U.S. 349, 359. The question of what constitutes just and reasonable divisions involves the making of practical judgments and cannot be solved as though it were a mathematical problem. *Boston & Maine R.R. v. United States*, 208 F. Supp. 661, 675.

Akron, Canton & Youngstown R.R. v. Atchison, Topeka & Santa Fe Ry., 322 I.C.C. 491, 499 (1963).

- Productive Technique Barrier to Entry. It is well-established that a SARR is entitled to use the same productive techniques as a real world railroad. *See Guidelines*, 1 I.C.C. 2d at 542. This result comports with basic contestability principles.

As stated in *Contestable Markets*:

Entrants are expected to calculate the profits that entry can bring them.... In all of these [contestability] models, entry is assumed to be free in the sense that the act exerts no explicit costs and that entrants suffer no disadvantages in the techniques available to them.

Id. at 4. V.S. Borts at 3.

All real world railroads have the choice of building origin-to-destination/interchange facilities for their customers *or* building some other facilities and entering into service arrangements with connecting carriers to complete the required transportation service. Requiring a SARR to employ only one of these two techniques clearly is an impermissible barrier to entry.

**b. The Board's Reasoning In *Duke/NS*,
Xcel and *Otter Tail* Is Wrong**

To date, the Board has not explained why it now believes the long line of ICC and STB cases holding that SARR divisions should be set using market factors were wrongly decided. The Board's failure to acknowledge these longstanding precedents, and to explain why the rulings therein were incorrect, violates basic principles of administrative adjudication.⁴⁶

Not only has the Board failed to address past precedent, the rationales offered by the Board in *Duke/NS*, *Xcel* and *Otter Tail* for its radical switch in position are wrong.

- *Duke/NS*. The Board's analysis in *Duke/NS* was predicated upon a circular, outcome-determinative analysis. In *Duke/NS*, the Board assumed that all SAC cases involve bottleneck transportation and that, in the real world, bottleneck carriers always negotiate very favorable (for them) divisions. Accordingly, the Board concluded that market-based divisions should not be used in a SAC analysis. Putting to one side whether the Board's hypothetical analysis in *Duke/NS* was correct, there are many SARRs that present different fact patterns. For example, the PRB SARRs presented to the Board

⁴⁶ See *Burlington N. & Santa Fe Rwy. Co. v. STB*, 403 F.3d 771, 778 (D.C. Cir. 2005) (remanding a decision to the STB because the agency "overlooked binding precedent"); *New York Cross Harbor R.R. v. STB*, 374 F.3d 1177, 1188 (D.C. Cir. 2004) (finding that the Board acted arbitrarily and capriciously when it failed to distinguish contrary precedent); *Borough of Columbia v. STB*, 342 F.3d 222, 229 (3rd Cir. 2003) (stating that if an agency departs from precedent without a "reasoned explanation" the court may find that the agency acted arbitrarily and capriciously).

in past and pending cases involved vastly different transportation patterns than those at issue in *Duke/NS*. And, evidence submitted in the *Western Fuels* shows that a PRB SARR could negotiate reasonable SARR market-based divisions.

- Xcel. In *Xcel*, the Board implicitly ruled that a SARR must replicate all of the incumbent's cross-over traffic facilities. The Board went on to hold that this requirement is fundamentally unworkable because modeling a full origin-to-destination SARR issue would produce "intractable" modeling problems. The Coal Shippers observe that between 1985 and 2001, the SARR test – as properly construed – did not require construction of all these facilities, and worked rather well. The Board in *Xcel* created its own set of absurd problems by mistakenly imposing the "build all facilities" rule.

The ICC stated in *Guidelines* that the purpose of the SAC test was to allow a shipper to replicate a "portion" of an incumbent railroad's system. The Board's *Xcel* holding – by its practical implication – requires a shipper to replicate "almost all of [the defendant's] system." The Board's construction of the SAC test in *Xcel* is fundamentally at odds with the SAC test as set forth in the *Guidelines*, unless it assumes the ICC intended the SAC test *not* to work in practice.

- Otter Tail. The Board holds in *Otter Tail* that any SAC divisions test would "collapse" into a cost-based analysis. This analysis is fundamentally at odds with the Board's "relative market power" rationale for rejecting market-based divisions in *Duke/NS*. A "relative market power" test results in divisions set by "relative market power," and by definition does not "collapse" into a cost-based analysis.

The Board's *Otter Tail* divisions analysis also is predicated upon a complete departure from governing *Guidelines* standards. The Board in *Otter Tail* argues that a SARR "has no market power" because potentially competing SARR's would drive all SARR divisions to cost-based levels. *Id.* at 11. However, this repetitive competition scenario violates a basic SAC rule set forth in the *Guidelines* and contestable market theory. As discussed above, in *Nevada Power II*, the ICC ruled that a SARR was a replacement for, not a competitor of, the incumbent carrier. And, as a replacement carrier, the SARR evaluates "the profitability of the incumbent firm's pre-entry prices" without "fear of retaliatory price alterations by the incumbent."⁴⁷ Otherwise, "a potential entrant will shun a market when price retaliation by the incumbent reduces revenue before the entrant has a chance to recoup its costs."⁴⁸

The same analysis applies to the hypothetical the Board raises in *Otter Tail* – *i.e.*, a new SARR entering the market. If a new SARR is viewed as a competitor of the existing SARR, and the entrant can take away the existing SARR's revenues before the existing SARR recoups its costs, then the latter will shun the market. Stated another way, the "no retaliation" principle applies equally to any market participant, whether it is the incumbent or a prospective new SARR. *See* V.S. Grimm at 5-6.

⁴⁷ *Contestable Markets* at 349.

⁴⁸ *Nevada Power II*, 10 I.C.C. 2d at 266 (internal quotation marks omitted).

The Board's *Otter Tail* divisions analysis also violates basic SAC axiom that the hypothetical SARR should not face risk not currently faced by the incumbent railroad. As the Board explained in *Wisconsin Power & Light*:

But as we have often explained, SAC principles require the exclusion of costs and risks not faced by the incumbent railroad, so as to remove any advantages which the existing railroad has over a hypothetical stand-alone railroad. See *Coal Rate Guidelines*, 1 I.C.C.2d at 529; *Burlington N.*, 114 F3d at 214; *West Texas*, 1 S.T.B. at 668-73; *Arizona*, 2 S.T.B. at 385-87. Here, UP has acknowledged, as it must, that UP does not operate in a contestable market, which means the risk UP's proposed adjustment is designed to take into account – that a rise in projected returns above a certain level will result in the carrier being replaced immediately and entirely by a new entrant – is not faced by UP itself.⁴⁹

The Board's decision in *Otter Tail* assumes that a SARR would be unable to charge rates above its costs due to the risk of entry by competing carriers. This risk of competitive entry, however, is not faced by incumbents when they establish revenue divisions with other carriers, and, as such the incumbents price their services well above costs. The Board's argument regarding revenue divisions in *Otter Tail* would unfairly place a risk upon the SARR not faced by the incumbent carriers, in clear violation of basic SAC principles.

⁴⁹ *Wisconsin Power & Light* at 32.

Finally, the Board also appears to confuse contestability theory in its *Otter Tail* decision with a least-cost SARR operation by assuming a SARR will only price at its cost level. Under contestability, a potential entrant will gauge entry into a market not based only on its cost, but also based on the incumbent railroad's pre-entry price.⁵⁰ If the SARR can provide rail service at a profit relative to the incumbent's existing price for the same service by operating more efficiently, the SARR will enter the market, and set its rate a level below the incumbent's price. How low the SARR sets its rate is dependent upon its overall costs, but in a contestable market, how high the SARR sets its rate is a function of the incumbent's existing price. The SARR's overall costs act as a floor for the SARR's pricing structure, not a cap.

3. The Board Should Continue to Rely Upon the MMP or MSP Methodologies

Prior to *Duke/NS*, the Board consistently held that in the absence of probative actual divisions data, the Board could set divisions on cross-over traffic using the MMP methodology. As discussed above, this methodology is one the ICC developed, and one the Board continues to apply, to determine market divisions in its waybill analyses.

⁵⁰ See *Guidelines*, 1 I.C.C. 2d at 528 ("potential entrants find it appropriate to evaluate the profitability of entry in terms of the incumbent firm's pre-entry price.")

In *Duke/NS*, the Board slightly modified the MMP methodology. The resulting methodology was MSP.⁵¹ The ICC and the STB have used these two divisions methods in the last ten SAC cases involving cross-over traffic.⁵² The Board's MMP and MSP methodologies provide reasonable and well-founded methods to set market-based divisions on cross-over traffic, which reflect both market and cost factors. As Chairman McDonald explained in *Nevada Power II*:

Market-based divisions result from the interaction of supply considerations (the relative costs incurred by the carriers in providing the interline movement) and demand considerations (the relative bargaining power of the two carriers) . . .

10 I.C.C. 2d at 280. The Coal Shippers urge the Board to continue to apply these measures to set cross-over traffic divisions in pending and future cases.

**C. The ATC Method Is Not A Proper
"Cost-Based" Divisions Method**

If the Board mistakenly decides to utilize a "cost-based" methodology for determining SARR revenue allocations, the Board should not adopt its proposed ATC

⁵¹ "Under the MSP approach, revenue from cross-over traffic is allocated based on the total mileage hauled by the SARR and the residual carrier, while retaining a 100-mile additive for originating or terminating the traffic." *Id.* MSP is a "refinement" of the Block Methodology. *Xcel II* at 8. "The only difference between the two approaches is that the lumps in the Block Methodology have been smoothed out." *Duke/NS* at 24.

⁵² See *McCarty Farms*, 2 S.T.B. at 472; *FMC* at 31; *Wisconsin Power & Light* at 24; *PPL Montana* at 11; *TMPA* at 31; *Duke/NS* at 25; *CP&L* at 21; *Duke/CSXT* at 22; *Xcel* at 17-19; and *Otter Tail* at 14.

methodology. This methodology, *inter alia*, suffers from the very same flaws that have led the Board to reject similar cost-based approaches.

1. Governing Board Precedent

In *Duke/NS*, NS offered a revenue allocation procedure that in subsequent cases was called the Density Adjusted Revenue Allocation (“DARA”) method. The sole purpose of the DARA allocation methodology is to allocate a disproportionate share of SARR revenues to off-SARR light-density lines. The Board described this approach as follows:

The premise of NS’s proposal is that proportionately more revenues should be allocated to lighter density lines because (all other factors being equal) they would have higher average total costs. Under NS’s proposed Density Methodology, the variable cost for each carrier’s segment of the movement would need to be calculated, as well as the total available contribution to fixed costs (the total revenues less total variable cost for both segments); revenues would then be allocated between the two carriers in proportion to each segment’s relative variable cost, distance, and density. Thus, the longer the residual NS would carry the traffic and the lighter the density of the residual NS tracks, the more revenue would be attributed to the residual NS.

Duke/NS at 20-21.

The Board examined NS’s proposal and rejected it, on grounds that it contained a faulty assumption; *i.e.*, that heavy density lines and light density lines “have

the same fixed cost per mile.” The Board found this critical assumption implausible and unsupported on the record:

NS’s proposed formula contains the critical assumption that light-density lines have the same fixed costs per mile as heavy-density lines – an assumption that Duke challenges here. If the fixed costs per mile are not roughly the same, then NS’s methodology could allocate too much revenue to the light-density lines.

But there is no evidence that fixed costs per mile are the same for the ACC’s segment of any line as they are for the residual NS’s. By definition, fixed costs are those costs that do not vary with output and would include investments in land, tunnels, track, and bridges. But this does not mean that the fixed investment costs are the same for light- and heavy-density lines. The fixed investments required for the superhighway are not the same as the fixed investments needed for a country road. The two roads may share certain basic investments, but it would be implausible to just assume that total fixed investment would not depend on the expected use of a road or, in this case, a rail line.

There may be merit to allocating revenues based on the relative variable cost and average fixed cost to haul the traffic over each segment of the move, if those costs can be fairly approximated. But NS has not shown how its proposed formula would account for differences in fixed costs per mile. NS has provided no evidence that its per-mile capital investments in the Central Appalachian region are identical to its per-mile capital investments along its lower-density delivery network. This deficiency strikes at the heart of NS’s proposed

methodology, and thus the Board will not adopt it.

Duke/NS at 20-21. The Board reached similar conclusions in its subsequent decisions involving DARA. See e.g., *Xcel* and *Otter Tail*.⁵³

2. The ATC Methodology

The Board's ATC methodology, like DARA, purports to be a density-based revenue allocation methodology. The ATC methodology is summarized as follows in the *Decision*:

First, the railroad's average variable cost (AVC) per ton to haul the traffic over each segment would be estimated using unadjusted URCS (as was the first step with DARA). The parties would then need to calculate the average fixed cost (AFC) per ton of traffic using the various segments. They would do so by calculating the railroad's system-average fixed cost per route mile, using URCS to determine the railroad's total fixed costs and dividing this figure by the total route miles of track operated by the railroad. This system-average fixed cost per route mile could then be combined with the route miles and the traffic density of any particular segment of the railroad's network to estimate an AFC per ton associated with that segment. The ATC for any particular segment would be the sum of AVC and AFC for that segment.

Decision at 20.

⁵³ The Board also found in *Xcel* and *Otter Tail* that once unraveled, the DARA formula was "actually insensitive to economies of density...." *Xcel* at 8.

The Board asserts in its *Decision* that the ATC method “does not suffer from the deficiency that led to the Board’s rejection of DARA.” *Id.* at 19. However, the opposite is true. The Board rejected DARA in *Duke/NS* because it “contains the initial assumption that light-density lines have the same fixed costs per mile as heavy density lines....” *Duke/NS* at 29. The ATC methodology suffers from the *very same defect*. V.S. Borts at 20. Under ATC, the Board assumes that each mile of line has “the same fixed costs per mile” which, under ATC, equals a carrier’s URCS system-average fixed cost per route-mile.

The Board further observed in *Duke/NS* that the Board would need to obtain actual line-specific investment data in order to “fairly approximate” line-specific fixed costs per mile. *See Duke/NS* at 21. The Board’s proposed ATC methodology ignores this directive as well. ATC suffers from exactly the same deficiencies that led the Board to reject DARA, and likewise should be rejected in this proceeding. As discussed above, Coal Shippers support the Board’s continuing use of MSP as a methodology that properly reflects both market and cost factors.

3. Allocating Fixed Costs

The Board’s ATC method attempts to allocate a defendant carrier’s total system costs to a particular shipper’s traffic. Significantly, the Board does not address the long-held, fundamental principle of railroad costing that fixed costs cannot be rationally allocated to particular customers on a cost of service basis. As stated by the ICC in its seminal proceeding on rail cost funding:

By definition constant or fixed costs are not allocable or assignable upon a cost of service basis, nor traceable to particular units of output, for otherwise they could have been, in fact, variable and not constant.

Rules To Govern The Assembling and Presenting of Cost Evidence, 337 I.C.C. 298, 395 (1970).

Similarly, the ICC held in the *Guidelines* that “[t]he differential between marginal costs and average costs cannot be assigned to specific movements by any conventional accounting methodology.” 1 I.C.C. 2d at 526.⁵⁴ And the ICC went on to hold that “[a]ny means of allocating these costs among shippers other than actual market demand is arbitrary....” *Id.* The fundamental purpose of the *Guidelines* was to develop maximum rate constraints that were not dependent on arbitrary cost-based allocations of carrier fixed costs. The ATC method – or any other strictly “cost-based” divisions methodology – reinserts into the SAC process the very problem the ICC was attempting to eliminate – the use of arbitrary cost formulas to allocate constant costs.

⁵⁴ The ICC defined “average cost” as “the total cost divided by the total unit of output” and defined “marginal cost” as “the change in the total cost caused by a unit change in the volume of output. *Coal Rate Guidelines – Nationwide*, Decision served Feb. 24, 1983 at 7 n.17, 18.

III. THE BOARD SHOULD REVISIT ITS "CROSS-SUBSIDY" TEST

In *PPL Montana*, the Board for the first time announced and applied a threshold "cross-subsidy" test to the coal rate complainant's SAC presentation. Under the new test, if the revenues generated by the complainant's traffic and other traffic moving over a separately identifiable segment or division of the SARR are insufficient to cover the full costs of that segment or division, the Board will dismiss the complaint even if total SARR revenues exceed total SAC. In *Otter Tail*, the Board announced (but did not apply⁵⁵) a new variant of the *PPL Montana* test, under which a similar "cross-subsidy" check would be made again at the rate relief stage, to determine whether any segment of the complainant's movement has attributable revenues that exceed full segment SAC by a lesser amount than total SARR revenues exceed total SAC. If so, then under *Otter Tail* the measure of rate relief would be reduced accordingly. *Otter Tail* at 9-10.

The Board's new approach to the cross-subsidy issue was not raised in the *Decision* as a matter to be considered in this proceeding. However, that approach represents as much or more of a threat to captive shippers' remedies under the *Guidelines* as any individual issue addressed in the *Decision's* proposals. The widespread view in the coal shipping community is that if applied in the manner described in *Otter Tail*, the threshold and "second-stage" cross-subsidy tests effectively will put fair rate relief beyond the reach of utility coal shippers whose generation facilities are not located on or

⁵⁵ The Board dismissed the complaint in *Otter Tail* based on application of the threshold test.

closely adjacent to high-density rail lines; which is to say, most utility coal shippers. Therefore, the Coal Shippers submit that the *PPL Montana/Otter Tail* test should be reconsidered in this proceeding. For the reasons explained below, the Board's cross-subsidy approach cannot be reconciled with the governing principles of CMP, and should be discarded. If it is not eliminated altogether, then at a minimum the test must be reformed to conform to the true cross-subsidy concept reflected in the *Guidelines*, and its use should be limited to the initial stages of the SAC analysis.

A. The Board's Approach Conflicts with CMP

The *Guidelines* themselves speak only of concerns over the complainant's traffic cross-subsidizing other, non-issue traffic. *See, e.g.*, 1 I.C.C. 2d at 523. Nowhere is it suggested that the maximum rate analysis should entail a search for so-called cross-subsidies *anywhere* on either the defendant's system or the SARR. And by inviting the defendant to scrutinize a complainant's SARR design for any line segment (however defined) where total SAC is higher than attributable revenue from only that traffic which "uses" the segment,⁵⁶ the Board would impose a burden on the SARR that it does not, and cannot, impose on the incumbent.

In *Nevada Power II*, the Board's predecessor explained that the basic objective of the SAC constraint could only be accomplished if, *inter alia*, the SARR and the incumbent were treated alike with respect to the role of sunk costs, and the SARR consistently was treated as a replacement for the incumbent, as opposed to a competitor:

⁵⁶ *See Otter Tail* at 10.

In simulating a contestable market in our SAC analysis, we do not eliminate sunk costs; rather, *we assume that the costs that are sunk for actual rail carriers will also be sunk for the hypothetical efficient entrant*. Therefore, we must exclude from our SAC analysis any behavior that would make sunk costs a barrier to costlessly reversible entry.

* * *

In sum, to determine the rates that would be available to shippers if rail markets were contestable, we cannot take account of any post-entry responses by incumbents. Instead, *we view the entrant as if it were a replacement for that segment of the rail system whose services the entrant would be offering*.

10 I.C.C. at 267 (emphasis supplied). The Board's cross-subsidy test violates these maxims. In order to pass the test, all segments of a SARR must be shown to generate revenues from the traffic using the segment in excess of SAC. The incumbent, however, is under no such constraint; it is presumed to act rationally in carrying any traffic that covers its directly variable costs, which by definition do not include sunk costs. *Ex Parte No. 355, Cost Standards for Railroad Rates*, 364 I.C.C. 898, 899, 904 (1981) ("*Ex Parte No. 355*"). Assuming *arguendo* that any cross-subsidy test should be applied to the complainant as a prospectively subsidized entity (as opposed to the subsidizer envisioned by the *Guidelines*), without question it should be the same test that is applied to real-world railroads. Since the SARR is deemed to be a replacement for the incumbent⁵⁷ and the incumbent already has incurred sunk costs for the line segments replicated by the

⁵⁷ See, e.g., *West Texas Utilities*, 1 S.T.B. at 670; *Nevada Power II*, 10 I.C.C. 2d at 267.

SARR, those costs must be considered sunk vis-a-vis the SARR as well, and eliminated from any SAC or cross-subsidy analysis.

As most recently applied in *Otter Tail*, the Board's internal cross-subsidy test contemplates a standard for detecting the presence of a cross-subsidy which differs markedly from the regulatory standards applied by the Board in related contexts, including application of the "management efficiency" constraint of CMP.

As noted, the agency's historic rules for determining whether one segment of traffic was improperly cross-subsidizing another focused on directly variable costs; that is, line-haul operating, switching and station clerical costs.⁵⁸

As long as a rate covers DVC (directly variable costs), cross-subsidy will not be necessary and predatory pricing will not be taking place. We believe that the formula we are adopting will allow us to determine the costs that directly vary with the service rendered. Cross-subsidy and predatory pricing occur only when the carrier services the shipper at noncompensatory rates. The formula we have proposed should ensure the compensatory nature of the rates.

Ex Parte No. 355, 364 I.C.C. at 904. See also V.S. Grimm at 9-10. As the agency further developed the cross-subsidy concept for specific application to captive coal rates through implementation of the Long-Cannon Amendments,⁵⁹ it incorporated short-run marginal costs as part of a multi-faceted approach toward identification of that portion of a

⁵⁸ *Ex Parte No. 355, 364 I.C.C. at 899.*

⁵⁹ 49 U.S.C. § 10701(d)(2).

railroad's system revenue shortfall that should not be recovered from captive traffic.⁶⁰

See Guidelines, 1 I.C.C. at 540. In stark contrast, the test described by the Board in *Otter Tail* would count as improperly "cross-subsidized" any SARR line segment whose attributable revenues did not exceed the *full SAC* assigned to that segment. *Id.* at 10. Again, by consigning the SARR to a traffic selection burden not borne by the incumbent (or any real-world railroad), the Board has erected an impermissible entry barrier and contravened the "essential" concept of grouping as applied under contestability theory and the *Guidelines*. 1 I.C.C. 2d at 543-544.

B. The Board's Test Effectively Mandates a Segmented SAC Analysis

The method by which the Board purports to apply its cross-subsidy test both conflicts with the definition of an improper cross-subsidy set out in the *Guidelines* (and reiterated by the Board in its decisions), and contains inherent flaws which illustrate why it cannot be used for any purpose other than an initial assessment of whether it is rational for the SARR to pursue a given piece of traffic – the same limited cross-subsidy cross-standard that applies to real-world railroads.

The *Guidelines* warn against improper cross-subsidization by a complainant of "the costs of any facilities or services from which it derives no benefit." 1 I.C.C. 2d at 523. While the Board in *PPL Montana* and *Otter Tail* extended (improperly, in the Coal

⁶⁰ The Board also incorporated the use of long-run marginal costs as a barometer of fixed plant efficiency. 1 I.C.C. 2d at 537-538.

Shippers' view) the cross-subsidy prohibition to non-issue traffic as well, it nonetheless restated the test in the same way:

... as the Board explained in the *PPL* case, a complainant cannot "shift responsibility for paying for facilities it uses to other shippers *who do not benefit from those facilities.*"

Otter Tail at 7 (emphasis supplied), citing *PPL Montana*, Decision served March 24, 2003 at 6 & n.21. In *practice*, however, the Board appears to be adhering to a very different definition, to improper and pernicious effect. Simply put, the Board seems to be equating "benefit" with "use."

The flaws in the Board's internal cross-subsidy analysis may be illustrated through use of the schematic example employed in *Otter Tail* (at 10). As simplified below, it depicts a three-segment SARR in which the complainant (Shipper 1) moves coal from B to A; a nearby utility (Shipper 2) moves coal from C to A via B; and a third SARR customer (Shipper 3) moves coal from B to D via C.



The Board first observes that Shipper 1's SAC presentation at a minimum must include the B-A segment, designated as the "core facilities." *Id.* at 9. Since Shipper 2 also moves coal over the core facilities, the Board confirms that it would be appropriate both to include its traffic in the SARR, and to build the "secondary facility" between B and C in order to accommodate all of the origins from which Shipper 2 obtains coal. *Id.* The presence of the secondary facility then justifies inclusion of

Shipper 3 in the SARR traffic group as well. *Id.* It is when the Board moves to address Shipper 3's traffic and the question of appropriate cost sharing that the errors and implications of the Board's cross-subsidy approach are exposed.

The Board's first comment regarding Shipper 3 misapplies the *Guidelines'* definition of an improper cross-subsidy:

Shipper 3 uses only the secondary facilities and does not use the core facilities. BNSF's argument that revenue from Shipper 3 should not be used to pay for the core facilities is correct

Id. at 10. In fact, neither BNSF nor the Board is correct. The relevant question is not whether Shipper 3 *uses* any portion of the core facilities, but whether Shipper 3 *benefits* from those facilities. And the answer, quite clearly, is that it does, since the A-B segment is an essential component of the A-B-C line needed to serve Shipper 2. In other words, the core facilities are needed in order to allow the movement of Shipper 2's traffic – traffic which also shares the B-C segment (and costs) with Shipper 3's traffic. But for the presence of Shipper 2 (which requires the core facilities), Shipper 3 would have to bear the total cost of the B-C segment itself, thereby *increasing* its revenue burden. As with a real-world railroad, Shipper 3 benefits from SARR facilities that it does not “use,” because the traffic that does use them contributes to the density economies that will help hold Shipper 3's rates down. Under the standard set down in the *Guidelines* (and recited in *Otter Tail*), it is entirely appropriate that Shipper 3

would make *some* contribution to the core facilities, as part of its support for the overall A-B-C line. *See also* V.S. Borts at 13-14.

The Board next considers the impact on Shipper 2 of the inclusion of Shipper 3 in the SARR traffic group:

. . . by including this traffic in the analysis, Shipper 2 can share more of the capital costs of the core facilities, which will ultimately lower the rate the SARR would need to charge the captive shipper to earn a reasonable return on the core facilities. *Indeed, if the revenue contribution from Shipper 3 were sufficient to cover the entire capital cost of the secondary facilities, then all of the revenue from Shipper 2 could be used to share the expenses of the core facilities. This would not entail a cross-subsidy.*

Otter Tail at 10 (emphasis supplied). This cannot be squared with a proper cross-subsidy approach, either. Since Shipper 2 clearly derives a benefit from the B-C segment, a portion of its revenue must be presumed to contribute to the capital cost of that segment just as Shipper 3's revenue does. No real-world railroad would attempt to allocate revenue among line segments in the manner described by the Board in *Otter Tail*. *See also* V.S. Grimm at 13. Rather, just as the Board's predecessor found in the *Guidelines*, the railroad would make a threshold determination whether a given piece of traffic – Shipper 1, for example – could support rates sufficient to cover its short-run marginal cost and make some contribution to going concern value. *Id.*, 1 I.C.C. 2d at 540. If so, it is in the carrier's (and the SARR's) best interest to attract or retain that traffic.

Once the threshold determination is made that traffic will cover its direct cost and make some contribution to common costs – *i.e.*, that there is no *true* cross-

subsidy – it is neither necessary nor realistic to inquire further as to how revenues from that traffic might be distributed among the various facilities from which it derives benefit (including facilities that it does not use but are used by other shippers that also share facilities with the subject traffic). In *Otter Tail*, the Board opines that such a second stage analysis should be undertaken, toward the cause of “...ensur[ing] that the agency itself does not create a cross-subsidy when we set a rate prescription.” *Id.* at 10. As the Coal Shippers’ witnesses Drs. Borts and Grimm explain in their accompanying testimonies, however, the Board’s approach manifestly is not a valid cross-subsidy analysis. *See* Borts at 10-11; V.S. Grimm at 4-8.

Returning to the Board’s example, a missing key assumption is the costs attributable to the B-C segment, the so-called “secondary facility.” As Dr. Borts explains,⁶¹ if we assume costs of \$30 for this facility, total SAC for the SARR remains \$110, and total revenues are \$130, for a surplus of \$20 or 15%.⁶² As the Board notes in *Otter Tail*, a commensurate rate reduction⁶³ for Shippers 1 and 2 would reduce their total

⁶¹ V.S. Borts at 12-13.

⁶² The Board commits an arithmetic error in executing its example. *Otter Tail* at 10. Total SARR revenue (\$130) exceeds SAC by \$20; the percent reduction needed to reduce \$130 to \$110 is approximately 15%.

⁶³ The Board’s example uses the percent reduction method, so that is the method used in the text here. As discussed in Part I, the Coal Shippers support elimination of the percent reduction formula in favor of GPRM, RAM, MCM and/or MMM. For purposes of illustrating the flaws in the Board’s cross-subsidy approach, however, it is appropriate to use the same assumptions and methods relied on by the Board in *Otter Tail*.

contribution below the \$100 cost of the A-B-C portion of the SARR (it would be \$93.00), though an identical percentage reduction for Shipper 3 also would reduce its rate (from \$20 to \$17) and would make total revenues equal total SAC (\$110). The Board pronounces this result unacceptable, because it implies that Shipper 3's revenue is making a contribution to facilities which Shipper 3 does not "use." *Id.* However, Shipper 3 in fact does use the B-C⁶⁴ segment, and benefits from the A-B segment as a result if its being necessary for the movement of Shipper 2's traffic. The Board's conclusion improperly assumes that Shipper 3 would use the B-C segment for free. *See V.S. Borts* at 13-14.

The insertion of a cost value for the B-C segment (\$30) clearly illustrates why Shipper 3 benefits from and would contribute to the A-B-C facilities. Because those facilities exist, Shipper 2's traffic moves over the secondary facility and Shipper 3 realizes a rate reduction (from \$20 to \$17). If Shipper 2's traffic did not move, Shipper 3 would bear all the costs of the B-C segment. To do this, Shipper 3 would have to absorb a rate *increase*, from \$20 to \$40. *V.S. Borts* at 14.

As Dr. Grimm explains, the Board's second-stage *Otter Tail* test is not a measure of true cross-subsidy, as it is virtually impossible to measure or trace the revenue

⁶⁴ Note that this would *not* be the case if the SARR consisted of only two segments, A-B and B-C, and had only two classes of shippers, the complainant moving "west" between A and B, and a group whose traffic all moved "east" between B and C. In this example, no other SARR shipper would share facilities with the complainant or with any other SARR shipper that shared the core facilities, and thus would be indifferent to whether the core facilities existed. In such a case, it *would* be improper to assume that revenues from the non-issue traffic should contribute to the core facilities.

contributions that would or should be made to individual line segments by interdependent SARR shippers who – like a real-world railroad’s customers – benefit to varying degrees from the existence of various system facilities (whether they actually “use” them or not). Rather, it is a “segmented SAC” analysis, which improperly denies complainants the benefits of density economies and – consistent with the expressed desires of its railroad advocates – drives up SAC rates. However, it is an established principle that SAC calculations and resulting rate reasonableness determinations must be based upon system-wide, not segment-specific, analyses.⁶⁵

The segmented SAC rule implicit in the Board’s *Otter Tail* variation on the *PPL Montana* cross-subsidy test also cannot be squared with the governing statute and the *Guidelines*. In defending its second stage cross-subsidy approach, the Board in *Otter Tail* envisions a world in which the complainant’s SARR must compete with other SARRs that could be imagined by other members of the complainant’s traffic group:

[O]ther captive shippers in the traffic group could bring a challenge to their own rates in the future. Even rates that are currently under contract will be renegotiated at some point, and the potential regulatory relief that might be available if a contract is not renewed or revised is the backdrop to such negotiations. Furthermore, the goal of the SAC analysis is to simulate the competitive market rate that would prevail in a contestable marketplace, where no rates above the SAC level for any shipper in the selected traffic group would be

⁶⁵ See *Metropolitan Edison Co. v. Conrail, et al.*, 5 I.C.C. 2d 385, 424 (1989) (“... segregation of revenue comparisons by origins violates the SAC test requirement that actual total revenues be compared with the total SAC ...”); *McCarty Farms v. Burlington N. Inc.*, 4 I.C.C. 2d 262, 270 (1988); *Guidelines*, 1 I.C.C. 2d at 531. See also *Central Power & Light Co. v. Southern Pac., et al.*, 1 S.T.B. 1059, 1072 (1996).

sustainable without attracting new entry. Thus, our analysis must assume the repeated application of the SAC test to all shippers in the traffic group.

Otter Tail at 11. However, this iterative construct would shift the focus from the complainant's challenged rates to the rates on other movements which are not properly before the Board for adjudication, and in many cases not within the scope of the Board's jurisdiction.⁶⁶ This is inconsistent both with the *Guidelines* and the governing statute.

The *Guidelines* are clear that the focus of the SAC analysis is on the movement subject to the challenged rate(s), and the efficiencies that might be realized through a SARR system designed for that movement. Thus, the Board's lodestar methodology speaks of SARR design and traffic group selection that would optimize results for the *complainant*, not non-party members of a traffic group:

In selecting the route of a SAC railroad, for instance, an overriding factor may be the effort to lower costs by taking advantage of economies of density [T]he stand-alone railroad may not represent the shortest route for the captive shipper, but the one with the highest traffic densities

⁶⁶ Many members of a SARR traffic group usually ship under contracts with the defendant carrier. By statute, the Board has no authority over that transportation. 49 U.S.C. § 10709(c)(1). The Board suggests that a SAC analysis nevertheless might be used as a "backdrop" for negotiations when such contracts expire. If the SAC analysis necessarily incorporates the speculative, iterative series of SAC calculations for each member of a prospective traffic group (many of which themselves could be under contract) implied in *Otter Tail*, it would be utterly useless as a reliable negotiations support tool.

The ability to group traffic of different shippers is essential to the theory of contestability. It allows the captive shipper to identify areas where production economies define an efficient subsystem or alternative system whose traffic is divertable to a hypothetical competitor.

Guidelines, 1 I.C.C. 2d at 544. To the same effect is the core principle of contestability that excludes incumbent or third party response from the analysis.

[T]he potential entrants evaluate the profitability of entry at the incumbent firms' pre-entry-prices. That is, although the potential entrants recognize that an expansion of industry outputs leads to lower prices – in accord with the market demand curves – the entrants nevertheless assume that if they undercut incumbent's prices they can sell as much of the corresponding good as the quantity demanded by the market at their own prices.

Contestable Markets at 349. Nothing in the *Guidelines* supports the notion that the reasonableness of a complainant's rates should be dependent in any way on the calculation of alternative SAC rates for non-issue traffic, on the premise that those shippers "could bring a challenge to their own rates in the future." *Otter Tail* at 11.

The governing statute likewise focuses on the "the transportation to which a particular rate applies," and decrees that "the rate established by such carrier for such transportation must be reasonable." 49 U.S.C. § 10701(d)(1). The Board only has authority to consider the reasonableness of a rate if it is the subject of a specific shipper complaint that actually is lodged with the agency,⁶⁷ and it has no authority whatsoever

⁶⁷ 49 U.S.C. § 11701(a).

with respect to the reasonableness of rates set by contract⁶⁸ or applicable to traffic that enjoys effective transportation competition.⁶⁹ Both types of traffic typically are included in a SARR shipper group. It is methodologically improper and contrary to the spirit – if not the letter – of the law for the Board to alter the measure of rate relief on a movement over which it clearly has jurisdiction on the basis of assumptions that other movements which are not the subject of complaints, and which in many cases are beyond the reach of the Board’s authority, nevertheless might avail themselves of the agency’s regulatory remedies sometime in the future.

The Coal Shippers acknowledge that the Board’s application of its threshold cross-subsidy test in *PPL Montana* was approved by the Court of Appeals as a “reasonable interpretation of the principles articulated in the Guidelines” based upon the record in that case.⁷⁰ However, it is well-settled that an agency in the Board’s position is at liberty to change its interpretation of its own policies or guidelines to another, more reasonable construction – even one which represents a new or different response to the subject at issue – where, as here, it first provides an opportunity for public comment. *See Paralyzed Veterans of America v. D.C. Arena L.P.*, 117 F. 3d 579, 586 (D.C. Cir. 1997). Also, the Court’s ruling in *PPL Montana* was directed solely to the Board’s *threshold*

⁶⁸ 49 U.S.C. § 10709(c)(1).

⁶⁹ 49 U.S.C. § 10707(b) and (c).

⁷⁰ No. 04-1369, *PPL Montana, LLC v. Surface Transp. Bd.* (D.C. Cir.), February 17, 2006, slip op. at 8.

cross-subsidy test. Nothing in the opinion can be read as approving the segmented SAC approach discussed in *Otter Tail*; if anything, the Court assumed the opposite:

It is of no moment that a full-fledged SAC analysis might normally proceed by comparing the costs and revenues of the SARR as a whole; the Board's cross-subsidy test acts as a *threshold* inquiry, reasonably allowing the Board to halt the SAC analysis in its tracks.

No. 04-1389, *PPL Montana, LLC*, slip op-at 10 (emphasis in original, footnote omitted).

C. The Cross-Subsidy Test Should Be Eliminated or Reformed

The *PPL Montana* threshold cross-subsidy test is deeply flawed, and its *Otter Tail* variant completely lacking in legal support or value for any purpose other than artificially reducing or eliminating rate relief for captive shippers. The Coal Shippers submit that the Board should drop them altogether from rate analyses conducted under the *Guidelines*.

To the extent that a cross-subsidy test could have any legitimate value in the context of a SAC analysis, it would be as a threshold determinant whether it would be economically rational for a SARR to include the complainant's traffic given the costs and revenues associated with handling it and the composition of the remainder of the SARR traffic group. This is the only test that arguably could be applied by the Board to a real-world railroad. To serve this purpose, the Board's test would have to be revised to inquire only whether the revenues available from the issue traffic would be sufficient to cover its directly variable or short-run marginal costs, and make some contribution to the

joint and common costs of the SARR.⁷¹ See *Guidelines*, 1 I.C.C. 2d at 904. So long as these criteria are met, there can be no impermissible cross-subsidy.

IV. THE INDEXING OF SARR OPERATING EXPENSES

The *Decision* also address the subject of indexing SARR operating expenses. Specifically, the Board proposes to modify its current approach to the indexing of SARR operating expenses in order to consider productivity in projecting future SARR expenses. The Coal Shippers strongly support the Board's proposal to allow productivity to be considered in forecasting SARR operating expenses, but respectfully submit that the Board's proposal does not go far enough to eliminate the illogical and unsupported disparity between the manner in which the Board indexes operating expenses and the manner in which the Board forecasts SARR revenues.

Even beyond the inequity associated with this disparity, the Coal Shippers submit that the Board's proposal suffers from two principal defects: first, the Board is wrong to assume that a SARR will not enjoy the benefit of any productivity enhancements (*i.e.*, 0% RCAF-A) in its first year of operation; and second, the Board is wrong to assume that the SARR's ability to benefit from productivity enhancements in a manner that is comparable to the rail industry as a whole (*i.e.*, 100% RCAF-A) will only be achieved after the twentieth year of the SARR's operations. The Coal Shippers

⁷¹ Obviously, this would entail a requirement that the issue traffic share some facilities with other members of the SARR traffic group.

request that the Board modify each of these assumptions such that the Board would index SARR operating expenses in a manner that would begin with 50% of the RCAF-U and 50% of the RCAF-A in year 1, and would increase the share of the RCAF-A utilized in a linear manner until, after year 10, the Board indexes SARR operating expenses using 100% of the RCAF-A.

The Coal Shippers' response to the Board's proposal is supported by both the attached Joint Statement of Drs. Douglas W. Caves, B. Kelly Eakin, Mark E. Meitzen, and Philip E. Schoech, each of Christensen Associates, and the Statement of Dr. William J. Brennan, of Transportation Economics, Inc.

A. Background

As the Board recounts in the *Decision*, the issue of the appropriate means of indexing SARR operating expenses has been contested in all recent SAC cases, with the carriers advocating the use of the RCAF unadjusted for productivity ("RCAF-U"), and shippers advocating the use of the RCAF adjusted for productivity ("RCAF-A") or various blends of the RCAF-A and RCAF-U. *Decision* at 20. Faced with a choice between the two alternatives, the Board has routinely chosen the RCAF-U, notwithstanding its stated recognition that the RCAF-U is an improper result. *Id.*; *see, e.g., Xcel* at 33 ("It is difficult to imagine that the [SARR] would not realize some productivity improvements over the course of the SAC analysis period."); *CP&L*, *Decision* served December 23, 2003 at 27 (a SARR should "realize productivity improvements over the course of the SAC analysis period").

On the basis of that recognition, the Board suggests in the *Decision* that productivity should be considered when indexing SARR operating expenses:

. . . the index used to project the SARR's operating expenses should reflect some anticipated productivity improvements for the SARR. Even a SARR designed to take advantage of all of the most recent technologies should experience some productivity improvements over an extended time frame. All companies "learn by doing," achieving incremental productivity improvements. And the SARR would be able to take advantage of future technological improvements as they occur, just as the existing railroads will.

Id. at 20-21.

The approach advocated by the Board in the *Decision* would utilize a "hybrid" of the two indices, starting with the RCAF-U and phasing in the productivity gains projected in the RCAF-A incrementally over twenty years, with the blend of the two indices switching over in 5% increments each year until after year 20, the operating expenses of the SARR would mirror the productivity gains forecast for the railroad industry through the RCAF-A. The Coal Shippers strongly agree that the Board's current approach to indexing operating expenses is improper. It is, of course, fundamentally unfair to assume that stand-alone operating expenses necessarily will increase in a more dramatic fashion than stand-alone revenues. While the Coal Shippers are pleased that the Board has proposed to ameliorate this unfairness, the Coal Shippers respectfully submit that the Board's proposed approach is not consistent with reasonable expectations concerning a SARR's productivity.

B. The Stated Basis for the Board's Proposal

The Board's proposal regarding the indexing of operating expenses consists of two central points. First, the Board assumes that a SARR will not experience any of the typical productivity enhancements of the rail industry as a whole in its first year of operation. Second, the Board assumes that the SARR will gradually experience more and more of the rail industry's typical productivity gains, but that the SARR will only reach a level of comparability with the rail industry after twenty years. Under the Board's proposal to reduce the duration of the DCF model to ten years, this approach would limit the degree to which the SARR's expenses would reflect productivity enhancements. The *Decision* lacks any explanation of the Board's refusal to consider any productivity in Year 1 of the SARR's operations, and includes only a brief conclusion regarding the selection of the end of Year 20 as the point at which the SARR would receive the full benefit of the RCAF-A.

The net effect of the Board's proposal is that shippers presenting SAC cases would enjoy the benefit of very limited productivity assumptions in the indexing of SARR operating costs, but that the blend of the two indices will only reach 55% RCAF-U/45% RCAF-A in the final year of the discounted cash flow model. Thus, in nominal terms, the SARR will receive the benefit of less than 25% of the RCAF-A, since at the mid point of its proposed 10-year life, the straight-line phase-in of the RCAF-A will only have reached the 20% level. Given the impact of discounting on the latter years of the model's life, the actual benefit of the Board's proposal will be far below even a 20%

share of the RCAF-A. As the statements of Drs. Caves *et al.* and Dr. Brennan explain, this approach is not consistent with reasonable expectations concerning productivity gains that would likely be enjoyed by a SARR.

1. The Board is Wrong to Preclude Any Productivity Benefit for the SARR in Year 1

Implicit in the Board's formulation of a proposed method of indexing SARR operating expenses is the finding that a SARR will not benefit from any productivity enhancements during its first year of operations and very little in the next several years. As indicated *supra*, the Board's *Decision* lacks any explanation of the basis for this assumption. *Decision* at 20 ("Because the SARR is designed to be an efficient replacement for the railroad, it would not be able to realize the same productivity gains as the rest of the industry, particularly in the early years of the DCF. For example, railroads realize productivity gains in locomotives as they replace old locomotives with newer technologies. The SARR would not experience those same productivity gains in the short term because it would begin its operations with all new locomotives."). Although this language purports to demonstrate that a SARR should not be entitled to receive a full 100% of the RCAF-A in the first year of its operations, the Board fails to present any justification for its conclusion that the SARR would not benefit from any productivity enhancements in Year 1.

There are three principal reasons why it is wrong to assume that a SARR would not enjoy any productivity enhancements at the outset of its operations: *first*, not

all productivity enhancements result from the replacement of assets; *second*, even with regard to productivity enhancements that do result from the replacement of assets, there is ample reason to conclude that a SARR would elect to upgrade its locomotive or railcar fleets if it determines that such an upgrade would improve its efficiency and lower its costs; and *third*, there are a number of critical respects in which a SARR – in its first year of operations – would be better situated than the industry as a whole to improve its operations.

**a. Productivity Enhancements that
are Unrelated to Asset Replacement**

Although a SARR may begin service with a newly acquired fleet of locomotives and railcars, there nevertheless are a number of areas in which productivity gains that are unrelated to asset replacement will be available to the SARR even in its first year of operations. Such enhancements would generally include efforts to apply modern information technology to the process of monitoring train operations (to improve efficiency) and improving maintenance practice (to prevent unplanned locomotive or track maintenance). For example, Class I carriers are currently evaluating the use of Positive Train Control systems that will increase train speeds and improve system usage by updating the locations of individual trains faster than conventional signaling control systems. *See, e.g., Argus Coal Transportation*, “BNSF hopes technology boosts capacity 15-20 pct” (April 20, 2006) (“Automated train control systems could boost rail network capacity 15-20 pct by reducing distances between trains, according to BNSF Chairman

and Chief Executive Matt Rose.”); *id.* (“Rose’s comments are the first public acknowledgment by a Class I railroad that train control technologies could net additional capacity for shippers.”).⁷²

The most extensive shipper-sponsored analysis of productivity that a SARR reasonably can be expected to experience appears in *Western Fuels*, which remains pending before the Board. Therein, Western Fuels documented the many different sources of productivity available to a SARR. *See* Docket No. 42088, April 19, 2005, at III-G-4 to 21; Docket No. 42088, Complainants’ Rebuttal Narrative (Public Version), dated September 30, 2005 at III-G-7 to 35.

In addition to explaining the productivity enhancements that a SARR may enjoy through the use of more efficient locomotives and railcars, WFA also discussed a number of railroad productivity gains that are unrelated to asset replacement, and therefore would be available to a SARR even in its first year of operations:

More Efficient Train Sizes. The LRR trains are currently sized as BNSF-sizes them today. However, the history of unit train operations in the west is that, over time, unit train sizes increase. The WRPI experience, discussed above, illustrates this trend. Railroads are now actively studying and testing ways to increase coal train sizes to maximize productivity. For example, UP is now testing 200 to 250 car unit trains on its system. The CN has also publically announced plans to increase many of its train sizes to 150 cars. The LRR, as an efficient originator of PRB coals,

⁷² Notably, the same article suggests that “[i]f the cost-benefit ratio for capacity is good, it is in their interest not to tell shippers. Inexpensive productivity gains would dull the railroads’ rallying cry that higher rates are required for capacity.” *Id.*

will also increase its train sizes when it is economically and technically feasible to do so.

More Efficient Train Operating Systems. The rail industry is studying ways to improve operating procedures, including the following:

- Research and testing are now on-going on new management systems that will dynamically track locomotive performance and alert users to impending maintenance problems, leading to decrease in costly unplanned locomotive maintenance.
- New Positive Train Control systems are being tested that will increase train speeds and improve system usage by updating the locations faster than conventional signaling control systems.
- Research is on-going over use of GPS tracking systems that assist railroads in running more trains over particular routes, thus increasing system efficiency.

More Efficient Maintenance Procedures. Railroads are studying ways to make the maintenance programs more efficient. According to industry reports:

- The AAR is developing Rail Profile Maintenance Software that characterizes interaction between railcars and rail in a manner that allows the user to identify higher stress areas for preventative maintenance;
- The AAR is developing performance-based track geometry inspection procedures that will lead to new real-time inspection methods and improved preventive maintenance activities.

- The AAR is developing new rail flaw and broken rail inspection systems that will streamline inspections and more quickly pinpoint defects.

Increased Labor Productivity. Real-world railroads are constantly instructing their employees to take actions that increase rail productivity. The LRR will be no different. LRR employees, like those of any successful railroad, will find ways to increase system productivity. For example, the LRR will have substantial over capacity – particularly in its early years of operation – because it is configured to handle its peak year (2024) traffic volume – volume that is 7.0% more than its 2005 traffic volume. The LRR’s train cycle times are also modeled to meet peak year demands. Enterprising engineers, crews and dispatchers are likely to find many ways to increase system velocity (and reduce system unit costs) in the many years prior to the 2024 peak year.

Similarly, LRR employees – like the employees at any railroad – should find a myriad of other ways to run their railroad more efficiently. By its nature, this type of productivity is largely a trial-and-error and learn-by-doing process. Also, the number of employees that the LRR may need over time is likely to decrease as technology advances. For example, the industry is actively studying engineer-only operations. The industry is also looking at a remote control trains. The LRR is an ideal candidate for both options since it is located in a rural area and operates only unit trains.

Traffic-Based Efficiencies. In Xcel I, the Board observed that its DCF model “would reflect some modest productivity improvements (lower costs per ton) over time because it holds constant several cost components ... even as tonnages increase.” Id. at 34. However, the Board’s DCF model does not hold constant most consequential operating costs (e.g., train operating personnel costs, and locomotive-related costs). Instead, these costs move-up in lock-step with SARR tonnage increases.

Railroads experience productivity growth when changes in outputs (e.g., ton-miles) increase faster than changes in inputs (e.g., labor or equipment). The LRR should experience similar traffic-based productivity improvements.

Information Technology ("IT") System Improvements. In WPL I, the STB observed that IT systems change rapidly, with one generation of IT systems being replaced by better, more efficient next generation systems. See id. at 106. The LRR, like the SARR in WPL I, can and will replace its current IT system, when it makes economic sense to do so, with even more efficient systems, as these systems become available.

- Track-Related Efficiencies. The railroad industry is continually studying ways to reduce stress on, and increase the operating life of, track and roadbed infrastructure. Published reports indicate the AAR is currently studying:

- Use of new top of the rail lubricators and friction control systems that ease track stress (and increase locomotive fuel efficiencies);
- Use of new wayside detection systems that identify poorly performing rolling equipment that could alter track structure and increase wear and tear of track structure;
- Improvements in welds used in continuously welded rail in tracks;
- New synthetic tie materials that will provide increased strength and longer life;
- Improved methods to treat wood ties which increase tie life;

- Improved bridge joints to decrease degradation of bridge components.

Docket No. 42088, Complainants' Opening Narrative (Public Version), April 19, 2005, at III-G-9 to 14 (footnotes omitted).

Notably, the U.S. House Subcommittee on Railroads held a hearing on Wednesday April 26, 2006 to address possible solutions to the current railroad capacity shortage. At that hearing, representatives of the railroad industry described a number of new productivity enhancements for the industry that are unrelated to the replacement of locomotives and railcars, and that are entirely consistent with the productivity enhancements described by Western Fuels in its evidence. In this regard, Mr. Edward R. Hamberger, President & Chief Executive Officer of the Association of American Railroads explained that freight railroads "are rapidly expanding their use of [computers and information technology] to improve overall efficiency and the fluidity of their operations, thereby adding capacity without adding infrastructure." Statement of Edward R. Hamberger before the U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee on Railroads, Hearing on Railroad Capacity (April 26, 2006), at 15. Mr. Hamberger identified a number of specific respects in which the railroads are using technological advancements (in a manner unrelated to asset replacement) to improve their operations:

Many of the dramatic technological advancements that have increased railroad efficiency (and safety) by helping to protect freight cars, locomotives, track, and cargo before damage, costly repairs, traffic holdups, and derailments occur

(sic) have been developed and/or refined at the Transportation Technology Center Inc. (TTCI) in Pueblo, Colorado, a wholly-owned subsidiary of the AAR that is generally considered to be the finest rail research facility in the world. Just a few of these technological advancements include:

- *Wayside detectors* that identify defects on passing rail cars – including overheated bearings and wheels, dragging hoses, deteriorating bearings, cracked axles and wheels, and excessively high and wide loads – before structural failure or other damage occurs. Some of the newest wayside detectors being developed use *machine vision* to perform higher-accuracy inspections through the use of digitized images, which are then analyzed using computer algorithms
- *Trackside acoustic detector systems* use “acoustic signatures” to evaluate the sound of internal bearings to identify those likely to fail in the near term. These systems supplement or replace existing systems that identify bearings already in the process of failing by measuring the heat they generate.
- *Advanced track geometry cars* use sophisticated electronic and optical instruments to inspect track conditions, including alignment, gauge, and curvature. TTCI is developing an on-board computer system that provides an even more sophisticated analysis capability of track geometry, predicting the response of freight cars to track geometry deviations. This information will better enable railroads to determine track maintenance needs and help improve the safety of day-to-day rail operations.
- One of the most straightforward ways to add capacity to a rail network is to pack more freight on each train, and railroads have been doing that ever more aggressively. In 1995, for example, the average coal car carried on a Class I railroad held just under 103 tons of coal. By 2005 that figure had risen to nearly 112 tons, a 9 percent increase. But heavier loads are far more damaging to track

structures than lighter loads. Researchers at TTCI and elsewhere are engaged in efforts related to this *heavy-axle load* (HAL) service. HAL-related work is underway on rail steels, insulated joints, bridges, welding, maintenance practices, and more.

Id. at 14-15. Mr. Hamberger also commented upon the use of “advanced computer modeling software” in a variety of rail applications, from “automating rail grinding schedules[] and improving customer demand forecasting to optimizing yard operations.”

Id. at 15. Finally, Mr. Hamberger explained that railroads are working with their suppliers to “design, implement, and improve innovative computerized ‘trip planning’ systems” which will:

. . . automatically incorporate and analyze a mix of ever-changing variables (*e.g.*, crew and locomotive availability, terminal congestion, the different priority status of loads of freight, track conditions, maintenance plans, weather, etc.) to optimize how and when cars are assembled to form trains and when those trains depart.

Id. at 15-16.

Other speakers at the April 26, 2006 Hearing echoed Mr. Hamberger’s comments regarding sources of rail productivity. For example, the Federal Railroad Administrator Joseph H. Boardman observed that:

New terminals and expanded rights-of-way are not the only means to increase rail freight capacity. Investment in new technology also holds significant promise. Two of the most important opportunities available today are Positive Train Control (PTC) and Electronically Controlled Pneumatic (ECP) brakes. The industry and FRA have researched each extensively.

Statement of the Honorable Joseph H. Boardman, Federal Railroad Administrator before the Subcommittee on Railroads, Committee on Transportation and Infrastructure, U.S. House of Representatives (April 26, 2006), at 7. Finally, in his statement prepared for the April 26, 2006 Hearing, BNSF's Mr. Matthew K. Rose again addressed the impact of new technologies on railroad productivity:

BNSF has increased the number of tons per coal train by about 2,500 tons since 1995 by loading more tons in every car. BNSF is also moving forward with other productivity measures such as better top-off systems and grooming, and precision loading

Id. at 21.

In short, there are many currently anticipated productivity improvements that are independent of any locomotive or railcar replacement, and therefore – even under the Board's hypothesis that a SARR cannot benefit initially from productivity enhancements that are related to asset replacement – would be equally available to a SARR in its first year of operations.

b. A SARR Will Replace Its Assets at Any Time Necessary to Improve Its Efficiency

In addition, even a rail carrier with new locomotives will utilize more efficient locomotives as they become available if it perceives that a net cost savings can be realized. The fact that a SARR's locomotives are new will not prevent it from acquiring newer technology if its current fleet becomes obsolete as compared with newer models. A railroad (be it a SARR or a modern Class I carrier) would be expected to opt

for the more productive asset whenever it determines that positive economic value would be realized as a result. If that point is reached before the end of the accounting life of the asset being replaced, that asset can and would be sold, salvaged, or shifted to an alternate use (*e.g.*, a road locomotive might be switched to yard or helper service). There is no reason to believe that a SARR, which starts its operations with new assets, would behave any differently than a Class I carrier with respect to opportunities to realize asset-based productivity gains whenever economic value would be added and profits enhanced, regardless of whether the asset being replaced is at the end of its useful or accounting life.

To the extent that there are properly functioning secondary markets for railroad assets, the ability of a railroad, whether it be a SARR or an incumbent, to change over to newer, more efficient technologies will not be impaired by the remaining accounting life of the assets. Similarly, if a railroad's assets are leased, the process of "trading up" to newer, more efficient technologies will not be constrained by the accounting age or the remaining life of the asset.

c. A SARR Enjoys Certain Productivity Advantages Over Real-World Railroads

Finally, it is unreasonable for the Board to assume that a SARR will not enjoy any productivity enhancements during its first year of operations because there are a number of respects in which a SARR holds advantages over real-world railroads in terms of the ability to improve the efficiency of its operations. For example, unlike a

real-world railroad, SARRs typically have substantial over-capacity because they necessarily are configured to handle their peak year traffic volumes for the life of the DCF model. It is reasonable to assume that such excess capacity would give a SARR the flexibility to improve its operations relative to real-world carriers that do not build their systems to meet traffic levels that they know they will not achieve for twenty (or ten) years. In addition, a SARR's train cycle times are also modeled to meet peak year demands. Enterprising engineers, crews and dispatchers are likely to find many ways to increase system velocity (and reduce system unit costs) in the many years prior to the SARR's individual peak year.

* * *

In their accompanying Joint Statement, Drs. Douglas W. Caves, B. Kelly Eakin, Mark E. Meitzen, and Philip E. Schoech demonstrate the error in the Board's assumption that the SARR would not enjoy any productivity benefit in its first year of operations, and explain that a 50%/50% split between the RCAF-A and the RCAF-U constitutes an appropriate starting point for the indexing of operating costs. In support of their conclusion, they suggest that:

. . . productivity growth comes from a variety of sources, many of which are not constrained by investment in new assets. In addition, productivity gains related to deregulation of the railroads appear to have been largely exhausted. This fact eliminates one of the key differences between an efficient SARR and incumbent railroads. Consequently, recent and future productivity gains in the railroad industry will be increasingly related to events affecting the entire economy, such as the continuing computer and communications

revolution. Many of these gains are achieved through a “learning by doing” process. The SARR will be able to realize these productivity gains, just as will the railroad industry.

Id. at 15.

Moreover, in his accompanying Statement, Dr. William Brennan of Transportation Economics, Inc., also addresses the subject of the Board’s “zero productivity” assumption for a SARR’s first year of operations, and Dr. Brennan explains that the Board’s approach is improper. For the sake of argument, Dr. Brennan accepts the Board’s assumption that a SARR would not immediately enjoy the benefit of any productivity related to asset replacement, but demonstrates that the Board still would have erred in suggesting that the proper cost index for the SARR should be the RCAF-U. On the basis of his analysis of the relatively small shares of Class I operating expenses associated with the categories the Board has deemed to be unavailable as sources of short-term productivity gains for SARR’s, Dr. Brennan shows that the Board has erred in extending its assumption regarding the productivity benefits associated with new assets to the conclusion that 100% of the RCAF-U should be used to index Year 1 SARR operating expenses.

The Coal Shippers submit that the proper method for indexing SARR operating expenses at the outset of the DCF model is a combination of 50% of the RCAF-U and 50% of the RCAF-A. While the Coal Shippers believe that this result is conservative, since a case for greater productivity enhancements by the SARR could be

made, the Coal Shippers submit that this result is considerably more consistent with reasonable assumptions concerning a SARR's productivity than the Board's unsupported proposal to exclude all productivity benefits from the initial indexing of a SARR's operating expenses.

2. The Board is Wrong to Assume That Comparability Between the SARR and the Rail Industry Will Not Be Achieved Until After Year 20

The Board's second central assumption with regard to productivity likewise lacks any meaningful support in the *Decision*. Specifically, in explaining the basis for its proposal to allow a SARR to achieve full productivity levels only after year 20, the Board states that it is "reasonable to assume that the hypothetical SARR and the railroad industry would be similarly situated in 20 years." *Id.* at 21. According to the Board, "[t]he SARR would, by year 20, be using the same types of locomotives and railcars, with a comparable mix of depreciated and new equipment." *Id.* The Board adds that:

... as the railroad industry continues to shed any excess or inefficient infrastructure, it is reasonable to assume that within the next 20 years the infrastructure utilization of the rail industry will catch up with that of the SARR. A 20-year phasing-in of RCAF-A therefore appears to be a fair compromise between the opposite positions of the railroads and shippers.

Id.

Notably, the Board's *Decision* fails to present any specific support for the twenty-year time period selected for the phase-in period. Instead, the Board simply observes that the "SARR would, *by year 20*, be using the same types of locomotives and

railcars,” and that “it is reasonable to assume that *within* the next 20 years the infrastructure utilization of the rail industry will catch up with that of the SARR.” (Emphasis added). Significantly, these two stated bases for the Board’s proposed methodology each merely reflect observations that at the end of the 20-year period, a SARR will be comparable to the rail industry as a whole; but neither observation demonstrates that it will take 20 years to reach that point and neither observation offers empirical support or actual findings as to important factual matters, such as locomotive or rail car replacement rates, or the share of overall productivity gains in the industry that supposedly would be unavailable to the SARR in early years. In other words, the Board’s Decision fails to present any justification for the Board’s choice of 20 years as opposed to 19 years, 10 years, or 3 years and it fails to set forth any basis for its implicit conclusion that the SARR’s status as a new carrier would prohibit it from experiencing any productivity enhancements whatsoever at the inception of the DCF model.

The Coal Shippers’ experts with regard to productivity strongly support the view that the Board’s assumption that the convergence point between the SARR’s productivity and the incumbent’s productivity will not occur until after year 20 is unreasonable. Drs. Caves, Eakin, Meitzen, and Schoech conclude that:

... to the extent SARR’s are assumed to start out with lower productivity gains than the industry average, it should not take them 20 years to catch up to the average.

V.S. Caves, et al. at 9; *id.* at 8 (noting that evidence submitted by AEP Texas North Company in *Docket No. 41191 (Sub-No. 1)* demonstrated that the average age of Class I railroad assets in service (as of 2002) was only seven years.).

Similarly, Dr. Brennan explains in his statement that the Board's twenty-year assumption takes far too long because, *inter alia*, 20 years "represents at least four complete information technology cycles." V.S. Brennan at 14. According to Dr. Brennan, the Board's approach "does not reflect how quickly change is occurring in the real world, both from a political and commercial standpoint, or how much pressure exists on all firms to innovate and adapt." *Id.*

* * *

For the foregoing reasons, the Coal Shippers respectfully submit that the Board's approach to indexing SARR operating expenses is deficient in its two principal assumptions (*i.e.*, the absence of any productivity in year 1, and the need for a full 20 years to achieve comparability between the SARR and the real-world carriers). A far more reasonable, yet conservative, approach would start the indexing of SARR operating costs based on a 50%/50% blend of the RCAF-A and RCAF-U indices, and steadily increase the share of the RCAF-A utilized until after year 10 at which point only the RCAF-A would be utilized to index operating expenses for the balance of the SARR's life.

V. MOVEMENT-SPECIFIC VARIABLE COST ADJUSTMENTS

In the *Decision*, the Board proposes to forbid any movement-specific adjustments to URCS-based variable cost determinations. *Decision* at 23 (“Although it has been the longstanding practice of this agency to permit such adjustments, they do not appear to serve a useful public purpose for a variety of reasons.”). The Coal Shippers oppose this proposal.

Movement-specific costs long have been recognized as appropriate in cases involving high-volume, repetitive movement. As the Board has observed:

It is well established practice to allow movement-specific cost adjustments in rate cases for purposes of determining whether the 180% jurisdictional floor is exceeded. *E.g.*, *West Tex. Util. Co. v. Burlington N. R.R.*, No. 41191 (STB served May 3, 1996, slip op. at 75-88. Such adjustments – to reflect the actual cars used, actual lading weights, and actual train equipment, crew, and operations involved – are possible and appropriate where such information is known and differs from the carrier’s system average data. Most such movement-specific adjustments are more likely to arise with unit-train traffic (because those train operations are more discrete and dissimilar from the carrier’s general operations)

Ex Parte No. 347 (Sub-No. 2), *Rate Guidelines – Non-Coal Proceedings* (Decision served Dec. 31, 1996), at 28 n.104, *pet. for review dismissed sub nom. Association of American R.R.’s v. STB*, 146 F.3d 942 (D.C. Cir. 1998). Similarly, in *Rules to Govern the Assembling and Presenting of Cost Evidence*, 337 I.C.C. 298, 304 (1970), the ICC suggested that “[s]pecific cost data relating to the particular traffic and operations of the individual carriers should be developed, in preference to, and as being more reliable and

possessing greater probative value than, general average costs covering the overall systemwide operations of a carrier, a group of carriers, or all carriers in a territory.” *Id.* at 305.

Over the years, the ICC and now the Board repeatedly have held that adjustments are called for to reflect the economies and efficiencies of unit train service, and are preferable to system-average costs. *See, e.g., TMPA* at 10, 41 (“Because a carrier’s system-wide average costs are not necessarily representative of the cost of providing a particular service, movement-specific adjustments are sometimes introduced into evidence to better reflect the variable costs attributable to providing that service.”); *CP&L* at 114 (same); *Wisconsin Power & Light* at 38-39 (same); *FMC* at 48 (same); *West Texas Utilities*, 1 S.T.B. at 717; *San Antonio, Texas v. Burlington N. R.R.*, 1 I.C.C.2d 561, 569 (1986) (“*San Antonio, Texas*”) (“San Antonio’s calculations were based on the railroads’ actual data, whereas the defendant railroads, in several areas, persisted in relying on system averages. Because route-specific data is more accurate and reliable, we have found San Antonio’s evidence to be the best evidence of record in these areas.”).

The Board’s *Decision* proposes to reverse that long history, offering seven general reasons for eliminating movement-specific adjustments to the URCS costing model:

- First, railroads do not consistently keep certain types of information needed for movement-specific adjustments, and this imbalance risks “biasing” the result of the Board’s jurisdictional inquiry;

- Second, adjustments to URCS may not provide more reliable results than using system-average expenses because of the impact of variability percentages;
- Third, piecemeal or incomplete adjustments to URCS are suspect;
- Fourth, the analysis of evidence regarding movement-specific adjustments to URCS is time-consuming;
- Fifth, the possibility of movement-specific adjustments frustrates Congress' plan to create a quick and easy-to-determine regulatory safe harbor;
- Sixth, the URCS program already tailors the variable cost calculation to the movement at issue through inputs related to operating characteristics; and
- Seventh, the elimination of movement-specific variable cost adjustments would remove "substantial uncertainty in the current rail adjudication process."

Decision at 23-27.

While it is undoubtedly correct that maximum rate reasonableness litigation before the Board is a time-consuming and expensive endeavor, the Coal Shippers respectfully submit that the Board's proposal to eliminate movement-specific variable cost adjustments is misdirected. Contrary to the assumption on which the Board apparently bases its proposal, movement-specific cost adjustments are not the driving factor behind the expense of maximum rate cases, and they are not the cause of the substantial uncertainty associated with the outcome of such cases. The current application of the SAC constraint is responsible for those difficulties.

As the Board is aware, recent SAC cases have yielded results that either found the challenged rates not to exceed a reasonable maximum, or found that rates should be prescribed at the SAC level. Often, these decisions involved challenged rates that were vastly in excess of the Board's variable cost-based jurisdictional threshold. In such a regulatory climate, rail carriers will have little incentive to seek a "regulatory safe harbor" at the jurisdictional threshold level, whether adjusted or unadjusted. Instead, the railroads will have an incentive to price their services at the maximum level that they believe they can defend under the SAC constraint.

The elimination of movement-specific cost adjustments for variable cost purposes will not expedite SAC cases,⁷³ and will not give parties seeking to negotiate the terms of a rail transportation contract any better idea of the SAC levels that – in the recent past – have proven to be the determinative factor in maximum rate reasonableness cases. The principal effect of eliminating adjustments will be to raise the jurisdictional threshold rate level and rate prescription floor, to the railroads' benefit and coal shippers' detriment.

The Coal Shippers will address each of the Board's seven justifications in turn.

⁷³ Moreover, the schedule in stand-alone cost cases contemplates the simultaneous submission of stand-alone cost and variable cost evidence. The Board's refusal to consider movement-specific adjustments to URCS cost levels will not expedite rate case schedules.

A. The Imbalance in Railroad Record-Keeping

The Board first suggests that the elimination of movement-specific cost adjustments is warranted because different railroads do not keep the same types of information that shippers have relied upon for movement-specific adjustments, and that this lack of consistency in record-keeping practices could bias the result of the Board's jurisdictional threshold inquiry in favor of those carriers who elect not to maintain information needed for variable cost purposes. The Coal Shippers submit that to the extent this problem actually exists – which is questionable – the Board's proposed solution is far worse than the problem, and could be resolved in far more equitable ways. The Board has proposed that since *some* carriers may not maintain *some* information, the jurisdictional threshold analysis should be biased in favor of *all* defendant carriers. That is inequitable and manifestly improper.

Much of the data utilized for variable cost determinations is retained by rail carriers for business purposes, and therefore continues to be available for use by complaining shippers. However, if a given carrier does not maintain data historically used to calculate a particular movement-specific cost adjustment, the proper solution would be for the Board to evaluate the shipper's proposed cost adjustments with respect to that issue in a more deferential manner, and accept reasonable estimates drawn from the best data sources available. It is not appropriate to default to the counter-intuitive conclusion that the railroad's data retention changes have made its coal operations less efficient and higher in cost, which is the practical result of a fall-back to system averages.

Another potential solution to this perceived “problem” of a biased result between carriers would be to permit discovery into internal management cost data in situations in which a given defendant claims that it does not maintain certain requested data for regulatory purposes. Rather than burdening shippers in all rate cases, this result would be far more equitable because it would benefit (and, therefore, provide incentives to) carriers that elect to maintain data required for STB proceedings, and it would only burden those carriers that refuse to keep the necessary records.

The Coal Shippers note that it is ironic that at the same time that the Board claims in this proceeding that it cannot order carriers to maintain information needed to make movement-specific cost adjustments (*Decision* at 23), it simultaneously has requested comments in Ex Parte No. 661, *Rail Fuel Surcharges* (Decision served March 24, 2006) on whether and how rail carrier reporting requirements “should be adjusted to provide rail customers with better information on a carrier’s fuel costs and the revenues collected through fuel surcharges.” *Id.* at 2 (“To carry out its various statutory responsibilities, the Board requires railroads to collect and submit to the Board extensive cost and revenue information 49 CFR parts 1200-1280.”). If the Board believes that the public interest would be served by requiring carriers to maintain and provide additional cost information related to fuel surcharges (and the Coal Shippers agree with the Board in this respect), then the Board likewise should recognize that the public interest would be served by requiring carriers to maintain and provide additional information in other

important cost areas for variable cost purposes. *See also* Docket No. 42038, *Minnesota Power, Inc. v. Duluth, Missabe and Iron Range Ry.*, Decision served March 6, 2000.

Finally, the Board might resolve its “record-keeping” concern by revisiting its policy with respect to so-called “special studies.” Often, a carrier will respond to variable cost-related discovery requests by indicating that it does not maintain the subject data in the requested form, though it is apparent that the data is retained in some other, disaggregated form. A request that it be produced in report form for purposes of the litigation then is met with an objection that a “special study” is being sought. In many cases, the “study” is simply a report of the same ilk that routinely might be requested by railroad management. In such a case, the Board could direct the defendant to generate the requested data.

B. The Impact of Variability Percentages

The Board suggests that movement-specific adjustments to URCS may not provide more reliable results than system-average expenses because parties advocating such adjustments apply the “system-average variability parameter to calculate the proposed movement-specific adjustment.” *Decision* at 24. According to the Board, this approach is improper because “the variability parameter will increase when traffic increases on a network . . . [b]ut such adjustments to the variability percentage are not made when parties submit proposed movement-specific adjustments.” *Id.*

The Coal Shippers submit that this objection is not well-founded, and does not provide a basis for excluding all future movement-specific cost adjustments. As

described in the accompanying verified statement of Mr. Joseph Plaistow, the Board's stated concern regarding variability percentages relies entirely upon a density-related variability theory that applies to one cost component only – road property investment – and is not even a system average variability factor. *See* V.S. Plasitow at 2-4.

Additionally, the issue raised in this regard in the *Decision* is one which was raised during the development of URCS itself, and resolved in favor of the percentage that the Board now highlights. *Id.* at 5-6.

C. Piecemeal Adjustments

Next, the Board asserts that piecemeal or incomplete adjustments to URCS are suspect because “selective replacement of system-average costs with movement-specific costs may bias the entire analysis, rendering the modified URCS output unreliable.” *Decision* at 25-26. The Board's concern in this respect is entirely overstated.

It is entirely reasonable to conclude that parties to rate reasonableness proceedings are fully capable of determining which aspects of the URCS cost analysis warrant movement-specific adjustments. Both shippers and carriers will invest their resources in efforts to obtain movement-specific adjustments that are most consequential to the outcome of the case. As a result, any URCS cost elements that are not the focus of movement-specific adjustments rightly may be regarded as inconsequential to the movement at issue. Likewise, if one party suggests an adjustment and the other party believes that the adjustment neglects other elements that would be necessary to avoid an “incomplete” result, that party is free to point out the defect in the opposing party's

evidence. Given the fact that variable cost discovery is submitted by each party in each of the three evidentiary rounds, ample opportunity exists to rectify any omissions of the nature identified by the Board in the *Decision*.

In light of the foregoing, the Coal Shippers submit that the Board's concerns in this regard have the effect of making a "perfect" variable cost analysis the enemy of a "good" variable cost analysis. Even assuming that the Board is correct that "corresponding" URCS adjustments have not been made in all past Board decisions that have endorsed movement-specific cost adjustments, that feature is insufficient to warrant a reversal of the Board's long-standing policy.

D. Time-Consuming Analysis on Non-Core Issues

The Board suggests that its review of movement-specific variable cost evidence is time-consuming and diverts the Board's attention from the "*core issue* in these cases – whether the challenged rate is unreasonable." *Decision* at 26 (emphasis added). It is remarkable that fewer than five years after the Board last prescribed a maximum reasonable rate at the level of the jurisdictional threshold (*Wisconsin Power & Light*), the Board now proposes to preclude any movement-specific cost adjustments because the analysis of proposed adjustments takes time away from the "core" issue in rate reasonableness cases.

The Coal Shippers respectfully submit that the jurisdictional threshold historically has been a "core" issue in rate reasonableness proceedings, and if it is not so perceived by the agency at this time, that perception reflects an improper view that

maximum reasonable rates at the SAC level always will exceed the jurisdictional threshold. There is no reason to infer from the language of Title 49 that Congress intended rates to be prescribed only at rate levels that substantially exceed the Board's jurisdictional threshold. Quite to the contrary, the significant effort associated with the ultimate determination of the 180% threshold strongly suggests that Congress and interested members of the rail and shipping communities expected the jurisdictional threshold to be the operative limit on rate setting in at least some instances.

Maximum rate reasonableness cases hold significant financial consequences for the rail shipping public. While the Coal Shippers are fully aware of the fact that the Board must expend time and effort to resolve the many issues in the cases, including issues associated with movement-specific cost adjustments, the public interest in the economic value at stake in each litigated case (and each rail negotiation that is impacted by the results of a given rate case) more than justifies this effort.

E. A Quick and Easy-to-Determine Regulatory Safe Harbor

The Board contends that in adopting the 180% R/VC limitation, Congress intended to create an administratively quick and easy-to-determine "regulatory safe harbor" for the railroads. *Decision* at 26. The Board adds that "[t]his goal is ill-served by allowing exhaustive discovery, volumes of evidence, significant consulting fees, and months of effort before parties can determine whether the Board has jurisdiction to consider the reasonableness of a rate." *Id.* The Board's rationale regarding this

regulatory safe harbor is difficult to harmonize with the actual processing of maximum rate cases.

Most cases decided in the modern rate case era have involved the submission of simultaneous evidence regarding SAC and the Board's jurisdictional threshold. It is only in the Board's principal decision on the merits of a case that the Board first addresses the subject of its jurisdiction. The schedule of that determination is not impacted in any respect by the parties' evidence regarding movement-specific adjustments to the URCS model.

In a number of recent cases, the defendant carriers have conceded that their challenged rates exceed the Board's jurisdictional threshold, and the carriers have used that fact affirmatively in a effort to rebut charges of gaming (*i.e.*, suggesting that the traffic at issue is particularly captive and should be forced to bear a substantially higher rate under principles of differential pricing). Even in those cases, the Board does not officially determine that it has "jurisdiction to consider the reasonableness of a rate" (*Decision* at 26) until a final decision on the merits.

Finally, the Board's arguments regarding the regulatory safe harbor are inconsistent with the Board's separately stated view that movement-specific adjustments are irrelevant because they do not have a significant impact on the ultimate variable cost determination. If in a given case movement-specific adjustments have little or no bearing on the outcome of the jurisdictional threshold determination, then the railroad seeking to

avail itself of the regulatory safe harbor need not concern itself with the possibility of minor variations related to the acceptance of movement-specific cost adjustments.

F. The Impact of Specific T&O Characteristics

The Board next argues that movement-specific adjustments are unnecessary because “the URCS program already tailors the variable cost calculation to the movement at issue.” *Decision* at 26. These traffic and operating characteristics do not reflect the full efficiencies of unit train coal service.⁷⁴ This conclusion is most evident from the fact that in each of the prior cases in which the Board or the ICC has accepted movement-specific cost adjustments, the agency modified an URCS calculation that already had the benefit of the traffic and operating characteristics of the issue movement. Thus, the overwhelming weight of the Board’s own precedent confirms that the use of basic traffic and operating characteristics provides only a limited tailoring of the URCS model to the subject movement.

G. The Removal of “Substantial Uncertainty” in the Current Process

Finally, the Board comments that “prohibiting movement-specific variable cost adjustments would eliminate substantial uncertainty in the current rail rate adjudication process” and that “the potential for either pre- or post-filing settlements would increase.” *Decision* at 27. Again, the Coal Shippers submit that this justification is misdirected. The principal factor creating uncertainty in maximum rate reasonableness

⁷⁴ For example, system average costing does not reflect issues unique to a coal movement, such as actual car costs, actual locomotive costs, specific crewing operations, joint facility operations and track ownership.

cases is the SAC threshold, not the potential for movement-specific adjustments to variable cost calculations. *See, e.g., Xcel*, Decision served January 19, 2005 at 19 (finding on reconsideration that “Xcel’s variable cost arguments would not affect the outcome of this proceeding and need not be addressed here.”).

Uncertainty exists in STB rate cases because the Board has shown a proclivity for modifying the rules applicable to SAC determinations in the midst of rate cases (as the instant inquiry abundantly confirms). And uncertainty exists because the Board – shortly after admonishing parties to stop submitting evidence challenging “settled” issues – modified its previously “settled” approaches (thus rewarding defendant carriers who ignored Board warnings about issues that had been settled in the favor of shippers). *Compare* Ex Parte No. 347 (Sub-No. 3), *General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, Decision served March 12, 2001, at 6 (“[T]he parties to SAC cases are cautioned not to attempt to relitigate issues that have been resolved in prior cases.”) (citing *FMC* at 74-77, which rejected WSAC in favor of SFGT for purposes of determining maintenance-of-way expenses), *with TMPA* at 10 n.8 (rejecting the use of the SFGT model as a substitute for system-average maintenance-of-way expenses). Meaningful uncertainty does not arise from the fact that shippers currently have the opportunity to argue that efficiencies associated with their high-volume, unit train coal movements should be reflected in the outcome of the Board’s variable cost analysis.

VI. STAND-ALONE COST ANALYSIS PERIOD

The STB uses a discounted cash flow ("DCF") analysis in SAC cases. The Board generally has described its DCF analysis as follows:

The DCF analysis compares the stream of revenues that would be generated by the [SARR] to the stream of costs that the [SARR] would incur, discounted to a common point in time. To do that, the DCF model computes and distributes the total cost of the [SARR] over the 20-year analysis period, thus determining the amount of revenues that would be needed by the [SARR] to cover its operating expenses, meet its tax obligations, recover its investment and obtain an adequate return on that investment.

Wisconsin Power & Light at 30.

For years, the parties and the Board have used a 20-year DCF period in SAC cases. The Board proposes to prescribe a 10-year DCF period in future cases. The Board asks for comments on its proposal to mandate a 10-year DCF period, and on whether electronic spreadsheets used in a 20-year DCF analysis would need to be modified if a 10-year DCF period was mandated.⁷⁵

Coal Shippers do not oppose the use of a 10-year DCF period to apply in future cases, so long as (i) Table E in the DCF model is appropriately modified and no other changes are made in the Board's current DCF procedures; (ii) the 10-year DCF

⁷⁵ The Board also emphasizes that a SARR could not be required to recover the full SARR capital investment "within that 10-year window." *Decision* at 31. Instead, the Board proposes that consistent with the current practice in connection with the 20-year DCF analysis, "we would continue to calculate a "terminal value" at the end of the shorter SAC analysis." *Id.*

period is not applied in pending cases; and (iii) provisions are added to ensure that a prescription can extend beyond the 10-year DCF period.

- Table E. As explained by Coal Shipper witness Thomas D. Crowley, Table E in the Board's DCF model contains an amortization schedule of assets purchased with debt capital. Currently, Table E amortizes debt over the DCF model life. If this practice it retained, and the DCF time period is shortened from 20 years to 10 years, the 10 year DCF model will produce higher stand-alone costs than a 20 year model.

There is a simple solution to this problem. The Board's DCF model should be modified so that, regardless of whether a 10-year or 20-year analysis period is utilized, the involved interest payments are amortized over the life of the asset, rather than the life of the model. As Mr. Crowley observes "amortizing the interest payments over the life of the asset is consistent with actual practice in the rail industry, as rail carriers do not base their financial decisions on the STB's 20-year time period, but rather the useful life of the assets they acquire." V.S. Crowley at 14.

- Pending Cases. The Board also proposes in its *Decision* not to retroactively apply a 10 year DCF period analysis to the two pending SAC cases: *Western Fuels* and *AEP Texas*. The Board finds, and Coal Shippers agree, that "shortening the [DCF] analysis period [in these cases] would require the submission of an essentially new SAC case." *Decision* at 2. Shippers with pending SAC cases should not, under any circumstances, be required to start all over again, nor should their choice of an applicable DCF period be retroactively eliminated.

- Length of Prescription. Finally, the Board's 10 year DCF proposal should not automatically limit the length of a rate prescription to 10 years. Currently, the Board prescribes maximum rates for periods of up to 20 years.⁷⁶ Part of the Board's rationale for converting to a 10-year DCF period is that significant changes in the assumptions utilized in the DCF analysis reasonably can be anticipated within this period. Consistent with this justification, if the Board adopts a 10-year DCF period, the burden should be on the defendant carrier to demonstrate, at the end of the 10-year period, that material changes in circumstances indeed have occurred, which require that the prescription be modified or vacated. Stated another way, the Board should not apply its DCF proposals in a fashion that requires a shipper to start all over again in DCF year 10, unless there is a demonstration of changed circumstances that require this result.

VII. STANDARDS FOR VACATING RATE PRESCRIPTIONS

In the *Decision*, the Board interprets the Court of Appeals' ruling in *Burlington N. & Santa Fe R.R. Co. v. S.T.B.*, 403 F.3d 771 (D.C. Cir. 2005) as mandating that shippers and rail carriers alike be held to compliance with the requirements of 49 U.S.C. § 722(c) before the reopening and/or vacation of a rate prescription can be secured. *Decision* at 35. The Coal Shippers do not agree that this is the sole, necessary

⁷⁶ See *Xcel* at 11; *Wisconsin Power & Light* at 13.

interpretation of the Court's decision.⁷⁷ However, for purposes of these Comments, the Coal Shippers will accept the Board's conclusion that for pending or future cases, a common standard will be applied to all prescription reopening/vacation petitions.

The Coal Shippers agree that both the law and sound policy disfavor repetitive litigation over the same challenged rail rates,⁷⁸ though in light of the very high cost of litigation under the *Coal Rate Guidelines*, the risk of the type of revolving-door complaints seen in certain decisions from early in the last century⁷⁹ must be counted as quite remote. In that regard, however, it should be acknowledged that the "threat of repetitive litigation by unsuccessful litigants who can demonstrate no more than a desire to make a better case"⁸⁰ is not one faced by carriers alone.⁸¹ Equally afoul of this guideline would run the railroad that seizes upon a near-term disparity between coal

⁷⁷ The Court's ordering paragraph remanded the matter under review to the Board for further proceedings, but did not direct the Board to take any specific action. 403 F.3d at 778. Inasmuch as the decisional flaw identified by the Court was the Board's failure to offer a "reasoned basis" for its determination that a rate prescription should be vacated upon request by the shipper for whose benefit it was imposed (*id.*), one option available to the Board is to re-affirm its prior decision while supplying the requisite reasoned basis.

⁷⁸ *Decision* at 37, and authorities cited therein.

⁷⁹ *See, e.g., Traugott Schmidt & Sons v. Michigan Central R.R.*, 23 I.C.C. 684 (1912) (party sought to assert a claim only 15 months after an identical claim had been rejected).

⁸⁰ *Decision* at 37.

⁸¹ *See San Antonio, Texas v. United States*, 631 F. 2d 831 (D.C. Cir 1980).

volume or revenue forecasts and actual experience, to seek reopening of a decision predicated on a 10 or 20-year analysis which is just as likely to understate as to overstate.

The foregoing notwithstanding, the Coal Shippers do not support the standards and procedures outlined at pages 31 through 39 of the *Decision*, and respectfully submit that the Board would be in error both as a matter of law and policy were they to be adopted.

A. “Lifting the Prescriptive Effect” of a Rate Order Pending a Hearing Violates *Arizona Grocery*

The Board’s proposal to “lift the prescriptive effect”⁸² of a rate prescription before rather than after consideration of all the evidence that would be presented in support of or opposition to its revision or vacation, simply cannot be squared with the law. The Supreme Court’s decision in *Arizona Grocery*⁸³ and its progeny⁸⁴ make clear that once the Board prescribes a rate, that rate must remain in effect and enjoys the force of law until “a new hearing and the fixing of a more adequate rate for the future.”

Arizona Grocery, 284 U.S. at 387. The Board’s proposed, interim step of “lifting the

⁸² *Decision* at 37.

⁸³ *Arizona Grocery Co. v. Atchison, Topeka & Santa Fe Rwy. Co.*, 284 U.S. 370 (1932).

⁸⁴ See, e.g., *ACS of Anchorage, Inc. v. FCC*, 290 F.3d 403, 410-11 (D.C. Cir. 2002); *Alabama Power Co. v. ICC*, 851 F. 2d 1361, 1373 (D.C. Cir. 1988); *Burlington N. R.R. Co. v. ICC*, 679 F.2d 934 (D.C. Cir. 1982).

prescriptive effect of a rate prescription”⁸⁵ while it considers evidence addressing whether it should be vacated, simply has no home in the law. Indeed, any purported distinction between lifting the “prescriptive effect” of a rate prescription and vacating it is illusory. A rate prescription order has no “effect” other than its *prescriptive* effect; once stripped of that effect, the order ceases to have any meaning, the essential attribute of a “vacated” order. And under *Arizona Grocery*, vacation or revision can only follow the conclusion of an evidentiary hearing.

That there is no middle ground between establishing a rate prescription (which requires an evidentiary hearing⁸⁶) and vacating or revising it after a subsequent hearing, is part and parcel of the *Arizona Grocery* doctrine:

The statute does not authorize or suggest the imposition of tentative rates pending an investigation or of rates pendente lite in an investigation. Its power in the first place is to declare a rate unreasonable and unjust, and having so declared to replace it with a rate which is reasonable and just.

Atchison, T. & S. F. Ry. v. Arizona Grocery Co., 49 F. 2d. 563, 566 (9th Cir. 1931). The notion of the Board “lifting the prescriptive effect” of a rate order without vacating it *prior to* the completion of evidentiary proceedings has only one antecedent: Docket No. 41185, *Arizona Pub. Serv. Co. & PacifiCorp v. BNSF Rwy. Co.*, Decision served May 12, 2003 at 7 (“*Arizona Pub. Serv. Co.*”). However, that decision cannot be reconciled with

⁸⁵ *Decision* at 38.

⁸⁶ *See* 49 U.S.C. §10704(a)(1).

the Supreme Court's holding in *Arizona Grocery*. The Coal Shippers respectfully submit that on this issue the decision was legally erroneous, and should not be followed.

The Board purports to rely on 49 U.S.C. § 722(c) for the authority to “lift the prescriptive effect” of a rate prescription. However, that section cannot be used to negate the STB’s other duties and responsibilities. *See, e.g., Burlington N. R.R. Co. v. S.T.B.*, 75 F.3d 685, 692 (D.C. Cir. 1996). As held by the Board, “any prescription, even of an interim rate, requires a full hearing. *See* 49 U.S.C. 10704(a)(1).” *West Texas Utilities*, Decision served Oct. 14, 1994 at 5 n.10. Section 722(c) authorizes the STB to reconsider decisions under circumscribed circumstances. However, Section 722(c) only grants the STB ancillary powers to be used as an adjunct to the STB’s explicit statutory authority – it cannot not be used to evade its statutory duties. *See ICC v. American Trucking Ass’n*, 467 U.S. 354, 365 (1984); *American Tel. and Tel. Co. v. FCC*, 487 F.2d 865, 877 (2nd Cir. 1973).

Allowing the mandatory hearing requirements to be undermined in the manner suggested by the Board would result in an impermissible “end-run around the statutory scheme . . . thereby avoiding the practical force of the statutory limits on its authority.” *Burlington N. R.R. Co. v. STB*, 75 F.3d at 794.

In its *Decision*, the Board also proposes that once it completes the evidentiary proceeding on reopening, it would apply any changes to the prescription that may be found appropriate “retroactive to the date of the reopening” *Decision* at 38. The Coal Shippers submit that this is contrary to the *Arizona Grocery* rule as well. The

Board suggests that since evidence to support reopening “will also raise genuine questions about the proper rate prescription for the future,” and that the parties therefore will be placed “on notice” that an order’s prescriptive effect may be lifted,⁸⁷ *Arizona Grocery* is satisfied. However, the command of *Arizona Grocery* is clear: a prescription can only be vacated *after* a hearing, and a new or revised rate can only be effective *prospectively*. *Arizona Grocery*, 284 U.S. at 387; *Burlington N. R.R. Co.*, 679 F.2d at 940 n. 13. Raising “genuine questions” about the proper rate for the future is a far cry from completing an evidentiary hearing, and the fact that parties might have “notice” of a possible future rate change is irrelevant to whether the Board lawfully can circumvent the hearing requirement.⁸⁸

**B. A Single Hearing With a Broad Evidentiary Scope
Should Precede Any Change to a Rate Prescription**

The Board’s proposal to establish multiple levels of evidentiary hearings to consider whether to revise or vacate a prescription depending upon whether “it could suitably conduct the investigation within the framework of the old SAC analysis (in a

⁸⁷ *Decision* at 38.

⁸⁸ The Board offers that its proposal to retroactively change a rate prescription upon reopening is analogous to a very narrow class of cases in which a Board rate order was changed retroactively after being reversed by a court. *See, e.g., Iowa Power & Light Co. v. United States*, 712 F.2d 1292 (8th Cir. 1983). The Coal Shippers disagree. In those cases, the Board’s rate action effectively was deemed invalid *ab initio*. In the case of a reopening, there is no assertion that the original prescription was contrary to law; the focus is on subsequent, changed circumstances that purportedly affect the continuing validity of the prescription *for the future*. *San Antonio, Texas v. Burlington Northern, Inc.*, 364 I.C.C. 887, 896 (1981).

reopened proceeding), or if a new SAC analysis (after vacatur) would be needed”⁸⁹ is unsound policy, inefficient, and unfair to shippers. The Coal Shippers submit that when a petition to reopen or vacate a prescription is filed, a single evidentiary proceeding should ensue in which both parties may submit all relevant evidence concerning the changed circumstances or new evidence, at the conclusion of which the Board then would enter findings whether the prescription should be affirmed, revised (upward or downward), or vacated. For example, if a railroad petitions to vacate or revise a prescription on the grounds that traffic which a Board decision and prescription order concluded would be present in fact did not materialize, the shipper should be entitled to respond with, *e.g.*, evidence of how its SARR design or traffic group would have differed from the original had it been known at the outset that the traffic in question would not be available to the SARR. A single Board ruling regarding the continued integrity of the prescription in light of the parties’ respective showings then would issue.

Sound agency policy requires that each party to a proceeding have a full and fair opportunity to submit evidence regarding the issues to be decided by the agency, without undue restriction. *See Trident Seafoods, Inc. v. NLRB*, 101 F.3d 111, 116 (D.C. Cir. 1996) (“It is a basic tenet of administrative law that each party to a formal adjudication must have a full and fair opportunity to litigate issues to be decided by an agency”); *Great Lakes Airlines, Inc. v. CAB*, 294 2d 217, 227 (D.C. Cir. 1961). In the

⁸⁹ *Decision* at 36.

context of a petition to reopen a rate prescription based on changed circumstances, this principle should guarantee the respondent the right to meet that petition with evidence of other changed circumstances that support retention or an alternative revision of the prescription, or evidence of how the change could have been accommodated had its occurrence been expected at the time of the original order. The Board's proposed multilayer approach is inconsistent with this sound policy.

The prototype for the Board's "flow chart" proposal (*Decision* at 34) clearly appears to be its handling of the prescription reopening issue in *Arizona Public Service Co., supra*. In that case, the defendant sought reopening based on new evidence of a decline in SARR coal volumes relative to the forecasted volumes underlying the original prescription, due to the early exhaustion of reserves from a particular coal mine. The original prescription was predicated on the Board's expectation that the reserves would last longer and/or would be supplemented from the same origin. The complainant responded with a proffer of evidence of changes in the SARR traffic group and configuration that would have been made had the relevant facts been known at the time that the prescription was entered. The Board allowed the complainant to introduce evidence on how the shippers in the SARR traffic group would re-source coal that was to be supplied by the mine in question, but prohibited any evidence of changes in the SARR layout or traffic group themselves. *Arizona Public Service Co.*, Decision served October 14, 2003 at 3. The Board suggested that limiting the complainant's evidentiary options in this manner was good public policy:

It promotes stability in rate prescriptions and reduces the administrative burden of continued reopenings. It also gives parties an incentive to make their best case initially, rather than to make a lesser case and attempt to improve it later on reopening.

Id. at 6. The Coal Shippers submit that none of these rationales is valid as support for the approach proposed in the *Decision*.

Far from promoting stability in rate prescriptions, the *Arizona Public Service* model serves only to create uncertainty. The Board's proposed, interim step of "lifting the prescriptive effect" of a rate order at the threshold stage, in addition to being legally defective, transforms a landscape in which both railroad and shipper know the rate(s) that will apply until the conclusion of an evidentiary hearing into one in which the integrity of the prescription would depend on whether a petition "raise[d] genuine questions" about its propriety. *Decision* at 38. The practical effect simply would be to benefit railroads. Since the "changed circumstances" likely to be cited most often by railroads (*e.g.*, reduced SARR volumes or revenues) are of the type that "can be integrated into an old SAC analysis without undue complications,"⁹⁰ they would benefit from the threshold "lifting [of] the prescriptive effect"⁹¹ far more than shippers, whose "changed circumstances" showings (*e.g.*, new SARR customers, increased volume

⁹⁰ *Decision* at 36.

⁹¹ *Id.* at 38.

forecasts, etc.) more likely would implicate “changes to the SARR configuration”⁹² that under the Board’s proposal can only be considered after a prescription is vacated and a new complaint is filed. *Decision* at 35.

Likewise, the Board’s multi-layer approach will not reduce administrative burdens. Instead of a single proceeding in which both sides marshal, organize and present at one time all relevant evidence concerning the continued validity of an existing rate level and/or the proper rate that should govern for the future, the Board’s proposal would perpetuate the kind of inefficient, piecemeal litigation that characterized the *Arizona Pub. Serv. Co.* and *West Texas Utilities* prescription reopening proceedings, the latter of which began in the Summer of 2000 and remains active today.

Lastly, the Board’s reference to incenting shippers to “make their best case initially,” a sentiment which also is reflected in the *Decision* (at 37), mischaracterizes the motives and considerations that actually drive a complainant’s SARR design decisions. As the Board is well aware, the design and presentation of a SAC analysis is a complex and expensive undertaking. A shipper contemplating the design of a SARR considers both the relevant factors (e.g., prospective routes, traffic group, etc.) as they are observed *at that time*, and the virtue of simplicity in presentation, to the extent that it can be achieved. It is unreasonable to expect or require that a shipper’s design include contingencies to cover unforeseen changes in the facts and circumstances that existed at

⁹² *Decision* at 36.

the time the SARR was developed. Concomitantly, it is inequitable to preclude the shipper, in a later proceeding to consider reopening a prescription, from presenting the design changes that would have been made had it *known* that the circumstances would change, while at the same time allowing the railroad to use the change for its benefit.⁹³

C. The Board's Treatment of Index and Forecast Changes Requires Clarification

The Board should clarify its intentions concerning reopening a prescription on the basis of updated forecasts or adjusted indices. *Decision* at 36. In its 1998 ruling in *Arizona Public Service Company v. Atchison T. & S. F. Ry. Co.*, 3 S.T.B. 70, 75 (1998), the Board specifically rejected the notion that individual discrepancies between forecasted and actual traffic volumes and/or revenues would warrant reopening, holding instead that the evidence must show "important long-term shifts in patterns, not short-term year-to-year fluctuations that do not undermine our long-term projections." 3 S.T.B. at 75 n. 16. While this principle is acknowledged in the *Decision*, the Board does not explain how it would be reconciled with the offered examples of "changed circumstances" that would support a reopened investigation "within the framework of the old SAC analysis."

Decision at 36.

⁹³ As noted, practically speaking, the changed circumstances that most likely could be considered within the framework of the "old" SAC analysis are those that would favor the railroads, *e.g.*, reductions in forecast traffic volumes, unexpected shutdowns of SARR customer operations, etc. The changes more likely to favor shippers, on the other hand – such as the appearance of new shippers on the SARR route or traffic increases beyond forecast levels – usually will require some expansion or modification of the SARR system in order to be accommodated.

The Coal Shippers harbor concerns over the emergence of a double-standard, whereunder railroad requests to reopen prescriptions based on claims that forecasted traffic volumes or revenues have not been achieved are addressed readily within the "old" SAC framework, because reduced volumes do not require changes in SARR capacity, while shipper petitions, or defenses of existing prescriptions, grounded on the emergence of new traffic or volume/revenue growth that exceeds forecasts trigger a requirement that the shipper "design a new SARR in a new SAC proceeding." *Id.* Successful complainants are entitled to the same protection from repetitive litigation as the Board's proposal is said to offer railroads (*id.* at 37). Adherence to and enforcement of the agency's stated policy to require a showing of "important long-term shifts"⁹⁴ in the expected parameters underlying the SAC analysis in order to justify reopening is a necessary element of this protection.

**D. Methodology Changes Adopted In this Proceeding
Should Not Be Invoked to Reopen Prior Prescriptions**

Finally, the Board should make clear that any changes in the standards and procedures for implementation of the *Guidelines* that might be adopted in this proceeding only will be applied prospectively, and standing alone will not be accepted as grounds to reopen a rate prescription that is not already before the Board on reconsideration or court

⁹⁴ *Arizona Pub. Serv. Co. and PacifiCorp v. the Atchison Topeka and S. F. Rwy. Co.*, 3 S.T.B. at 70, 75 n. 16 (1998).

remand. The Board's legitimate goal of administrative finality and repose⁹⁵ is best served by continued adherence to the maxim that petitions to reopen rate prescriptions should be grounded on material changes in factual circumstances specific to the underlying rate order, not future modifications or reinterpretations of the Board's general legal standards.

The Board's precedents concerning requests to reopen rate prescriptions reflect a focus on the factual underpinnings of the original order, and whether circumstances have changed such that those factual premises no longer are valid or worthy of reliance. *See Arizona Pub. Serv. Co.*, Decision served May 12, 2003 at 4; *San Antonio, Texas, supra*. *See also Decision* at 31. As discussed *supra*, the Coal Shippers do not agree that the scope of the evidence which can be submitted in response to a claim of changed factual circumstances should be as narrow as the Board previously has held and now proposes. However, the Coal Shippers do endorse the principle that fundamentally it should be a fact-based inquiry. If no meaningful changes in the evidentiary predicates for the original decision have occurred, the prescription should not be subject to revision based solely upon a subsequent change in the Board's rate evaluation methodology.⁹⁶

⁹⁵ *See Arizona Public Service Company*, 3 S.T.B. at 75.

⁹⁶ Changes in the Board's methodology for implementation of the *Guidelines* are distinguished from changes in its governing statute, which have been held applicable in the case of continued enforcement of a pre-existing rate prescription. *See, e.g., Burlington N. R.R. Co.*, 679 F.2d at 942.

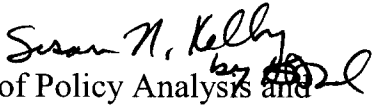
A contrary rule effectively would eliminate any notion of administrative finality from the rate prescription process, regardless of the “settled expectations” of those who had relied on the prescription orders. *Cf. Williams Natural Gas Co. v. FERC*, 3 F. 3d 1544, 1554 (D.C. Cir. 1993). Virtually any change in the SAC component of the *Guidelines* methodology – if applied to the evidentiary record of a decided case – would produce different SAC results from those seen in the original decision, regardless of whether there has been *any* change in the factual underpinnings of that decision. The same holds true for changes in the Board’s approach to the calculation of variable costs. As the Board notes in its *Decision*, the standards for reopening prior rate prescriptions should be crafted such that the agency’s resources are not “drained with rate disputes resisting resolution.” *Id.* at 37. The Coal Shippers submit that the Board can and should take an effective step in this direction by clarifying that any methodological changes adopted in this proceeding cannot be invoked as grounds to reopen a prior, final Board decision and rate prescription.

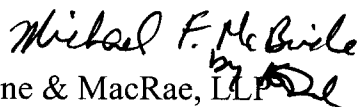
CONCLUSION

The Coal Shippers commend these Joint Comments to the Board's favorable consideration, and request that the Board conclude this proceeding and resolve each of the issues raised in the *Decision* and in these Joint Comments in the manner advocated herein.

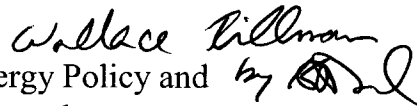
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Dated: May 1, 2006

DESCRIPTION OF CONCERNED CAPTIVE COAL SHIPPERS

The Concerned Captive Coal Shippers include the following 11 entities:

(1) American Electric Power Service Corporation. AEP Service Corporation acts as agent for its American Electric Power ("AEP") electric generating affiliates in securing coal transportation services for more than 35 million tons of coal annually, at a cost of more than \$350 million. AEP, with more than 5 million American customers, is one of the country's largest investor-owned utilities, serving parts of 11 states. The service territory covers 197,500 square miles in Arkansas, Indiana, Kentucky, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia and West Virginia.

AEP owns and operates about 80 generating stations in the United States, with a capacity of more than 36,000 megawatts. Coal-fired plants account for 73 percent of AEP's generating capacity. One AEP electric generating company, AEP Texas North Company, is the complainant in Docket No. 41191 and Docket No. 41191 (Sub-No. 1), which currently are pending before the Board. Therein, AEP Texas North is challenging BNSF Railway Company's ("BNSF's") rates for service to the Oklaunion Station in Vernon, Texas.

(2) Dairyland Power Cooperative. Dairyland Power Cooperative, which is headquartered in La Crosse, Wisconsin, is a generation and transmission cooperative (G&T) that provides the wholesale electrical requirements and other services for 25 electric distribution cooperatives and 20 municipal utilities in the Upper Midwest.

Dairyland delivers electricity via more than 3,100 miles of transmission lines and nearly 300 substations located throughout the system's 44,500 square mile service area, which encompasses 62 counties in four states (Wisconsin, Minnesota, Iowa and Illinois).

Dairyland's coal-fired generating stations include the 400 MW J.P. Madgett Station, the 379 MW Genoa Station #3, and the 210 MW Alma Station. Dairyland's coal-fired units consume more than 2 million tons of coal annually. These units are located in western Wisconsin, and their coal requirements must be transported over substantial distances.

(3) Duke Energy Corporation, a Delaware corporation. Duke Energy is a diversified energy company with a portfolio of natural gas and electric businesses, both regulated and non regulated, and an affiliated real estate company. Duke Energy supplies, delivers and processes energy for customers in North America and selected international markets. Duke Energy owns two regulated electric companies which use rail transportation: Duke Power Company LLC ("Duke Power") and PSI Energy, Inc. ("PSI").

Duke Power operates eight coal-fired electric generating stations, including one station (Marshall 2,090 MW) that is served by both Norfolk Southern Railway Corporation ("NS") and CSX Transportation, Inc. ("CSXT"), four stations that are served solely by NS (Allen - 1,140 MW, Belews Creek- 2,240 MW, Buck - 369 MW, and Dan River - 276 MW), and three stations that are served solely by CSXT (Cliffside - 760 MW,

Lee - 370 MW, and Riverbend - 454 MW). PSI operates three coal-fired electric generating stations which use rail transportation, including one served by NS (Gibson - 3,340 MW), one served by CSXT (Cayuga - 1,062 MW), and one served by Canadian Pacific Railway (Wabash River - 860 MW). These eleven stations are capable of generating a total of 12,961 megawatts of energy.

(4) Grand River Dam Authority ("GRDA"). GRDA is an agency of the state of Oklahoma, created by the Oklahoma Legislature in 1935. GRDA operates coal-fired electric generating facilities located near Chouteau, Mayes County, Oklahoma known as the "Coal-Fired Complex." This 1010 MW facility receives shipments of Powder River Basin ("PRB") coal via BNSF and Union Pacific Railroad Company ("UP") in interline service. UP is the only rail carrier that serves the Coal-Fired Complex. GRDA transmits and delivers wholesale electricity across its 24-county service area in Northeast Oklahoma to three customer classes: municipals, electric cooperatives and industries.

(5) Intermountain Power Agency ("IPA"). IPA, a political subdivision of the State of Utah, is the owner of the Intermountain Power Project ("IPP"). IPP is located in the great basin of western Utah near Lynndyl, Millard County, Utah. The project generates more than 13 million megawatt hours of energy each year from its two coal-fired units and serves approximately 2 million customers. The units have a gross total capacity of 1,900 MW and consume over 6 million tons of coal per year.

IPP's generation rights are held, respectively, by the Los Angeles Department of Water and Power (44.6%), five California cities (30%), twenty-three municipal Utah purchasers (14%), six cooperative Utah purchasers (7%), and one investor-owned Utah purchaser (4%). Rail service to IPP's generating station is provided solely by UP.

(6) Lafayette Utilities System ("LUS"). LUS is a publicly-owned and operated utility serving the electric, water, wastewater, and telecommunications needs of more than 55,000 retail customers in Lafayette, Louisiana. LUS is a 50% owner of the 523 MW, coal-fired Rodemacher Generating Station in Boyce, Louisiana.

The Rodemacher co-owners collectively purchase approximately 2 million tons of PRB coal annually for use at Rodemacher. All of this coal originates from mines in Wyoming. The only practical way to transport this coal from Wyoming to Rodemacher (a distance of over 1,500 miles) is by rail, and the only carrier capable of serving the Rodemacher Station is UP.

(7) Platte River Power Authority. Platte River Power Authority is a political subdivision and public corporation of the State of Colorado which supplies the electricity used by the communities of Estes Park, Fort Collins, Longmont, and Loveland, Colorado. Its headquarters is located in Fort Collins, and it has facilities located primarily along the Front Range and the western slope of northern Colorado, in addition to a wind

project at Medicine Bow, Wyoming. Platte River also provides surplus electricity and support services to other utilities in the western United States.

Platte River owns and operates the Rawhide Energy Station, a 270 MW coal-fired power plant located north of Fort Collins, along with nearly 270 miles of transmission lines in northern Colorado. Platte River also has an 18% (154 MW) interest in the Yampa Project, consisting of Craig Station Units 1 and 2, a coal-fired plant located near the town of Craig, approximately 130 miles west of Fort Collins on the western slope of Colorado.¹ The total annual coal consumption at Rawhide is approximately 1.4 million tons. BNSF provides the only rail service option for coal moving to the Rawhide Station.

(8) Progress Energy, Inc. Progress Energy, headquartered in Raleigh, N.C., is a Fortune 250 diversified energy company with more than 24,000 megawatts of generation capacity and \$9 billion in annual revenues. The company's holdings include two electric utilities serving approximately 2.9 million customers in North Carolina, South Carolina and Florida. Progress Energy also includes nonregulated operations covering competitive generation, energy marketing, natural gas production, fuel extraction and broadband capacity.

¹ Craig Units 1 and 2 are jointly owned by Platte River, Tri-State Generation & Transmission, Inc., Xcel Energy, the Salt River Project and PacifiCorp. Tri-State is the project operating agent. The plant is adjacent to the Trapper Mine, which is the primary coal supplier for the plant and is jointly-owned by the participants.

Progress Energy's coal-fired plants include: (i) the two-unit, 392 MW Asheville Steam Plant at Skyland, N.C.; (ii) the two-unit, 316 MW Cape Fear Plant near Moncure, N.C.; (iii) the four-unit Crystal River steam complex, located near Crystal River, Fla., which includes two units built in the 1960s (Crystal River South, totaling 865 MW) and two units built in the 1980s (Crystal River North, totaling 1,437 MW); (iv) the three-unit, 407 MW H.F. Lee Plant near Goldsboro, N.C.; (v) the single-unit, 745 MW Mayo Plant near Roxboro, N.C.; (vi) the single-unit, 174 MW H.B. Robinson Steam Plant near Hartsville, S.C.; (vii) the four-unit, 2,462 MW Roxboro Steam Plant near Roxboro, N.C.; (viii) the three-unit, 613 MW L.V. Sutton Steam Plant near Wilmington, N.C.; and (ix) the three-unit, 176 MW W.H. Weatherspoon Steam Plant near Lumberton, N.C. All of Progress Energy's coal-fired plants are served by rail. Three are served solely by NS, four solely by CSXT, and two jointly by NS and CSXT.

(9) Seminole Electric Cooperative, Inc. Seminole is a rural electric G&T cooperative headquartered in Tampa, Florida. An estimated 1.6 million individuals and businesses rely on Seminole's 10 member distribution systems for their electric power. Seminole's members serve more than 800,000 meters in portions of 46 of Florida's 63 counties.

The primary energy resource serving Seminole's member systems is the Seminole Generating Station. This 1,300 megawatt, coal-fueled power station is located in Northeast Florida in Putnam County on the St. Johns River, south of Jacksonville. It

consumes approximately four million tons of coal and/or petroleum coke per year. The Seminole Station is served exclusively by CSXT.

(10) South Carolina Public Service Authority ("Santee Cooper"). Santee Cooper serves over 143,000 retail customers in Berkeley, Georgetown, and Horry Counties, South Carolina, and supplies power to the municipalities of Bamberg and Georgetown, 32 large industries, and one military installation in North Charleston. The state-owned electric and water utility generates the power distributed by the state's 20 electric cooperatives. Santee Cooper power now flows in all 46 counties in the state serving over 625,000 customers.

Santee Cooper owns and operates four large-scale, coal-fired generating stations in South Carolina: Jefferies Station in Moncks Corner, Cross Station in Cross, Winyah Station in Georgetown, and Grainger Station in Conway. All of these plants are served exclusively by CSXT. Collectively, these four stations consume approximately 8 million tons of coal per year with a capacity of approximately 2,791 MW. Santee Cooper is constructing two additional units at the Cross Station which will increase Santee Cooper's coal consumption to approximately 11 million tons per year and its capacity to approximately 3,951 MW. Rail service to these plants is currently provided by CSXT.

(11) South Mississippi Electric Power Association ("SMEPA"). SMEPA is a rural electric power association formed for the purposes of generating and transmitting electric energy. SMEPA is headquartered in Hattiesburg, Mississippi, and

provides wholesale electric energy to eleven member-owners. The member-owners, in turn, are each rural electric distribution cooperatives who sell power to homes, farms, and businesses in Mississippi. SMEPA recovers its cost of providing electric energy through wholesale rates to its eleven members. Fuel costs, including the costs to transport fuel, are eventually passed on to the electric customers by the local cooperatives.

SMEPA owns and operates an electric generating facility at Richburg, Mississippi known as the Morrow Station. This 400 MW facility consists of two coal-burning electric generating units. The Morrow Station consumes approximately one million (1,000,000) tons of coal per year, and operates on a nearly continuous basis. Rail transportation is the only economical means of delivering large volumes of coal to the Morrow Station, and rail access to the Morrow Station is exclusively over the lines of NS.

VERIFIED STATEMENT OF

CURTIS M. GRIMM, Ph. D

INTRODUCTION

My name is Curtis M. Grimm. I am an economist and Dean's Professor of Supply Chain and Strategy at the University of Maryland. A copy of my *curriculum vitae* is appended to my Statement. I am offering this Statement in support of the Joint Comments of Western Coal Traffic League, Concerned Captive Coal Shippers, Western Fuels Association, Inc., Edison Electric Institute, National Rural Electric Cooperative Association and American Public Power Association in this proceeding.

Constrained Market Pricing (CMP) has been the basis for the STB's determination of the reasonableness of rail captive coal rates since 1985. The ICC and the STB have implemented this pricing standard over the past two decades through a series of cases and rulemakings. In the instant proceeding, the STB is now examining a number of issues with regard to the implementation of CMP that consistently arise in coal rate litigation. In considering these issues, however, it is important at the outset to recognize the current railroad industry context, and how it has evolved since 1985.

First, there has been substantial railroad merger activity over the past two decades, particularly in the mid 1990's, which has dramatically reduced the degree of railroad competition and led to an ever-increasing level of rail market power over coal transportation. Second, railroad revenues and financial performance have steadily improved, so that railroads are now revenue adequate by most common metrics of

financial performance. Consistent with these two developments, one would expect that as a matter of regulatory policy, the STB should be moving to aggressively protect and promote competitive access across the rail industry, and to be increasingly vigilant in extending regulatory protections to shippers who lack meaningful competitive transportation alternatives. In fact, however, the opposite seems to have occurred. As railroad market power has grown in recent years, the STB's interpretations and applications of the CMP process have generally been very unfavorable for shippers seeking relief under the *Coal Rate Guidelines*.¹

One recent development with particularly strong, negative impacts on captive coal shippers is the introduction of a "cross-subsidy" test for segments of the hypothetical Stand Alone Railroads (SARRs) that are designed and evaluated under the Stand-Alone Cost (SAC) constraint of CMP. This test, which was first promulgated in the *PPL* case² and further extended (though not applied) in the 2006 *Otter Tail* decision,³ marks a sharp departure from the system-wide SAC analysis which was the essential hallmark of every STB coal rate decision since 1985. While not listed specifically as an issue to be addressed in the notice of proposed rulemaking, it is quite appropriate to subject the cross-subsidy test to close scrutiny in the current proceeding. As described by the STB, the scope of this proceeding is "major issues regarding the proper application of the stand-alone cost (SAC) test in rail rate cases." *Decision*⁴ at p. 2. As further noted by the STB, the selection criteria for issues to be addressed in the proceeding are those of

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

² *PPL Montana, LLC v. Burlington Northern and Santa Fe Ry.*, STB Docket No. 42054 (STB served Aug. 20, 2002).

³ *Otter Tail Power Co. v. BNSF Railway Co.*, STB Docket No. 42071 (STB served Jan. 27, 2006).

⁴ *Ex Parte No. 657 (Sub No. 1)* (STB served Feb. 27, 2006) (*Decision*).

paramount importance for fair and consistent application of the Guidelines, and issues that have arisen in recent cases as important determinants of the final outcome: “These proposals are designed to ensure that both the SAC test and the jurisdictional floor for rate relief are applied fairly and in conformity with our statutory responsibilities.

Because the issues they address go to the heart of the SAC test and have industry-wide significance for rail carriers and their captive shippers, all interested parties will have an opportunity to comment on these proposed changes. The changes we adopt here will be applied in future SAC rate cases...” *Id.*

The cross-subsidy issue clearly fits these criteria. It has arisen in two recent cases, and provided a major break with precedent, introducing a new constraint on the construction of a SARR. Clearly, the introduction of this issue raises questions regarding the fair and consistent implementation of CMP, and the cross-subsidy test has been offered by the STB as a precedent with implications for ensuing cases. As such, it is fair and reasonable to give a broader set of stakeholders the opportunity to provide input on the issue.

This statement will address the key issues raised by the STB’s “cross-subsidy” test. First, I will explain how the internal cross-subsidy application defined by the STB is not well grounded in the established understanding and usage of the term, including its previous applications by the ICC and STB themselves. Next, I will discuss how the STB’s apparent mandate that captive shippers now must model construction and operation of the most efficient and lowest cost SARR for each member of the complainant’s selected traffic group is unduly complex, and wholly inconsistent with contestability principles. In this regard, I also explain how the STB’s cross-subsidy

procedure adds considerable uncertainty to the CMP process, working against the STB goal of facilitating negotiated settlements of rate disputes. Finally, I describe how the Board's own internal cross-subsidy example in the recent *Otter Tail* decision underscores the ambiguity and flaws in the procedure.

I. THE STB'S "INTERNAL CROSS-SUBSIDY" CONCEPT IS NOT GROUNDED IN ESTABLISHED THEORY OR PRIOR USAGE

The Board's original proscription of cross-subsidy in the rate reasonableness context, as enunciated in the 1985 *Coal Rate Guidelines*, was consistent with cross-subsidy theory and general application: "A captive shipper should not bear the costs of any facilities or services from which it derives no benefit." 1 I.C.C. 2d at 523. Drawing on established concepts from the larger school of industry regulation and practice, the STB properly focused on a monopolist's exploitation of captive customers to improperly subsidize products in competitive markets: "Taken together, these constraints should ensure that a carrier does not use its market dominance to charge its captive coal shippers more than they should have to pay for efficient rail service Carriers will be effectively limited in the rates they can charge on captive traffic and will have the necessary incentive to maximize the net revenue contribution from competitive traffic. Cross-subsidization of other shippers is effectively precluded." *Id.* at 525.

This rendering of a classic cross-subsidy test is quite consistent with the origins and common usage of the concept. When a firm has market power with respect to some customers but faces competition for others, it is inappropriate to use that market power and the resulting ability to draw excess profits to sustain prices lower than marginal costs for the competitive products or services. Such a predatory pricing strategy is proscribed

because it would facilitate elimination of competitors or an enhancement of present and/or future market share by the dominant firm. In an unregulated market, market forces along with antitrust laws and policy generally prevent this behavior. If the non-competitive prices are regulated, it is up to the regulator to ensure that captive customers do not pay for losses that are incurred in another, more competitive market. For example, in the days of the AT&T telecommunications monopoly, an ongoing issue was whether AT&T's profits in non-competitive phone service were improperly cross-subsidizing competitive products and services. Indeed, much of the modern theory regarding cross-subsidy arose in conjunction with the challenge posed by the AT&T monopoly. The 1985 *Coal Rate Guidelines* are congruent with existing tenets on cross-subsidy, prohibiting captive coal shippers from subsidizing more competitive traffic through the extraction of monopoly rents.

The approach to cross-subsidy described in *PPL* as applied to restrictions in the composition of a SARR bears no resemblance to a true cross-subsidy in the established sense of the term. In the STB's parlance, the concern is that shippers in the issue traffic group might be "cross-subsidized" by other traffic in the group. Essentially, the STB stands the test on its head; the focus of a potential "cross-subsidy" shifts from the complainant to some segment of the complainant's SARR. A test which properly is applied only to identify and proscribe predatory behavior by the incumbent is used in a scenario in which the SARR by definition has no real world competitor, and thus, no pattern of behavior against which to gauge predatory tendencies. In contrast to the original *Coal Rate Guidelines*, the STB's *PPL* constraint calls upon the SARR to disprove a cross-subsidy based upon SARR revenues over SAC, rather than revenues

over directly variable or short-term marginal cost. In this key respect as well, the STB's approach diverges from real world railroad pricing, and is out of context and inconsistent with the central concepts of the *Coal Rate Guidelines* and the broader literature. See 1 I.C.C. 2d at 539-41.

II. THE NEW "CROSS-SUBSIDY" TEST VIOLATES CONTESTABILITY PRINCIPLES

Given the absence in the SARR world of any real world basis for concern about an improper cross-subsidy (*i.e.*, predatory pricing by a monopolist), the STB's rejection of a SARR with an "internal cross-subsidy" in reality is a dismissal on the basis that another SARR, could be designed by another member of the SARR traffic group that would undercut the initial SARR on rates and steal its core customers. The larger the complainant's traffic group, the greater the number of these "iterative" SARRs that the complainant would be forced to evaluate. As discussed below, there is no theoretical support for this conclusion in contestability theory.

Once we can see where the internal cross-subsidy test really could lead, that is, toward a requirement that the complainant devise a SARR which represents the lowest cost, optimum system for any member of the SARR group located anywhere along the SARR route, its problems are apparent. The sustainability requirement described in *Otter Tail* misapplies the notion of sustainability under contestability theory, which simply involves a test of whether an existing firm is improperly exercising market power. Contestability theory posits that if *any* SARR can be constructed which generates excess profits, the challenged rates are too high. Under contestability theory as properly applied

by the ICC and the Board in *Nevada Power II*,⁵ and in many subsequent decisions thereafter, the SARR is properly viewed as a replacement carrier for, not a competitor of, the incumbent railroad. The SAC test measures whether SARR revenues exceed the SARR stand-alone costs for the SARR as a whole. And the SAC test, consistent with principles of contestable markets, assumes that the incumbent (or any other market participant) will not perfect any retaliatory price cuts while the SARR's remains in the market.

Prior to *PPL*, contestability theory in the context of CMP consistently had been applied on a total system basis – if a low-cost, hypothetical SARR serving the issue traffic and a logical shipper group would be earning excess profits systemwide based upon existing SARR rate levels, the complaining shipper's rates were excessive. It is completely inconsistent with the principles of contestability to place an additional requirement on a complainant to devise a SARR that is the most optimal or least cost rail system for *every* member of its traffic group. This hypothetical assumes – contrary to basic principles of contestability – that the market can and will retaliate against the SARR – in the form of a competitive second SARR – while the first SARR remains in the market place.

Also, any requirement that a complainant shipper model a SARR which is least cost both to the complainant shipper and to other, non-issue shippers, imposes an impossible burden on the complaining shipper. Potentially, there could be an infinite number of hypothetical SARR's which could be constructed, an infinite number of configurations of traffic and line segments which could subsume the instant traffic and

⁵ *Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C.C. 2d 259 (1994).

various, alternative shipper groups. These alternative SARRs could be larger than the initial SARR, smaller, or merely different. Such a result is inconsistent with contestability theory and raises an impossible challenge for shippers.

III. THE INTERNAL CROSS-SUBSIDY TEST CONFLICTS WITH RATIONAL RAILROAD BEHAVIOR, AND ADDS UNCERTAINTY TO THE CMP PROCESS

Importantly, the new internal cross subsidy test makes even more complex the already long, costly and intricate CMP procedure. This runs counter to continuing calls from all constituencies and the STB itself for the simplification and expedition of these procedures. It is difficult and complex enough to configure and estimate costs and revenues for a single SARR that could serve the issue traffic and a related shipper group at lower rates than the defendant railroad. Now, the STB appears ready to require complainants to repeat the entire exercise in an iterative fashion for all the members of the traffic group and for multiple components of the system, examining alternative SARRs to determine if others may be more optimal than the initial one for any subset of the group, or even any individual member – none of whom are before the STB for adjudication of a complaint, and all of whom already have been shown to be better off (or neutral) from a rate standpoint if served by the initial SARR as opposed to the incumbent.

It is also important to note that the task imposed by the *PPL/Otter Tail* test is far more difficult and imprecise than a traditional cross-subsidy analysis, including that applied by the STB in related contexts. In the more typical context, the cross-subsidy analysis is performed once as a threshold exercise, and assesses a particular service or product line using estimates of incremental, marginal, or variable costs, which are more tractable. For example, the original cross-subsidy test in the *Coal Rate Guidelines* calls

for an examination of short-run marginal costs, solely to determine whether particular traffic generates any contribution to fixed costs, and thereby justifies its retention by the railroad. Likewise, the STB's *Ex Parte No. 355* rules focus on directly variable costs to determine whether one segment of traffic is improperly cross subsidizing another. Making complex stand-alone cost calculations has no theoretical or practical place in this threshold analysis.

Also, the STB's new internal cross-subsidy analyses to date have also produced results sharply at odds with railroad practice, which further calls into question the accuracy of the findings and ability of the procedure to fether out the truth. The STB has concluded in both *PPL* and *OtterTail* that rail lines which in actuality handle substantial volumes of coal traffic to utilities would not be constructed today based on expected profitability. However, railroads have for the past 25-30 years had the ability to abandon unprofitable line segments. They have no doubt conducted full cost analyses on rail lines which handle coal shipments to utilities and have not found such lines unprofitable. The railroads have had ample years to abandon these lines, and their continued existence over such a long period of time provides strong evidence as to their profitability. The presence of some degree of sunk costs in the railroad industry would not justify a strategy of maintaining in perpetuity a line which would not a viable component of a presumptively efficient, *de novo* railroad system. Over a long period of time, railroads can disinvest in a line, as they have done with many light density lines, defer maintenance, and then ultimately abandon the line if it has high fixed costs and remains unprofitable. Thus, there should be a very strong presumption that such coal lines are profitable and not

operating below SAC costs in a bona fide CMP cross subsidy analysis. The STB's new internal cross-subsidy test errantly leads to the opposite conclusion.

Finally, incorporation of the complex, *PPL/Otter Tail* internal cross-subsidy test works against the oft-stated STB goal of maximizing the predictability of case outcomes under the *Coal Rate Guidelines* to encourage settlement and private negotiation. As expressed by the Board in its *Notice* in this proceeding in the context of the claimed benefits of MCM: "... use of the MCM approach should facilitate rate case settlements and private negotiations.... Under MCM, the maximum contribution level in a particular case would provide information parties could use to predict the outcome of their own disputes Such information should help the parties negotiate a mutually agreeable rate." *Id.* at 12. The Board is appropriately emphasizing the value of predictability regarding the outcome of rate disputes brought to the STB. However, the initiation of internal cross-subsidy procedures within the CMP procedures moves completely in the opposite direction, greatly enhancing the uncertainty of the process and militating against parties negotiating a mutually agreeable rate. The extension of the internal cross-subsidy to the rate relief stage, as signaled in *Otter Tail*, greatly exacerbates this problem.

IV. THE BOARD'S OWN OTTER TAIL EXAMPLE ILLUSTRATES THE FLAWS IN ITS NEW TEST

As also discussed by Professor Borts, the stylized model of a stand-alone railroad that is presented in the *Otter Tail* decision on pages 8 – 11 reveals many of the problems inherent in the internal cross-subsidy analysis. As simplified below, it depicts a three-segment SARR in which the complainant (Shipper 1) moves coal from B to A; a nearby

utility (Shipper 2) moves coal from C to A via B; and a third SARR customer (Shipper 3) moves coal from B to D via C.



The critical numbers from the Board's decision are as follows: the stand-alone cost of serving the three shippers is \$110; the total revenue contribution from Shippers 1 and 2 is \$110; the contribution from Shipper 3 it is \$20; and the costs attributed to Shippers 1 and 2 total \$100. The Board proceeds to conduct an internal cross-subsidy analysis of Shipper 1 and Shipper 2's traffic, which focuses on the A-C line. However, in such a case, the \$20 revenues from Shipper 3 should also be included as a revenue component. When one compares the costs with the revenues of a line segment for cross-subsidy purposes, the entire origin-destination revenues of any traffic moving over the line must be included. Shipper 3 could not move traffic between B and D if the B-C line were no longer in existence. Thus, even before it begins its analysis, the Board has understated the revenues from the A-C line.

An analysis such as the STB describes is extraordinarily complex and ambiguous, even in a simplified setting. For instance, using the above example, if one wishes to compare the costs with the revenues of the A-B line and assumes the revenues of \$110 but higher costs, this would argue for elimination of the A-B line. In that event, however, Shipper 2 can no longer deliver traffic from A to C, so that line is no longer viable. If the

B-C line is eliminated, Shipper 3 can no longer move traffic from B to D, and that revenue is also lost, jeopardizing the viability of segment C-D. Given the overlapping configurations of shippers in exactly this manner in the rail system, elimination of “outside” segments of the system can cascade with impacts to shippers and line segments outside the original boundaries of the analysis. The necessarily corollary of this rule, of course, is that those overlapping configurations of shippers also derive benefits from the other lines in the system, even lines which they may not directly use. The STB’s new cross-subsidy test is flawed in theory, and essentially impossible to competently apply in practice.

CONCLUSION

In the instant proceeding, the Board is assessing the policy direction on a number of critical issues within the CMP framework. As a component of this exercise, a careful re-examination of the policy surrounding the internal cross-subsidy test is warranted. The internal cross-subsidy test applies the notion of cross-subsidy in a manner totally inconsistent with prior practice and intention. A more accurate label for the new requirement is a sustainability test for a SARR, but it is a test which can only be executed through a complex series of iterative analyses that would increase exponentially the cost and complexity of coal rate litigation. Even the Board’s own simplified hypothetical is ambiguous and flawed as to the outcome of an internal cross-subsidy analyses. Given the above, the Board should eliminate the test, or reform it to conform with traditional cross-subsidy analysis and limit its use to a threshold determination. The STB most certainly should not extend it further to the rate relief stage of a case, as signaled in *Otter Tail*.

VERIFICATION

STATE OF MARYLAND

COUNTY Howard

SS

I, Dr. Curtis M. Grimm, hereby certify, that I have read the foregoing statement, know the contents thereof, and believe it to be true to the best of my knowledge and belief.

Dated this 1st day of May, 2006.

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Dr. Curtis M. Grimm

Subscribed and Sworn to before me this 1st day of May, 2006

Rowena Corym

Notary

My Commission expires: 12/1/08

04/06

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PRESENT POSITION

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University of California, Berkeley	Ph.D.	6/83	Economics

Major Areas: Industrial Organization, Transportation and Econometrics/Statistics.

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Visiting Research Fellow, Bureau of Transport and Communication Economics, Canberra, Australia, July 1991 - January 1992.

Economist, Office of Policy and Analysis, Interstate Commerce Commission, Washington, D.C., January 1981 - December 1981.

Assistant to the Chief of Intercity Transport Development, Planning Division, Wisconsin Department of Transportation, Madison, October 1977 - August 1978 and November 1975 - July 1976.

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55) Emerson, C. and C. Grimm, "The Relative Importance of Logistics and Marketing Customer Service: A Strategic Perspective," Journal of Business Logistics Vol. 19, No. 1, 1998, pp. 29-42.

56) Ferrier, W., K. Smith and C. Grimm, "The Role of Competitive Action in Market Share Erosion and Industry Dethronement: A Study of Industry Leaders and Challengers," Academy of Management Journal Vol. 42, No. 4, pp. 372-388, August 1999. **WINNER OF AWARD FOR BEST PAPER PUBLISHED IN ACADEMY OF MANAGEMENT JOURNAL IN 1999.**

57) Grimm, C and J. Plaistow, "Competitive Effects of Railroad Mergers," Journal of the Transportation Research Forum Vol. 38, No. 1, pp. 64-75, 1999.

58) Lee, H., K. Smith, C. Grimm and A. Schomburg, "Timing, Order and Durability of New Product Advantages with Imitation," Strategic Management Journal Vol. 21-1, 2000, pp. 23-30.

59) Carter, C., R. Kale and C. Grimm, "Environmental Purchasing and Firm Performance," Transportation Research Part E: Logistics and Transportation Review, Vol. 36, 2000, pp. 219-228.

60) Young, G., K. Smith, C. Grimm and D. Simon, "Multimarket Contact and Resource Heterogeneity: A Competitive Dynamic Perspective," Journal of Management 26 (6), 2000, 1217-1236.

61) Shaffer, B. T. Quasney and C. Grimm, "Firm Level Performance Implications of Nonmarket Actions," Business and Society Vol. 39, No. 2, June 2000.

62) Johnson, C., R. Krapfel, Jr. and C. Grimm, "A Contingency Model of Supplier-Reseller Satisfaction Perceptions in Distribution Channels," Journal of Marketing Channels Vol. 8, No. ¼ 2001, pp. 65-90.

63) Smith, K, C. Grimm and W. Ferrier, "King of the Hill: Dethroning the Industry Leader," Academy of Management Executive, Vol. 15, Number 2, May 2001, pp. 59-70.

- 64) Ferrier, W., C. MacFhionnlaoich, K. Smith and C. Grimm, "The Impact of Performance Distress on Aggressive Competitive Behavior: A Reconciliation of Conflicting Views" Managerial & Decision Economics, Special Issue on "The Dynamics, Context, and Consequences of Strategy" Vol. 23, Issue 4-5, 2002, pp. 301-316.
- 65) Patterson, K., C. Grimm and T. Corsi, "Adopting New Technologies for Supply Chain Management," Transportation Research Part E: Logistics and Transportation Review Vol. 39E, No. 2, March 2003, pp. 95-121.
- 66) Lee, H., Smith, K. G. & Grimm, C. M. "The effect of new product radicality and scope on the extent and speed of innovation diffusion." Journal of Management, Vol. 29 (5), October 2003, pp. 753-768. **WINNER OF AWARD FOR BEST PAPER PUBLISHED IN JOURNAL OF MANAGEMENT IN 2003.**
- 67) Patterson, K., C. Grimm and T. Corsi, "Diffusion of Supply Chain Technologies," Transportation Journal Vol. 43, No. 3, Summer 2004, pp. 5-23.
- 68) L. Cheng and C. Grimm, "The Application of Empirical Strategic Management Research to Supply Chain Management," Journal of Business Logistics (forthcoming).
- 69) D. Basdeo, K. Smith, C. Grimm, V. Rindova and P. Derfus, "The Impact of Market Actions on Firm Reputation" Strategic Management Journal (forthcoming).

Articles in Edited Volumes

- 70) Grimm, C., "Horizontal Competitive Effects in Railroad Mergers," Research in Transportation Economics, Vol. 2, Theodore E. Keeler, editor, JAI Press, 1985, pp. 27-53.
- 71) Harris, R. and C. Grimm, "Revitalization of the U.S. Rail Freight Industry: An Organizational Perspective," International Railway Economics, K.J. Button and D.E. Pitfield eds., Gower Publishing Company, 1985, pp. 49-84.
- 72) Grimm, C. and J. Holcomb, "Choices Among Encompassing Organizations: Business and the Budget Deficit," Business Strategy and Public Policy, David Beam, Al Kaufman, and Alfred Marcus, eds., Quorum Books, New York, 1987, pp. 105-118.

73) Smith, K., C. Grimm, and M. Gannon, "Competitive Moves and Responses Among High Technology Firms," Handbook of Business Strategy: 1989-1990, Harold E. Glass, ed., Warren, Gorham and Lamont, N.Y., N.Y., 1990, pp. 31-1 through 31-11.

74) Grimm, C. and G. Rogers, "Liberalization of Railroad Policy in North America," Transportation Deregulation: An International Perspective, K. Button and D. Pitfield, eds., Macmillan, London, 1991.

75) Grimm, C. and R. Harris, "Access and Competition Policy in the U.S. Rail Freight Industry: Potential Applications to Telecommunications," Sustaining Competition in Network Industries through Regulating and Pricing Access, D. Gabel and D. Weiman, eds., Kluwer Publishing, Boston, 1998.

76) Grimm, C. and R. Windle, "Regulation and Deregulation in Surface Freight, Airlines and Telecommunications," in Regulatory Reform and Labor Markets, J. Peoples, ed., Kluwer Academic Publisher, Boston, 1998..

77) Grimm, C. and C. Winston, "Competition in the Deregulated Railroad Industry: Source, Effect and Policy Issues," in S. Peltzman and C. Winston, editors, Deregulation of Network Industries: The Next Steps, Brookings, Washington, D.C. 2000, pp. 41-72.

78) Dresner, M. and C. Grimm, "Public Policy and Logistics," in Handbook of Logistics and Supply-Chain Management, edited by A.M. Brewster, K.J. Button, and D.A. Hensher, Pergamon, Amsterdam, 2001.

Articles in Journals with Internal Review Boards

79) Grimm, C. and R. Harris, "The Financial Performance and Prospects of Railroads in the South and Southwest," Texas Business Review 56 (6), November/December 1982, pp. 257-262.

80) Grimm, C. and R. Harris, "Vertical Foreclosure in the Rail Freight Industry: Economic Analysis and Policy Prescriptions," ICC Practitioners' Journal 50 (5), July/August 1983, pp. 508-531.

81) Corsi, T. and C. Grimm, "Transportation Education in the 1980's: An Examination of Teaching Materials," Transportation Practitioners' Journal 52 (1), Fall 1984, pp. 27-39.

82) Grimm, C. and J. Kling, "Integrating Microcomputers into a Transportation and Logistics Curriculum," Defense Transportation Journal Vol. 44, No. 5, October 1988, pp. 14-22.

Articles in Proceedings (other than those listed above)

83) Grimm, C., "Public Interest Evaluation of Recent Rail Mergers," 1981 Eastern Transportation Law Seminar Papers and Proceedings, Association of ICC Practitioners, Washington, D.C., pp. 171-176.

84) Grimm, C., "Promoting Competition in the Railroad Industry: A Public Policy Analysis," Transportation Research Forum Proceedings, 1984, pp. 222-227.

85) Grimm, C. and K. Smith, "Impact of Deregulation on Railroad Strategies and Performance," Transportation Research Forum Proceedings, 1985, pp. 540-544.

86) Corsi, T., C. Grimm and R. Lundy, "ICC Exemptions of Rail Services: Summary and Evaluation," Transportation Research Forum Proceedings, 1985, pp. 86-92.

87) Corsi, T., C. Grimm and R. Smith, "Motor Carrier Strategies in a Changing Environment: An Empirical Analysis," Transportation Research Forum Proceedings, 1986, pp. 177-180.

88) Grimm, C., K. Smith and R. Blankinship, "Railroad Strategies and Performance: An Exploratory Study," 1987 Eastern Academy of Management Proceedings, pp. 25-28.

89) Smith, E., M. Gannon, C. Grimm and G. Young, "Competitive Advantage in Diverse Industries," Proceedings of the Second Biennial High Technology Conference, University of Colorado, Boulder, Colorado, January 1990.

90) Grimm, C., "The Impact of Entry and Concentration in Australian Aviation: A Test of Contestability Theory," Transportation Research Forum Proceedings, 1992.

91) Sapienza, H. and C. Grimm, "The Importance of Founder, Start-Up Process, and Structural Variables in Entrepreneurial Firms: A Study of the Shortline Railroad Industry," Frontiers of Entrepreneurship Research, 1994.

Other Publications, Reports and Monographs

Grimm, C., "Combining Scholarly Research with Public Policy Evaluation," ITS Review, Vol. 5, No. 2, Institute of Transportation Studies, University of California, February 1982.

Grimm, C., "Strategic Motives and Competitive Effects in Railroad Mergers: A Public Policy Analysis," Dissertation Series,

Institute of Transportation Studies, University of California, August 1983 (UCB-ITS-DS-83-1).

Grimm, C., "Preserving and Promoting Rail Competition," Report to the National Industrial Transportation League, 1984.

Grimm, C., "Econometric Techniques to Estimate Rail Costs," Report to the Railroad Accounting Principles Board, General Accounting Office, Washington, D.C., October 1985.

Roberts, M., T. Corsi and C. Grimm, "Benefit-Cost Analysis of Weight Limit Exemption for Vehicles Carrying International Freight in the Route 50 Corridor," Study Prepared for the State Highway Administration, State of Maryland, February 1988.

Deregulation of Domestic Aviation: The First Year, Bureau of Transport and Communication Economics, Australian Government Publishing Service, Canberra, Australia, 1991 (lead author).

Cambridge Systematics; Leeper, Cambridge and Campbell; T. Corsi, and C. Grimm, "A Guidebook for Forecasting Freight Transportation Demand," NCHRP Report 388, National Academy Press, Washington, D.C. 1997.

CONTRACTS AND GRANTS:

Course Development Grant, Joint MS Program in Telecommunications.

University of Maryland Center for International Education and Research (CIBER) Research Award, 1991.

University of Maryland Dingman Center for Entrepreneurship Research Award, 1990.

Small Business Administration, Small Business Development Center, University of Maryland. From 1985 - 1989, Ken Smith, Martin Gannon and I received funding to establish Center for the counseling and training of small business managers. We also conducted research on strategic management of small businesses, including travel agencies and electronic firms. (Amount: \$200,000)

Department of Education Business and International Education Program. During 1988 and 1989, I was part of a team which received a two-year grant for curriculum development, research and professional outreach. The program involves collaboration with

the Maryland Port Authority on research, outreach and internships.
(Amount: \$110,000).

Maryland Department of Transportation. During 1987/88 I worked with Tom Corsi and Merrill Roberts on a contract to study the impact of exempting Eastern Shore export container traffic from the 80,000 pound highway weight limitation. (Amount: 35,000).

University of Maryland Grant to Integrate Computer Use into the Classroom, 1985.

University of Maryland General Research Board Summer Research Award, 1984.

CONFERENCE PAPER PRESENTATIONS:

"Public Interest Evaluation of Recent Rail Mergers," presented at the 11th Association of ICC Practitioners' Eastern Transportation Law Seminar, October 1981.

"Stand-Alone Costs: Use and Abuse in Railroad Maximum Rate Determination," presented at the Eastern Economics Association Annual Meeting, March 1984 (with Philip Fanara).

"Promoting Competition in the Railroad Industry," presented at the Transportation Research Forum Annual Meeting, October 1984.

"The Politics of the Budget Deficit and the Role of Political Interest Groups," presented at the Annual Meeting of the Association for Public Policy Analysis and Management, October 1984 (with John Holcomb).

"Impact of the Staggers Act on Rates and Shipper Quality: Role of Shipper Size and Competition," presented at the American Economics Association/Transportation and Public Utilities Group Annual Meeting, December 1984 (with Ken G. Smith).

"The Effects of Railroad Mergers on Industry Performance and Productivity," Transportation Research Board Conference on Rail Productivity, University of Illinois, June 1985, (with Robert G. Harris).

"Environmental Variation, Strategic Change and Firm Performance: A Study of Railroad Deregulation," presented at the Annual Meeting of the Academy of Management, August 1985 (with Ken G. Smith).

"Management Characteristics, Strategy, and Strategic Change," presented at the Strategic Management Society Annual Meeting, Barcelona, Spain, October 1985 (with Ken G. Smith).

"Impact of Deregulation on Railroad Strategies and Performance,"

presented at the Transportation Research Forum Annual Meeting, November 1985 (with Ken G. Smith).

"ICC Exemptions of Rail Services: Summary and Evaluation," presented at the Transportation Research Forum Annual Meeting, November 1985 (with Thomas M. Corsi and Robert Lundy).

"Excess Branchline Capacity in the Railroad Industry," presented at the Transportation Research Board Annual Meeting, January 1986.

"The Economics of Coal Transportation: Implications for Railroad Shipper Strategies," presented at the Transportation Research Board Annual Meeting, January 1986 (with Les Selzer and Kent Phillips).

"The Organization as a Reflection of its Top Managers: An Empirical Test," presented at the Annual Meeting of the Academy of Management, August 1986 (with Ken G. Smith).

"Motor Carrier Strategies in a Changing Environment: An Empirical Analysis," presented at the Transportation Research Forum Annual Meeting, September, 1986 (with Thomas M. Corsi and Raymond Smith).

"Shifts in Use of Owner-Operators Among LTL General Freight Carriers Since the Motor Carrier Act of 1980," presented at the Transportation Research Forum Annual Meeting, September, 1986 (with Thomas M. Corsi).

"Environmental Variation, Decision Comprehensiveness and Performance," presented at the Strategic Management Society Annual Meeting, Singapore, October, 1986 (with Ken G. Smith, Martin Gannon, and Terence Mitchell).

"Gambit and Repartee: A Theory of Competitive Action and Responses," presented at the Annual Meeting of the Academy of Management, August 1986 (with Ken G. Smith).

"The Impact of the Environment on Personnel Policies: Management Characteristics in the U.S. Railroad Industry," presented at the Annual Meeting of the Academy of Management, August 1987 (with James Guthrie and Ken G. Smith).

"Mobility Barriers in the Motor Carrier Industry," presented at the Transportation Research Forum Annual Meeting, November 1987 (with Thomas M. Corsi).

"Railroad Cost Structure - Revisited" presented at the Transportation Research Forum Annual Meeting, November 1987 (with Tony Barbera, Kent Phillips and Les Selzer).

"The Impact of Rail Rationalization on Traffic Densities: A Test

of the Feeder Line Theory," presented at the Transportation Research Board Annual Meeting, January 1988 (with Les Selzer and Kent Phillips).

"Porter's Generic Strategies and Organizational Size," presented at the Strategic Management Society Annual Meeting, October 1988 (with Ken Smith).

"Predictors of Competitive Responses in the Domestic Airline Industry," presented at the Strategic Management Society Annual Meeting, October 1988 (with Ken Smith and Martin Gannon).

"ATLFs: Driving Owner-Operators into the Sunset," presented at the Transportation Research Forum Annual Meeting, November 1988 (with Thomas M. Corsi).

"Competitive Strategic Interaction: Action Characteristics as Predictors of Response," presented at the Annual Meeting of the Academy of Management, August 1989 (with Ming-Jer Chen and Ken G. Smith).

"Strategies and Performance in the Truckload General Freight Segment Before and After Deregulation," presented at the Transportation Research Forum Annual Meeting, October 1989 (with Thomas M. Corsi).

"Rivalry in the U.S. Domestic Airline Industry," presented at the Strategic Management Society Annual Meetings, October 1989 (with Ken Smith and Martin Gannon).

"Building Competitive Advantage in Diverse Industries," presented at the Boulder, Colorado Conference on the Management of the High Technology Firm, January 1990 (with Greg Young, Ken Smith, and Martin Gannon).

"Economic Effects of Surface Freight Deregulation," presented at the Transportation Research Board Annual Meeting, January 1990 (with Cliff Winston and Thomas Corsi).

"Strategies of Challenging Airlines at Hub-Dominated Airports," presented at the Transportation Research Forum Annual Meeting, October 1990 (with James Kling and Thomas M. Corsi).

"Size, Strategy, and Performance: LTL Motor Carriers," presented at the Transportation Research Board Annual Meeting, January 1991 (with Raymond Smith and Thomas Corsi).

"The Role of Firm Reputation in Competitive Interaction," presented at the Annual Meeting of the Academy of Management, August 1991 (with Leith Wain, Martin Gannon and Ken G. Smith).

"The Advantage of Size in the U.S. Trucking Industry," presented at the Transportation Research Forum Annual Meeting, November 1991 (with Carol Emerson and Thomas M. Corsi).

"The Impact of Entry and Concentration in Australian Aviation: A Test of Contestability Theory," presented at the Transportation Research Forum Annual Meeting, October 1992.

"Reevaluating Returns to Scale in Transportation," presented at the Transportation Research Forum Annual Meeting, October 1993 (with K. Xu, R. Windle and T. Corsi).

"Access and Competition Policy in the US Rail Freight Industry: Potential Applications to Telecommunications," presented at a conference on Sustaining Competition in Network Industries through Regulating and Pricing Access, CITI, Columbia University, November 1993 (with R. Harris).

"Engaging Competitors," presented to the Whitmore Conference, Dartmouth College, New Hampshire, September 1994, (with G. Young and K. Smith).

"Engaging a Rival for Competitive Advantage: Firm Resources and the Competitive Environment as Predictors of Competitive Firm Activity," presented at the Annual Meeting of the Academy of Management, August 1994 (with G. Young, A. Schomburg and K. Smith).

"David and Goliath: Strategies for Challenging the Dominant Rival," presented at the Annual Meeting of the Academy of Management, August 1994 (with K. Smith, T. Corsi and J. Kling).

"Wealth Effects of New Product Rivalry," presented at the 14th annual international conference of the Strategic Management Society, Paris, September 1994 (with H. Lee, K. Smith, and A. Schomburg).

"Business Distress and a Firm's Propensity to be Rivalrous," presented at the 14th annual international conference of the Strategic Management Society, Paris, September 1994 (with C. MacFhionnlaoich and K. Smith).

"Industrial Organization Economics, Resource-Based Theory, and Schumpeterian Perspectives on Competitive Advantage: Toward an Action-Based Model of Advantage," presented at the Annual Meeting of the Academy of Management, August 1995 (with K. Smith).

"Strategic Groups and Rivalrous Firm Behavior: Towards a Reconciliation," presented at the Annual Meeting of the Academy of Management, August 1995 (with K. Smith and G. Young).

"Shareholder Wealth Effects of New Product Rivalry," presented at the Annual Meeting of the Academy of Management, August 1995 (with H. Lee and K. Smith).

"Creative Destruction and Competitive Dynamics: An Action-Based Study of Industry Dethronement and Market Share Erosion," presented at the Annual Meeting of the Academy of Management, August 1996 (with W. Ferrier and K. Smith).

"The Rate of International Alliance Formation: The Role of Firm Resources, Strategy, and Industry Structure," presented at the Annual Meeting of the Academy of Management, August 1996 (with G. Young and K. Smith).

"An Assessment of the Validity of Competitive Dynamics Research," presented at the Annual Meeting of the Academy of Management, August 1996 (with G. Young, M. Becerra and K. Smith).

"The Rate of International Alliance Formation: The Role of Firm Resources, Strategy, and Industry Structure," presented at the 16th annual international conference of the Strategic Management Society, Tempe, Arizona, October 1996 (with G. Young and K. Smith).

"Performance Implications of Market and Non-Market Actions," presented at the Annual Meeting of the Academy of Management, August 1997 (with T. Quasney and B. Shaffer).

"Multimarket Contact, Resource Heterogeneity, and Rivalrous Firm Behavior," presented at the Annual Meeting of the Academy of Management, August 1997 (with G. Young and K. Smith).

"Performance Implications of Market and Non-Market Actions," presented at the Annual Meeting of the Academy of Management, August 1997 (with T. Quasney and B. Shaffer).

"Techniques of Transportation Analysis: Costs," discussant at Transport Policy and Economics Conference in Honor of John R. Meyer, Kennedy School of Government, Harvard University, September 1997.

"A Conceptual Model of Supplier-Reseller Satisfaction Perceptions in Distribution Channels," Academy of Marketing Science, Coral Gables, Florida, 1997 (with C. Emerson and R. Krapfel).

"The Impact of Financial Condition on Competitive Behavior: Towards a Reconciliation of Competing Views," presented at the Annual Meeting of the Academy of Management, August 1998 (with C. MacFhionnlaoich, W. Ferrier and K. Smith).

"Competitive Effects of Railroad Mergers," Transportation Research

Forum Annual Meetings, Philadelphia, October 1998 (with J. Plaistow).

"The Canadian Experience with Competitive Access, " Transportation Research Board Annual Meeting, January 1999.

" Predicting Order and Timing of New Product Moves: The Role of Top Management," presented at the Annual Meeting of the Academy of Management, August 1999 (with A. Srivasta, H. Lee and K. Smith).

"Competition in the Deregulated Railroad Industry: Source, Effect and Policy Issues," presented at the AEI-Brookings conference on Deregulation of Network Industries, December, 1999.

"Future of Rail Regulation," presented at the Alliance for Rail Competition Second Annual Rail Customer Forum, Washington, D.C., March 1, 2000.

"The State of Railroad Research," presented at the Transportation Research Forum Annual Meeting, Annapolis, November 2000.

"Investigating the Action Dilemma: Untangling the Relationships Between Firm Activity, Rival Activity, and Firm Performance," presented at the Annual Meeting of the Academy of Management, August 2001 (with P. Derfus and K. Smith).

Discussant, Workshop on Airline and National Strategies for Dealing with Airport and Airspace Congestion, College Park, March 2001.

Participant, Federal Railroad Administration and Surface Transportation Board Joint Roundtable on Rail Freight Industry, June 2002.

"A Schumpeterian Perspective on Innovation," presented at the Leading Through Innovation Research Conference, College Park, January 2003.

"The Role of Conduct in the Structure, Conduct, Performance Relationship," presented at the Annual Meeting of the Academy of Management, August 2003 (with P. Maggitti, P. Derfus and K. Smith).

"The Impact of Market Actions on Firm Reputation," presented at the Annual Meeting of the Academy of Management, August 2003 (with D. Baseo, V. Rindova, P. Derfus and K. Smith).

"Merger Analysis in the Post-Staggers Railroad Industry," presented at a conference on Competition Policy and Merger Analysis in Deregulated and Newly Competitive Industries, Madison Wisconsin, June 2005.

"Firm Action, Rival Action and Firm Performance: Understanding the Effect of Competitive Interdependence," presented at the Annual Meeting of the Academy of Management, August 2005 (with P. Maggitti, P. Derfus and K. Smith).

RESEARCH AWARDS:

Journal of Management 2004 best paper award, for the paper determined to be the best published in 2003 in the *Journal of Management*.

Academy of Management 2000 best paper award, for the paper determined to be the best published in 1999 in the *Academy of Management Journal*.

Award for best paper, marketing channels track, Academy of Marketing Science conference, Coral Gables, Florida, 1997.

Award for the best airline paper and best paper overall, 1990 Transportation Research Forum Conference.

Plowman Award for the best paper, 1987 Transportation and Logistics Educators Conference.

Regular Common Carrier Conference Award for the best motor carrier paper, Transportation Research Forum Annual Meeting, September, 1986.

EDITORIAL AND REVIEWING ACTIVITIES:

Consulting Editor (1991-1993) Journal of the Transportation Research Forum.

Editorial Review Board, Journal of Transportation Management (1993-present).

Editorial Review Board, Transportation Research - Part E (2001-present).

Editorial Review Board, Journal of the Transportation Research Forum (2001-present).

PROFESSIONAL AFFILIATIONS:

American Society of Transportation and Logistics; Transportation Research Forum; American Economics Association & Transportation and Public Utilities Group; Academy of Management; S; Strategic Planning Society.

TEACHING AND ADVISING:

Courses Taught

BMGT 370 (Introduction to Transportation: also served as course coordinator)
BMGT 372 (Introduction to Logistics Management)
BMGT 476 (Computer Models in Transportation and Logistics)
BMGT 495 (Business Policy)
BMGT 670 (Economic Environment of Business)
BMGT 671 (Managerial Economics)
BMGT 683 (Global Economic Environment)
BMGT 770 (Transportation Theory and Analysis)
BMGT 798 (Field Studies in Industry and Competitor Analysis)
BMGT 808 (Seminar in Industrial Organization and its Application to Strategic Management; Seminar in Supply Chain Management Research)
ENTS 631 (Telecommunications Policy)

Teaching Awards

Allen J. Krowe Award for Teaching Excellence, College of Business and Management, 1988.

Selected as one of the top 15% teachers in the College of Business and Management (12 times)

Member of the Following Ph.D. Dissertation Committees:

Pamela Donovan (co-chair)
David Cantor (co-chair)
Victor Cheng (co-chair)
Tom Quasney (chair)
Kirk Patterson (co-chair)
Wally Ferrier (co-chair)
August Schomburg (co-chair)
Greg Young (co-chair)
Hun Lee (co-chair)
Carol Emerson (chair)
Cormac Mac Fhionnlaoich (co-chair)
Pam Derfus (co-chair)

Ayesha Malhotra
Ming Zhou
Stephanie Head
Chris Lin
Constantinos Christou
Chul Moon
Deborah Lyons
Jane Feitler
Laura Power
Ming-Jer Chen
Harry Sapienza
Jack Scarborough
James Kling
Robert Trempe
George Rubenson
Ven Sriram
Raymond Smith
Ritu Lohtia
Jason Chang
Douglas Meade
Barbara Houchen
Leith Wain
John Burgess
Douglas LaBahn
Ker-Tsung Lee
Yeon Myung Kim
Steven Chien
Chad Syverson
Eungcheol Kim
Helena Schweiger

SERVICE:

Department Chair, Transportation/Logistics, Business and Public Policy (December 1994-July 2003).

Chair, Teaching Enhancement Committee, 2004-present.

Member, APAC (Campus level committee, chaired by the Provost, charged with advising the Provost on strategic and programmatic matters) 2000-2003.

Member, Vice President for Administrative Affairs search committee (2002-2003).

Member, Committee to Critique MBA Program Report, 2005.

Member, Ad Hoc committee to design an EMBA program (2001-2002).

Member, MBA director search committee (2001)

Member, Provost's Committee to conduct five year review of Dean Howard Frank (2001).

Chair of Search Committee, Executive Director of the Center for Knowledge and Information Management, 1999.

Member, CRC T&P Committee, Don Riley (1998), Samer Faraj (2004), and Josh Newberg (2004); Gil Souza (2005).

Chair, Extra Merit Step for Non-Exempt Employees Committee, 1999.

Member, MBA 4th Track Committee (subcommittee of executive committee) (1996-1998).

Member, Strategic Planning Committee (subcommittee of executive committee). (1996-present).

College Workload coordinator (responsible for attending meetings with Provost and reps re: workload requirements and taking lead on filling out compliance forms).

Member, Executive Committee, Middlestates Accreditation Committee, University (Dan Fallon/Nelson Markley, Chair), Dec. 1995-1997.

Member, Faculty Composition and Development Section, AACSB Accreditation committee (1995).

Lead College Member on Campus Committee to form and fund a Global China Institute (1995).

Chair of Search Committee, Transportation, Business and Public Policy Faculty Positions (1994-5, 1995-6, 1996-7, 1997-8, 1998-9, 1999-2000).

Member, College Strategic Planning Committee (drafted section on MBA program), 1994-5.

Chair, MBA Oversight Committee, College of Business and Management (May 1994-Jan. 1995).

Member, MBA Oversight Committee, College of Business and Management (1992-1994).

Chair, ELM Coordinator's Committee, College of Business and Management, (1993-1994).

Member, External Communications Committee, College of Business and Management, 1994.

Chair, PR on Academic Quality Committee, 1993.

Member Technology Advancement Program Business Screening Panels (1986-1990).

Member, Faculty Grievance Hearing Board, College Park Campus (1991).

Member, College Budget Committee (1990-1991).

Member, Strategic Planning Steering Committee, and Chair, MBA Subcommittee, College of Business and Management (1989-1990).

Member, General Committee on Faculty Affairs, College Park Campus Senate (1984-1986, 1987-1988).

Elected Representative to the College Park Campus Senate (1988-1991).

Member, Graduate Committee, College of Business and Management (1987-1988).

Chairman, MBA Case Competition Subcommittee of the Graduate Committee (1987).

Faculty Assistant Coordinator, MBA/Rutgers Invitational Case Tournament (1986-1987).

Faculty Judge, MBA Case Competition, College of Business and Management (1989).

Member, Undergraduate Committee, College of Business and Management (1987-1988).

Faculty Co-Advisor, University of Maryland Transportation and Logistics Club (1985-1990).

Member, International Task Force, College of Business and Management (1986-1987).

Member, Dean's Computer Integration Task Force, College of Business and Management (1986-1988).

Participant in Planning Session for External Activities, College of Business and Management, Wye Woods (Sept. 1987).

Member of Multiple Faculty Search Committees (1985-present).

In November 1995, I presented testimony before the United States Senate and House Committees on Small Business at a joint hearing on "Railroad Consolidation: Small Business Concerns."

In March 2004, I presented testimony to the U.S. House of

Representatives Committee on Transportation and Infrastructure regarding railroad competition legislation.

In October 2005, I provided testimony to the Surface Transportation Board on the 25th Anniversary of the Staggers Rail Act of 1980.

**VERIFIED STATEMENT OF
GEORGE H. BORTS, Ph. D
Professor of Economics
Brown University**

Introduction.

My name is George H. Borts. I am Professor of Economics at Brown University, Providence, Rhode Island. My professional qualifications are attached as Appendix A. This statement is submitted in support of the Joint Comments of Western Coal Traffic League, Concerned Captive Coal Shippers, Western Fuels Association, the Edison Electric Institute, the National Rural Electric Cooperatives Association, and the American Public Power Association, in this proceeding.

The Staggers Act of 1980 was intended to reform the regulation of railroad service. The Act eased the restrictions on railroads' ability to enter new markets, to compete for competitive traffic, to engage in confidential contract agreements with shippers, and to abandon uneconomic services and facilities. The regulatory authorities, the Interstate Commerce Commission (ICC) and its successor the Surface Transportation Board (STB), were directed to facilitate the attainment of railroad revenue adequacy, to eliminate delays in permitting railroad mergers, to allow differential pricing, and at the same time to protect the ability of captive shippers to protest unreasonably high tariffs.

In many respects the Staggers Act has been a success. The railroads have enjoyed unprecedented growth in traffic, their revenues and profits have revived, productivity has increased, new markets have been developed, and competition has flourished through the use of confidential contracts. Using indicia employed by securities analysts, the railroads

are now revenue adequate, although the STB is reluctant to use the same financial standards or come to the same conclusion.

But there is a dark side to this progress. Permissive regulatory oversight of rail mergers has led to substantial decline in intra-modal competition. Rail mergers have eliminated all but five major rail systems, and competition has declined in markets where railroads have economic power over captive shippers. As they expire, confidential contracts are being replaced with public tariffs. In the absence of serious competition among rival railroads, the tariffs provide open signals of intent to allocate market shares and limit rate competition. Moreover, the STB rate regulation process has become a nightmare of delay, changing standards, and escalating costs for shippers who wish to protest rate increases.

The STB and its predecessor the ICC have refused over the years to allow shippers greater access to competition: In a series of decisions going back many years, shippers have been denied access to competition in cases involving joint rates and through routes, foreclosure of access through legalized bottlenecks, terminal trackage rights, reciprocal switching, and paper barriers affecting short lines. Competitive access to shippers has been sacrificed to enhance railroad market power.

In many parts of the country, railroad capacity on the most profitable services has not kept pace with traffic demand, and rate increases combined with differential pricing have been used as devices to ration capacity. In the last few years, selected shippers have faced rate increases as high as 100 percent, despite the absence of comparable changes in rail costs.

The Coal Rate Guidelines, issued by the ICC in 1985, was a bold attempt to define standards by which to judge the appropriate maximum level of tariffs that railroads could impose on captive shippers. The Guidelines introduced into regulation the concepts of the Stand-Alone Railroad (SARR) operating in a Contestable Marketplace. The SARR is a hypothetical construct to be used by a shipper protesting the legality of its rate. The SARR is designed by the shipper to carry its traffic and the traffic of other shippers, in the most cost efficient manner, using current technology, purchasing productive inputs at current prices, and enjoying the same market power and productive techniques over freight rates and rate divisions as the incumbent railroad whose service and geographic dimensions it mimics and replaces. To successfully protest a rate, the shipper has to show that SARR's revenue exceeds its Stand-Alone Cost (SAC), the cost of serving the shipper and other shippers whose traffic uses or benefits from the SARR's facilities.

A contestable market is one in which buyers and sellers have full knowledge of prices and production technologies, and are free to enter and leave the marketplace without cost. This is hardly a realistic description of the railroad industry, which has high capital entry costs because of the long life of the capital assets, and high exit costs in the form of high cost of finding alternative uses for the assets, and the cost of transferring the assets from one use to another. Nevertheless, contestability provides a measuring rod to determine whether railroad freight rates are too high relative to what would occur in a market with free entry and exit. For if the rates provide revenue in excess of what would be necessary to operate in a contestable market, they certainly exceed what is necessary to attract capital over the long run.

Over the years since the inception of the Guidelines, the ICC and STB have ironed out ambiguities of interpretation and have refined the economic concepts used. But procedural issues that should have been settled remain unclear. Moreover, the Guidelines have been under quiet attack by the STB through a process of reinterpreting key economic concepts, with the goal of limiting the competitive liberties of the SARR and reducing rate protection to shippers. The effect of the attack is to limit captive shippers' ability to demonstrate the unreasonableness of freight rates. The goal of revenue adequacy is now in the ascendancy. But the goal of protecting captive shippers has been sacrificed.

My discussion of these issues is divided into three parts. The first responds to the STB proposals for determining maximum freight rates in the light of abuses it now recognizes in its application of the uniform percent reduction methodology. The second part discusses the attempts to limit the magnitude of SARR traffic and limit the potential for rate reduction through the use of flawed tests designed to identify cross-subsidy between shippers. The third part focuses on the STB's proposed changes in methods for dividing revenue on cross-over traffic between the SARR and connecting railroads.

1. Determination of Maximum Freight Rates

A. The Percent Reduction Method.

In all recent coal rate cases, the STB has applied the equal percent reduction method to determine the magnitude of rate relief that a shipper receives after demonstrating that revenues exceed SAC. This approach has come under frequent criticism for its inconsistency with Ramsey Pricing principles, and for its susceptibility to

exploitation by defendant railroads. As acknowledged by the STB in the present Rulemaking Decision, the uniform percentage reduction approach allows a railroad to dictate the outcome of the rate reasonableness analysis through its establishment of the initial common carrier rate that is subject to challenge. The Board is now investigating methods that would eliminate this abuse.

The Board has proposed to eliminate the "percent reduction method" of determining the reparations due to a shipper who has successfully used the SAC methodology to demonstrate the existence of an illegal rail rate. Under SAC methodology, the complainant must demonstrate that the cost of carrying traffic on a SARR is less than the rail revenue that it generates. The excess revenue is conceptually rebated among the shipments carried by the SARR. Using the "percent reduction method", issue and non-issue traffic would be eligible for the same percent rate reduction, although only the issue traffic actually receives any rate relief.

The Board's proposal is an acknowledgment of the merit of shipper complaints that the "percent reduction method" creates an incentive for the railroad to "manipulate the outcome of the Board's regulatory process."

"A complainant's share of the SAC costs is a function of the starting point - the challenged rate. Accordingly, the higher the railroad sets the challenged rate, the higher the complainant's share of the SAC costs is deemed to be and the higher the resulting prescribed rate. Therefore a carrier could ensure itself of a favorable rate prescription even if the challenged rate were found unreasonable- just by setting the challenged rate at a high enough level." (Major Issues, p. 7)

Under the percent reduction method, the complainant can "win" its case, yet find itself paying a high rate that the carrier had set as its target at the outset.

B. Maximum Rates Based On SAC.

To prevent gaming, the Board has proposed a methodology to set maximum rates on captive traffic that are independent of the revenue earned by the SARR. The methodology takes two forms: one called MCM, or the Maximum Contribution Methodology, and the other called MMM or Maximum Markup Methodology.

Under MCM, SAC rates are determined by allocating SAC on a ton-mile basis to all shippers served by the SARR, with the proviso that no shipper can bear a greater allocation than its existing rate. If the SARR's revenue exceeds its SAC, and if the complaining shipper's SAC rate is less than the rate under complaint, the shipper will be entitled to reparations from the railroad.

One weakness of MCM is that it does not take into account cost differences among the SARR's shippers. This weakness is addressed by MMM, which would use URCS estimates of the variable cost of every shipper's traffic to calculate the maximum contributions towards SAC costs as a percentage markup over variable cost. No shipper would pay a greater percentage markup than it is presently paying. And again, the complaining shipper would have to show that overall SAC is less than the SARR's revenue, and that its allocated percentage markup over variable cost was less than the percentage markup implied by the rate under protest.

The Board is of the belief that both MCM and MMM are independent of the SARR's revenue. In contrast to the percent reduction method, there is no incentive for a railroad to engage in gaming the rate. The SAC rate is presumably independent of the rate under protest.

MCM and MMM are superior to the percent reduction method, both in terms of better consistency with Ramsey principles (particularly in the case of MMM) and as an antidote for gaming. But MMM and MCM may not eliminate the potential for gaming altogether. Care must still be taken to prevent a railroad from predetermining the result of a case through the initial rate-setting process as a consequence of the allocation rules for calculating overcharges.

This possibility is illustrated by the following example, which applies the MCM method and makes use of the cost and revenue numbers in the STB's discussion (Major Issues, pp 10 – 16). The numbers are reproduced in the table on the following page.

Suppose that shipper 1 had been paying \$15 per ton to ship 10 tons 100 miles under a contract about to expire, and the serving railroad desires to set and defend a rate increase in the \$1.25-\$1.50 range. If the railroad can make a reasonably accurate assessment of the logical traffic group that the shipper is likely to assemble, it could establish a new common carrier rate of \$25 per ton. Under MCM, shipper 1, now paying \$25, protests the rate, constructs a SARR, looks at Table 3 (Major Issues, page 11) and achieves an outcome of \$16.44 per ton, a reduction in the challenged rate, but a result squarely within the railroad's original target range.

Traffic Group Characteristics (STB Example)

Traffic Group	Tons	Miles	Ton-Miles	Rate/ton	Revenue	Revenue/ton-mile	MCM SAC Rate/ton
Shipper 1	10	100	1000	\$25	\$250	\$0.25	\$16.44
2	8	100	800	\$20	\$160	\$0.20	\$16.44
3	6	75	450	\$15	\$ 90	\$0.20	\$12.33
4	8	75	600	\$10	\$ 80	\$0.13	\$10.00
5	10	100	1000	\$5	\$ 50	\$0.05	\$ 5.00
Totals	42		3850		\$630		
SAC = \$500							

Source: STB Major Issues in Rail Rate Cases, Tables 2 and 3, pp. 10-11.

The foregoing also raises the question of which resulting rate is correct, considering that \$16.44 is not a unique solution to the SAC allocation problem. Had the allocation of \$500 SAC costs been based on tons rather than ton-miles, shipper 1 would have faced a SAC rate of \$15.56 a ton, not \$16.44.¹

¹ An allocation based on Tons rather than Ton-Miles would start by calculating the average SAC per ton of \$11.90 ($= \$500/42$ tons), a rate greater than that charged shippers 4 and 5, who are paying \$10 and \$5 respectively, and generating a total of \$130 of rail revenue. Continuing the text assumption that no higher rate may be charged these two shippers, the remainder of the SAC ($\$370 = \$500 - \$130$) must be collected from shippers 1, 2, and 3, at an average rate per ton of \$15.42 ($= \$370/24$ tons). But this is greater than shipper 3 is paying to move 6 tons. His rate stays at \$15, and his contribution to revenue

In its complaint, shipper 1 would also point out that under its original rate of \$15, the SARR would earn \$530 in total revenue, still in excess of the SAC of \$500, albeit by a smaller margin than the example in the text. Moreover, when shipper 1 paid \$15, its SAC rate based on tonnage allocation of SAC would also be \$15.²

The following conclusions emerge from this analysis:

- a. MCM and MMM are superior to the percent reduction method, because they are driven by SAC and relative markups of revenue over cost instead of solely by starting prices.
- b. The SAC rate for a complainant shipper is dependent on where its rate stands in the hierarchy of rates paid by other shippers served by the SARR.
- c. Under MCM and MMM the SAC rate still remains sensitive to the rate charged the SARR. For this reason, and because neither MCM nor MMM adheres strictly to Ramsey principles, the Board should remain open to consider other approaches in individual cases as alternatives to MCM/MMM.
- d. There remains an incentive for the railroad to game the system by imposing a rate increase greater than the rate likely to be justified by the SAC analysis. For the rate increase repositions the victimized shipper in the hierarchy of rates and makes it vulnerable to bearing a greater fraction of the total SAC. These examples

remains at \$90. The remainder of the SAC ($\$280 = \$370 - \$90$) is covered by shippers 1 and 2 who must pay a rate of \$15.56 per ton to carry a total of 18 tons.

² Again shippers 4 and 5 would pay their original rates of \$10 and \$5 per ton, leaving an average rate of \$15.42 per ton to be covered by shippers 1, 2, and 3. But \$15.42 is greater than the \$15 per ton rate actually paid by shippers 1 and 3. So their rates remain unchanged at \$15 a ton, and their revenue contribution stays at a total of \$240. The remainder of the SAC ($\$130 = \$500 - \$130 - \$240$) must be covered by shipper 2 at a rate of \$16.25 per ton ($= \$130/8$ tons).

show that one cannot rule out the likelihood that the greater the rate increase imposed on the shipper, the greater will be its SAC rate.

- e. Finally, the examples show the importance of applying an allocation method that does not result in the defendant retaining revenues in excess of those needed to cover total SAC.

2. The STB's Limitations on the SARR's Traffic Composition.

A. The PPL Test.

In its PPL-Montana decision, the STB promulgated a cross-subsidy test that a protesting shipper must meet. The Board required that the revenue generated by the traffic using the shipper's route on the SARR be sufficient to cover its attributable costs. In defining attributable cost, however, the Board broke dramatically – and improperly – from past policy and practice concerning the identification of so-called cross-subsidies. In the past, it was clear that no cross-subsidy existed if revenue earned by a particular segment of traffic exceeded its directly variable or short-run marginal cost. The Board apparently now holds the view that the attributable cost of a SARR also includes the investment cost of building a branch line to connect the SARR's trunk line with the shipper's generating facilities. By pronouncing an unacceptable cross-subsidy whenever revenues from traffic moving over an identifiable segment of a SARR were deemed insufficient to cover what amounts to the full SAC of that segment, the Board in PPL Montana upended established principles and precedents regarding cross-subsidy in the context of ratemaking generally, and the Guidelines in particular.

The PPL rule is a dramatic change from the Guidelines proposition that the SARR has the freedom to choose its traffic composition and construct facilities to provide service. It also conflicts with the concept of cross-subsidy as applied to the railroads under the "Management Efficiency" constraint, which focuses on whether traffic generates revenues in excess of short-run marginal costs and makes any (however modest) contribution to fixed cost. So long as the SARR's revenues are in excess of its costs, the Guidelines held that its rates are deemed to be excessive, and no shipper would be hurt if the SARR were forced to reduce rates to a complainant shipper. In effect, the new PPL cross-subsidy rule allows a SARR (and, thus, the incumbent) to keep excess revenues over SAC.

B. The Otter Tail Rule.

In its recent Otter Tail decision, the Board has attempted to take the cross-subsidy test one step further, and set an upper limit on the maximum relief that a complaining shipper might receive, assuming that its SARR passes the PPL test and has revenues in excess of SAC.³ Under Otter Tail, the successful complainant would be limited to relief equal to the lesser of the SARR's excess profit over total SAC or the shipper's excess freight rate charges over its attributable cost to the SARR. As applied by the Board in Otter Tail, this rule would limit the maximum relief to a SARR below what is possible under the Guidelines, especially for movements on lighter density lines.

When the Otter Tail rule is examined carefully, however, it becomes clear that this new test does not faithfully adhere to the Board's own stated definition of cross-subsidy in the context of CMP. Moreover, it implies a dramatic increase in the

³ See STB Decision in Docket No. 42071, Otter Tail Power Company v. BNSF Railway Company, January 25, 2006.

complexity and cost of coal rate litigation which is at odds with the agency's professed regulatory goals.

To illustrate these conclusions, I will use the stylized model of a stand-alone railroad that is presented in the Otter Tail decision on pages 8 – 11. As in the Board's discussion, there is no cross-over traffic.

The model is based on the assumption that there are three captive shippers receiving coal from mines in the PRB. As in Otter Tail, Shipper 1 who has challenged a PRB rate is located north of the PRB and receives coal from Cordero and other mines north of Cordero. Shipper 2, located near Shipper 1, also uses those core facilities, and takes coal from mines as far South as Rochelle. Shipper 3 is located South of the PRB and receives its coal exclusively from Cordero and mines South of Cordero.

To analyze the costs to a SARR of serving the three shippers, I have depicted the rail line as a horizontal straight line, with Shippers 1 and 2 on the left side and Shipper 3 on the right. In between are three line segments: between Shippers 1 and 2 (at point A) and Cordero (at point B); between Cordero (point B) and Rochelle (point C); between Rochelle (point C) and Shipper 3 (point D). Assumed costs of each segment are also shown below. The cost of the AB segment will be \$70, the BC segment \$30, and the CD segment \$10.

Shippers 1 and 2	Cordero	Rochelle	Shipper 3
A ←	→ B ←	→ C ←	→ D
\$70	\$30	\$10	

To more clearly illustrate the shortcomings and implications of the Otter Tail test, we can assume that all the shippers cover their own variable costs. I will use the numbers

from the Board's discussion: The stand-alone cost of serving the three shippers is \$110; the total revenue contribution from Shippers 1 and 2 is \$110; and from Shipper 3 it is \$20. Using the PPL test, Shippers 1 and 2 must pay at least \$70 for their use of segment AB, and Shipper 3 must pay at least \$10 for its use of Segment CD.

The SARR is making a profit of \$20 (= Revenue of \$130 – SAC of \$110). Applying the PPL test, there is no cross subsidy paid to the complainant shipper by Shipper 3. Shippers 1 and 2 are more than covering their attributable costs of \$70. For the same reason, Shipper 3 is not being subsidized by the other two. Its revenue contribution more than covers its attributable costs of \$10.

The three Shippers' revenue contributions exceed \$110. How much of a rate reduction might be given to Shippers 1 and 2 without creating cross subsidy from Shipper 3? In Otter Tail, (pp. 10-11) the Board concluded that the refund may not exceed \$10, arguing that any refund in excess of \$10 would imply that Shippers 1 and 2 are paying less than their attributable costs of \$100.

The decision is in error, because it incorrectly assumes that the \$100 attributable costs for the A-B-C segments are solely the responsibility of Shippers 1 and 2. Under a correct application of the PPL test, Shippers 1 and 2 must cover the \$70 cost of the AB segment, but they alone are not responsible for the \$30 cost of the BC segment. That cost will be shared with Shipper 3. There is no reason why Shipper 3 should be permitted to use the SARR's BC segment for nothing. The only truly attributable costs are those that would disappear if the shipper's traffic disappeared. If Shippers 1 and 2 disappeared, Shipper 3 would still have to cover the cost of the BC segment. Service to Shipper 3 would then cost \$40.

Shipper 3 is certainly willing to pay for the use of the BC segment, as witness its willingness to pay a rate of \$20, far in excess of its attributable cost. Indeed, Shipper 3 benefits from the use of the BC segment, for it is necessary to connect with the mines located between Rochelle and Cordero. One must conclude that the revenue contribution from Shippers 1 and 2 can be reduced to as low as \$90 without imposing a higher rate on Shipper 3. Shipper 3 benefits from the presence of Shippers 1 and 2, even though it does not use the AB segment.

So long as Shipper 3 is willing to pay a contribution for the use of the BC segment, Shippers 1 and 2 should be allowed to benefit by reducing the revenue contribution they must make toward the operation of the SARR. In this circumstance, it is inaccurate and improper to regard Shipper 3's contribution to the cost of the BC segment as an involuntary subsidy. It is willingly paying a rate of \$20 over and above the variable costs of transporting its coal. It cannot go off on its own and set up a SARR that would charge it less than the \$20 it is currently paying; indeed, the implication of the example is that its rate could double. It is not valid for the Board to argue that Shipper 3 would be subsidizing Shippers 1 and 2 by contributing \$10 to running the SARR.

To summarize: The Board erred in its assumption that Shippers 1 and 2 must pay at least \$100 to cover their use of segments AB and BC, forgetting that the cost of using BC will be covered in part by a contribution from Shipper 3. This mistake leads to another, namely its conclusion that any rate reduction cannot lower the revenues of Shippers 1 and 2 below \$100. I have shown that a rate reduction of \$20 to Shippers 1 and 2 would eliminate the excess of SARR revenue over SAC, and still would leave Shipper

3 no worse off than before and far better off than having to construct its own SARR to connect with segment BC.

This analysis has strong cautionary conclusions for the application of the PPL/Otter Tail cross-subsidy rules.

- a. The PPL test can only be applied to the comparison between the complainant shipper's revenue and the costs that would be saved were it to disappear from the market. This is consistent with the concept of cross-subsidy as understood prior to PPL Montana. It is not possible to devise a PPL test for the users of the BC segment.
- b. It is incorrect to include all of the cost of the BC segment in the attributable cost of Shippers 1 and 2. Because of the overlapping routes and the benefits that go to the users of the BC segment, it is impossible to attribute its costs exclusively to either group of shippers. The cost of the BC segment must be borne by all of its beneficiaries.
- c. Because the Board's example overstates the attributable costs of Shippers 1 and 2, it correspondingly understates the complainant shippers' excess freight charges over their attributable cost, and therefore understates the magnitude of potential recovery of overcharge.

3. The Division of Cross-Over Revenues

A. SARR Divisions Should Be Market-Based

A SARR, like any other carrier, can select how it wants to enter a market. There is no requirement in the real-world that a carrier provide origin-to-destination service for all of its customers and, in many instances, one carrier will originate the traffic and one or more connecting carriers will carry that traffic to destination. Any requirement that a SARR provide origin-to-destination service would, as a result, violate the contestability principles that assure a SARR faces no entry barriers.

Because the SARR is not required to carry traffic from origin to destination, it is frequently necessary to calculate a revenue division between the SARR and connecting carriers. Under contestability theory, SARR divisions should be set using market-based principles and data. The SARR is a replacement for the defendant carrier for those services it replicates and, as a separate, independent carrier would be no different than any other carrier in negotiating market-based divisions with connecting carriers. For many years, the ICC and the Board agreed, holding that SARR divisions should be set using market-based divisions. However, since there was seldom any pertinent actual division data in the case records, the ICC and the Board utilized the Modified Mileage Prorate ("MMP") division method as a surrogate.

In several recent decisions, the STB has been employing the Modified Straight Mileage Prorate ("MSP") divisions method. The Board has described MSP as a "smoothed out" version of MMP.⁴ MSP is based on relative mileages of the movement for each shipper involved in cross-over traffic with an additional 100 mile origin and

⁴ See STB Decision in Docket No. 42069 Duke Energy Corp. v. Norfolk Southern Ry.m November 6, 2003 at 24.

destination mileage block. The Board has also stated in its decisions that market factors have "no place" in determining SARR divisions. I disagree with these conclusions, as did the ICC and the Board for many years. In the absence of reliable evidence of actual divisions, the better alternative is to rely on appropriate surrogates like MMP and MSP.

Also, in allocating revenue on cross-over traffic between the SARR and connecting railroads, the Board now believes that

"the goal . . . should be to ensure that a simplified SAC analysis using cross-over traffic will approximate a full SAC analysis, which provides origin-to-destination service for the entire traffic group." (Major Issues, page 17)

I disagree. A SARR is an independent replacement carrier and should not be responsible for ensuring off-SARR lines are recovering their SAC costs. The Board's new belief constitutes yet another major policy shift. For example, ICC Chairman McDonald stated in Nevada Power II:⁵

In designing a stand-alone railroad (SARR), it may be assumed that existing single-line traffic would become interline traffic that is passed on at hypothetical interchange points. Permitting this assumption and thus creating a SARR with so-called "cross-over traffic," will allow shippers to make effective cases before the Commission using smaller hypothetical SARRs than would otherwise be required. Viewing a SARR's interline rail partners simply as additional customers of the SARR means that the captive shipper is not required to ensure that far-flung rail lines are earning their full replacement cost of capital.

B. The Board's ATC approach for allocating cross-over revenues:

In its Major Issues Notice the Board proposes to introduce a new "Average Total Cost" (ATC) approach for allocating cross-over traffic revenues. This approach, the Board asserts, is designed to reflect the ratio of on line SAC costs represented by cross-over traffic to the total SAC costs of the complete movement. To accomplish this

⁵ 10 I.C.C. 2d at 280.

objective it would direct the parties to use URCS variable and fixed costs to calculate the average total costs of each cross-over movement, both on and off the SARR. The revenues from each portion of the movement would be allocated in proportion to the average total cost of the movement on and off the SARR. As described in the proposal, ATC would be calculated in the following steps:

- a. The railroad's (SARR and residual incumbent) average variable cost (AVC) per ton to haul the traffic over each segment would be estimated using unadjusted URCS.
- b. Average fixed cost (AFC) per ton of traffic would be calculated using the various segments. This would be done by calculating the railroad's system average fixed cost per route mile, using URCS to determine the railroad's total fixed costs and dividing this figure by the total route miles of track operated by the railroad.
- c. The system-average fixed cost per route mile could then be combined with the route miles and the traffic density of any particular segment of the railroad's network to estimate an AFC per ton associated with that segment.
- d. The ATC for any particular segment would be the sum of AVC and AFC for that segment.

Finally in application, if the ATC for the SARR were \$2 per ton, and the ATC for the residual system were \$5 per ton, then 28% ($\$2 / (\$5 + \$2)$) of the revenues from the cross-over movement would be allocated to the segment replicated by the SARR.

The Board claims that the ATC approach does not suffer from the deficiencies that led to its rejection of the Density Adjusted Revenue Allocation ("DARA"), and "should

address the railroad's legitimate concerns about the need to take into account economies of density when allocating revenue from cross-over traffic." As described by the Board:

"Under DARA, one would first use URCS to calculate the variable costs to haul the cross-over traffic over the facilities replaced by the SARR and over the residual incumbent's portion of the movement. Then one would compute each movement's total contribution to joint and common costs (the revenue in excess of variable costs) and allocate that contribution to each segment in proportion to that segment's relative distance and in inverse proportion to density. The longer the distance and the lighter the density of lines used, the more revenue DARA would attribute to that segment. The basic premise of the approach is that more revenue should be allocated to segments that are lighter density lines, because those segments, holding other factors constant, will have higher average total costs." (pp. 18-19)

The Board in Duke/NS rejected the DARA approach because it "contains the critical assumption that light-density lines have the same fixed costs per mile as heavy density lines" (at 29). The Board also found in Xcel that the DARA formula did not actually factor in economies of densities. ATC suffers from these same defects.

ATC is not a proper means to determine SARR divisions because it is not a market-based test. Also ATC runs into a fundamental theoretical problem in trying to allocate fixed costs. The ATC approach is comprised of URCS variable cost plus a component of the system average fixed cost based on a line segment's share of the system's route miles. This is guaranteed to allocate a higher share of cross-over revenue from any particular movement to the segment with the longer route. It is reasonable to allocate the variable cost of a particular movement on a route mile basis, because variable costs do increase with the length of haul among other indicia of rail output. But there is no rationale for allocating fixed costs on the same basis. For if fixed costs did vary with length of haul they would not be measured as fixed. There is no theoretical justification for allocating fixed costs. Indeed, if such a justification did exist we wouldn't need a

SAC approach to the determination of freight rates on captive movements. We would just allocate all of the fixed costs of the railroad's traffic on a route mileage basis.

C. Technical Deficiencies in the proposed ATC approach.

a. The Board's proposed ATC approach is deficient in a number of technical respects. Chief among them is the same failure that led the Board to reject DARA – ATC fails to take account of the strong likelihood that heavy and light density lines do not have the same investment costs per mile. Heavy density lines may be double tracked, require heavier rail, and greater investment in the other components of track structure, signaling, and communications facilities. For that reason alone, a mile of heavy density line would be expected to have greater annual depreciation and return on investment. Because URCS treats return on investment as 50% fixed, and depreciation is partially fixed, there may be a substantial error in the ACT method of allocating fixed cost. But we may never know the truth of the matter, because investment data by line segment usually is not made available by the railroad.

b. The URCS methodology makes it impossible to determine the level of density at which economies of density are exhausted. URCS total cost functions are linear, and therefore incapable of demonstrating rising marginal costs. Neither the ATC method nor DARA are accurate in measuring the effect of density on average total cost. For traffic levels at which economies of density have not been exhausted, average variable cost will decline with traffic, and conversely where economies of density have been exhausted. Because the URCS methodology relies on system-wide cost and traffic data, its cost coefficients are too insensitive to identify the segments with or without economies of

density. Thus the exhaustion of economies of density can hardly serve as a rationale for using an allocator derived by spreading fixed costs over route mileage.

D. Conclusions

In conclusion, the best method of estimating revenue divisions is one that relies on market behavior, namely actual railroad practices concerning rate divisions. A second best alternative is the use of appropriate surrogates for actual divisions, such as MMP or MSP. The Board's suggested method, ATC, has all of the flaws of DARA, and the Board has provided no credible explanation for its exhumation.

VERIFICATION

STATE OF RHODE ISLAND

SS:

COUNTY OF PROVIDENCE

GEORGE H. BORTS, being duly sworn, deposes and says that he has read the foregoing Verified Statement, that he knows the facts set forth therein, and that the same are true to the best of his knowledge, information, and belief.

George H. Borts

Subscribed and sworn to before me

this 27 day of April 2006.

Guillermo C. Spertini
Notary Public

My commission expires 11/08.

Appendix A
QUALIFICATIONS OF GEORGE H. BORTS

My name is George H. Borts. I am an economist. My address is 220 Slater Avenue, Providence, Rhode Island, 02906. I am a Professor of Economics at Brown University in Providence, Rhode Island, and from 1964 to 1967, I was Chairman of the Economics Department. I was managing editor, from 1969 to 1980, of the American Economic Review, a publication of the American Economic Association. In 1990 and 1991, I served as managing editor of the Brown University World Business Advisory.

I hold a B.A. degree from Columbia University, received in 1947; a Master of Arts degree from the University of Chicago, received in 1949; and a Ph.D. degree from the University of Chicago, received in 1953.

I am a member of the American Economic Association and Phi Beta Kappa.

The title of my doctoral thesis is "Cost and Production Relations in the Railway Industry." I have written a number of articles on cost functions and production functions in railroads. These were published in Econometrica and the Journal of Political Economy. I have also written on the indexation of rail contracts for the Transportation Journal.

In regulatory matters, I have presented evidence before the Federal Energy Regulatory Commission concerning market power in oil pipelines. I have served as a consultant to various Canadian provinces in several proceedings, investigations, and studies during the past forty years. I completed a study of cost of capital requirements for Canadian railroads, and presented evidence before the Canadian Transport Commission.

I have presented evidence before the Interstate Commerce Commission on issues involving cost finding, the cost of capital, revenue adequacy, the determination of market dominance and monopoly power, measurement of railroad productivity, freight car supply, compensation for the use of private hopper and tank cars, and railroad cost recovery procedures.

Most recently, I presented evidence before the Surface Transportation Board in

Docket No. 42088, Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company; Docket No. 42071, Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company; Docket Nos. 42069 and 42070, Duke Energy Corporation v. NS and CSXT; Docket No. 42054, PPL Montana LLC v. Burlington Northern and Santa Fe Railway Co., Docket No. 42051, Wisconsin Power and Light Co. v. Union Pacific Railroad Co., Docket No. 42022, FMC Wyoming Corp. v. Union Pacific Railroad Co., Docket No. 41989, Potomac Electric Power Company v. CSX Transportation, Inc., Docket Nos. 41626, 41242, and 41295, the so-called Bottleneck Regulation Cases; Finance Docket No. 32760, Union Pacific Corporation - Control and Merger - Southern Pacific Rail Corporation; and Finance Docket No. 32630 (Sub. No. 1), Omaha Public Power District - Burlington Northern Railroad Company, Crossing Compensation.

I have also presented evidence before the Interstate Commerce Commission in Finance Docket No. 32549, Burlington Northern Railroad Company - Control and Merger - The Atchison, Topeka and Santa Fe Railway Company; Docket No. 41242, Central Power and Light Company v. Southern Pacific Transportation Company; Docket No. 37038, Bituminous Coal--Hiawatha, Utah to Moapa, Nevada; Docket No. 38025S, Dayton Power and Light Company v. Louisville and Nashville Railroad Company; Docket No. 38301 S, Coal Trading Corporation et al. v. Baltimore and Ohio Railroad et al.; Finance Docket No. 27590 (Sub-No. 1), Approval of the Pooling of Car Service With Respect to Flat Cars, Trailer Train Co., et al.; Docket No. 39169, Shippers Committee, OT-5, v. The Ann Arbor Railroad Company et al.; Ex Parte No. 347 (Sub-No.2), Rate Guidelines-- Non-Coal Proceedings; Docket No. 39896, U.S. Clay Producers Traffic Association, v. Boston and Maine Corporation et al.; and Docket No. 39117, LO Shippers Action Committee v. Aberdeen and Rockfish Railroad Company, et. al. I have also presented evidence in the Coal Rate Guidelines investigations, Ex Parte No. 347; revenue adequacy investigations, Ex Parte No. 353 and 393; and market dominance investigations, Ex Parte No. 320.

In June 1986, I participated as one of four economic experts in the Railroad Accounting Principle Board's Colloquium on Cost Issues. In February 2006, I participated in the GAO Workshop on Rail Regulation.

I have served as a consultant to the National Science Foundation, to the Undersecretary of Commerce for Transportation, to the New England Motor Freight Association, to the National Motor Freight Traffic Association, the Western Coal Traffic League, and to the New England Telephone Company.

I have also served as an arbitrator of disputes over rail freight contracts.

In addition to research in transportation, I am co-author of a book with J.L. Stein, entitled: Economic Growth in a Free Market, published by the Columbia University Press in 1964. I am author of a monograph entitled, Regional Cycles of Manufacturing Employment, published by the National Bureau of Economic Research in 1959. I have also published articles on regulatory matters and on regional and international economics in the American Economic Review, the Journal of Political Economy, the Journal of International Economics, and in various conference volumes.

I. INTRODUCTION

My name is Thomas D. Crowley. I am an economist and the 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. My qualifications and experience are attached to this verified statement as Attachment No. 1.

In its February 27, 2006 notice of proposed rulemaking in Ex Parte No. 657 (Sub-No. 1), the Surface Transportation Board ("STB") requested comments regarding the proper application of the development of both stand-alone costs and variable costs in maximum rate case determinations based on constrained market pricing principles. In this Verified Statement, I will discuss the STB's three (3) proposed replacement methodologies for the percent reduction approach for calculating a maximum reasonable rate. I will also discuss the STB's proposed approach to allocated revenues on cross-over traffic. Finally, I will discuss the STB's proposal to change the discounted cash flow ("DCF") model analysis time period from 20 years to 10 years.

The remainder of my Verified Statement is organized under the following topical headings:

- II. Methodologies for Calculating a Maximum Reasonable Rate
- III. Division of Revenues on Cross-Over Traffic
- IV. DCF Model Time Period

II. METHODOLOGIES FOR CALCULATING A MAXIMUM REASONABLE RATE

In recent applications of the stand-alone cost constraint to determine maximum reasonable rates, the STB has used the percent reduction methodology. The percent reduction method reduces *all* rates in the stand-alone shipper group by the same percentage, i.e., by an amount that produces revenues equal to stand-alone costs. Theoretically, this exercise maintains the existing relationships among the existing rates levels.

The STB has determined that the percent reduction methodology allows the carrier to manipulate the outcome of the STB's regulatory process. Because the issue traffic is only one shipment among many others in the stand-alone traffic group, the railroad can set the challenged rate at a level sufficiently high that when all rates are reduced to stand-alone costs, the issue traffic rate will still be at levels that are substantially higher than others comprising the traffic group.

In order to eliminate the problem of the railroads being able to manipulate the outcome of the stand-alone process, the STB is proposing to replace the percent reduction methodology with either the Maximum Contribution Methodology ("MCM") or the Maximum Markup Methodology ("MMM")^{1/}. These two methodologies have similar goals to the Reasonable Allocation Methodology ("RAM") and Generalized Percentage Reduction Methodology presented by Complainants in STB Docket No. 42088, *Western Fuels Association, Inc and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company* and STB Docket No. 41191 (Sub-No. 1) *AEP Texas*

^{1/} The STB has proposed two different approaches for application of the MMM methodology, the dollar markup method and the revenue to variable cost ratio method. Both of these method are discussed later in my testimony.

North Company v. The Burlington Northern and Santa Fe Railroad Company, respectively. Specifically, a rate reduction methodology should produce equitable rates on shipments in the stand-alone traffic group in a manner that avoids manipulation of the process by the parties. Additionally, the methodology should calculate the maximum contribution from each movement in the traffic group so that the total contribution from the traffic group will equal stand-alone costs but no movement will make a contribution higher than the contribution from the rate currently charged for that movement.

It is my opinion that the methodology used in a individual proceeding is dependent on the facts of an individual proceeding. Also, I believe that the Complainant in any given proceeding should, in its opening evidence, determine which of the methodologies is most equitable in that proceeding and it is incumbent upon the Complainant to defend its choice of the selected rate reduction methodology.

**A. MAXIMUM
MARKUP METHODOLOGY**

As a variant to the MCM methodology, the STB has proposed the MMM methodology. The STB indicated that the MCM methodology may not be appropriate in those circumstances where the stand-alone traffic group is diverse, such as where it is comprised of both short-haul and long-haul traffic, or both unit-train and manifest traffic. The STB stated that in those instances the traffic in the group could have differing cost structures and yet the MCM method would treat these movements similarly for purposes of their contribution to the total stand-alone costs.

As an alternative, MMM would rely on the Uniform Railroad Costing System ("URCS") variable costs for every movement in the traffic group and express the maximum contribution to stand-alone costs as a markup over variable cost, either in the form of a revenue to variable cost ("R/VC") ratio or as a maximum dollar contribution above variable cost. The STB has invited comments, assuming the MMM approach is adopted, on which markup method, i.e. the dollar markup method or the R/VC method, should be used.

Essentially the difference between the dollar markup method and the R/VC method is the allocation of the required contribution above variable costs to individual movements in order to cover stand-alone costs. The R/VC method allocates contribution in direct proportion to the variable cost of providing the service. The dollar markup method allocates contribution on a fixed amount above variable cost, expressed in either contribution per ton-mile or contribution per car-mile. The STB hypothesizes that the R/VC method may create a disincentive for a railroad to introduce productivity enhancing measures that would lower its cost of providing service because it would in turn also lower its revenues in direct proportion to its cost. The STB concludes, therefore, that the dollar markup could be a preferred approach.

I have examined the allocation of the contribution required using both approaches. Based on my analysis, I believe the R/VC approach is more appropriate than the dollar markup approach for two reasons. First, I disagree with the STB's hypothesis that the use of the MMM-R/VC approach in a stand-alone proceeding would create a disincentive to railroads to introduce productivity enhancing measures that would lower its cost of service. Railroads do not make decisions regarding

their cost effective operations or productivity enhancing measures on the basis of individual movements. Nor do they make productivity enhancing changes for their entire systems based on what complainants may or may not file with the STB in the future. Also, railroads do not attempt to guess what traffic may be included in a stand-alone traffic group when they decide on implementing potential productivity changes. As such, the STB's decision to use the dollar markup approach or the R/VC approach likely will not have any impact on a railroad's operating, investment or productivity enhancing decisions.

Second, the dollar markup method distorts the relationships among the rates charged to the stand-alone traffic group because of the reliance on a per-mile determination of the contribution provided by the individual shipments comprising the traffic group. For example, if two moves exist in a traffic group, both of which produce R/VC ratios of 300%, but one of the moves is 1,000 miles and the other is 100 miles, the per-mile contribution of the shorter move will be greater than that of the longer move. The dollar markup method will produce a much greater percentage reduction for the shorter move than for the longer move. In doing so, it will substantially alter the relationship between overall revenue to cost ratios for the two moves thereby ignoring the varying demand elasticities among the individual movements. Table 1 below provides an example of the impact of using the dollar markup approach compared with the R/VC approach.

Table No. 1
Hypothetical Example of Comparison
of MMM Dollar Markup and R/VC Approaches

Item (1)	Movement A (2)	Movement B (3)	Total (4)
<u>Revenue</u>			
1. Revenue per ton	\$30	\$6	--
2. Tons per car	100	100	--
3. Revenue per car ^{1/}	\$3,000	\$600	\$3,600
4. Loaded movement miles	1,000	100	--
5. Ton miles ^{2/}	100,000	10,000	110,000
<u>Variable Costs</u>			
6. Variable Cost per ton	\$10	\$2	--
7. Variable cost per car ^{3/}	\$1,000	\$200	\$1,200
8. R/VC Ratio ^{4/}	300%	300%	--
<u>Stand-Alone Costs</u>			
9. System Stand-Alone Cost	--	--	\$2,200
10. System Contribution Requirement ^{5/}	--	--	\$1,000
11. System R/VC ratio Requirement ^{6/}	--	--	183.3%
12. System Contribution per Ton-mile ^{7/}	--	--	\$0.0909
13. R/VC Adjusted Rate ^{8/}	\$18.33	\$3.67	\$2,200
14. R/VC Ratio ^{9/}	183.3	183.3	--
15. Dollar Markup Adjusted Rate ^{10/}	\$19.09	\$2.91	\$2,200
16. Dollar Markup Adjusted R/VC Ratio ^{11/}	190.9	145.5	--

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- ^{1/} Line 1 x Line 2.
^{2/} Line 2 x Line 3.
^{3/} Line 2 x Line 5.
^{4/} Line 3 / Line 6.
^{5/} Column 4, Line 8 - Column 4, Line 6.
^{6/} Column 4, line 8 / Column 4, Line 6.
^{7/} Column 4, Line 9 / Column 4, Line 4.
^{8/} Line 5 x Line 10.
^{9/} Line 12 / Line 6.
^{10/} (Line 12 x Line 4) + Line 6.
^{11/} Line 15 / Line 6.

The maximum rate for Movement A in the above example using the R/VC approach produces the same relationship to variable costs as the maximum rate for Movement B (Line 14 above). By contrast and because of the disparity in the individual movement characteristics, the maximum rate for Movement A using the dollar markup approach results in a stand-alone rate to variable costs relationship that is considerably different than for Movement B (Line 16 above).

If the STB opts to use MMM, it should adopt the R/VC approach to allocating the required contribution to individual movements, in order to maintain the relationship among the rates charged to the individual movements in a SARR traffic group.

III. DIVISION OF REVENUES ON CROSS-OVER TRAFFIC

The STB has proposed to alter the method for determining the division of the revenues for traffic where the entire movement is not included in the stand-alone system, i.e. "cross-over traffic". Currently, the STB relies on the "Modified Straight-Mileage Prorate" ("MSP") methodology where revenue is allocated based on the relationship of the miles traveled on the stand-alone railroad to total movement mileage, with an additional 100-mile block credit for the originating and terminating railroad.

The MSP methodology is second-best to a methodology that relies upon the actual revenue divisions that the incumbent railroad receives. If the STB does not intend to rely on actual divisions information, then the STB should continue to utilize the MSP methodology.

The STB's notice in this proceeding indicates that a methodology, dubbed Average Total Cost ("ATC"), should replace its existing MSP methodology. As described by the STB, ATC is based on the distribution of total costs (variable plus a pro-ratio of fixed costs).

There are fewer problems that are readily apparent with the Board's proposed ATC methodology that renders it unworkable for a stand-alone cost proceeding.

First, the allocation of fixed costs - including the STB's proposed allocation based on route miles - is arbitrary and clearly resembles the fully allocated costing procedures rejected shortly after the institution of the Staggers Rail Act.

Second, the STB's notice in this proceeding stated that MSP is "simple and practical to apply" but "fails to take into account the defining characteristics of the railroad industry - economies of scale, scope and density" (Notice, page 18, footnote omitted). If MSP fails for this reason, then ATC also fails because the STB's proposal intends to rely on system average variable costs as determined by the URCS Phase III calculation and an allocation of fixed costs based on route miles. The application of these system factors to movement-specific rates will in no way recognize the economies of scale, scope and density which the STB is seeking.^{2/}

Third, use of MSP already is a conservative measure for determining revenue divisions^{3/} for movements where the stand-alone railroad is a small portion of the total haul and rates are due to expire in a short time period. Under MSP, the revenue allocation to the stand-alone railroad is driven by the percentage of the total haul. Under MSP the stand-alone railroad receives the same mills per ton-mile as the incumbent railroad. The railroad industry is noted for the tapering effect on rates as length of haul increases. For example, a 100 mile haul may exhibit rates of 20 mills per ton-mile while a 1000 mile haul may show a rate of 10 mills per ton-mile. Under MSP, for a 1000 mile haul where the stand-alone railroad reflects 100 miles of a total of 1000 miles, the stand-alone railroad receives the same 10 mile per ton-mile rate level as the remainder of the incumbent railroad without any consideration of the tapering effect.

^{2/} One could argue that the actual rate levels for the movements in the stand-alone railroad already recognize the relevant economies because the incumbent railroad would have considered these factors, along with the competitive alternatives for the shipper, in setting the rate levels.

^{3/} The MSP methodology (or the ATC methodology) does not consider the rates available to the stand-alone railroad after a contract or pricing authority expires. In today's environment, shippers are receiving large rate increases when rates expire and the railroads are asked for new rate quotes. MSP, which assumes the continuation of the current rates, with current adjustment mechanisms, does not pick up the prospective rate jump.

Fourth, as a practical matter, if the ATC approach to determining revenues on cross-over traffic is accepted and ordered to be used in proceedings where evidence has already been filed, the complainant may be placed in a position of having to redo the traffic group because of ATC. Obviously no complainant wants to have to redo an entire stand-alone case because the STB changed the method for calculating divisions on cross-over traffic but that is exactly what could happen. Stated differently, as the ATC divisions approach produces different revenues than does the MSP approach promulgated by the STB in recent proceedings, the traffic group selected using MSP will not necessarily maximize profitable traffic when using the ATC approach. The ATC approach will force a complainant to evaluate and include longer haul traffic in the stand-alone group. Therefore the complainant in proceedings where the traffic group was selected using the MSP approach will be forced to reevaluate the selection of the traffic group if the ATC approach is adopted.^{4/}

^{4/} I am also in agreement with the testimony of Dr. George Borts regarding the allocation of revenues on cross-over traffic, submitted concurrently with this statement.

IV. DCF MODEL TIME PERIOD

Using a hypothetical stand-alone railroad that begins operation in 1Q05, I compared the rate levels that would be produced by a 20-year Discounted Cash Flow Model ("DCF") with those that would be produced by a 10-year DCF model. In both instances, I assumed that the traffic, revenues and operating expenses for the first 10 years were identical and in both cases I assumed that the initial road property investment is identical.^{5/} The results of my research are summarized below on a DCF table by table basis.

The only problem with the STB's proposed change in DCF model life occurs in Table E below. If this problem of amortizing debt over the DCF model life as opposed to correctly amortizing it over the asset life is corrected, the two models based on different time periods will produce the same answer (subject to the caveat in ^{19/} below). If this problem is not corrected and debt is amortized over a shorter DCF model time period, a difference between the 20 year and 10 year DCF model will be created and stand-alone costs will increase.

A. TABLE A - COST OF CAPITAL

Table A displays the cost of debt and equity as well as the weighted cost of capital used to compute capital carrying charges. Table A is identical for both the 10-year and 20-year models, except for removal of the cost of capital information for years 11 through 20 in the 10-year model.

^{5/} The STB suggests that when using a 10-year model the road property investment may actually be lower than that required for a 20-year model assuming constant traffic growth because the forecasted tons to be moved in the peak year (20th year) would be greater in the 20-year model than in the peak year (10th year) of a 10-year model, thus requiring a lower investment to move the peak year tons. For this analysis, I have assumed the identical road property investment for both the models.

B. TABLE B - INFLATION INDEXES

Table B contains the inflation indices used to inflate road property assets, operating costs and land. The inflation rates are identical for years 1 through 10 in both models. There are two differences in the Table B, first the inflation rates for years 11 through 20 are eliminated from the 10-year model. Second the overall average annual inflation rates are different in the two models because they are based on two different time periods. The average annual inflation rates in Table B are used in determining the present value of the replacement cost in Table F. Table 3 below displays the overall average inflation rates calculated in both the 10-year and 20-year models beginning 1Q05.

Table 3			
<u>Average Annual Inflation Rates by Asset Group</u>			
<u>Asset Group</u>	<u>10-year</u>	<u>20-year</u>	
(1)	(2)	(3)	
1. Materials & Supplies, excluding fuel	2.56%	3.14%	
2. Materials & Supplies	1.54%	1.37%	
3. Wages and Supplements	2.78%	3.42%	

**C. TABLE C - ROAD
PROPERTY INVESTMENT VALUES**

Table C displays total start-up investment at 1Q05 levels. The calculation of road property investment costs is based on construction cost information. There is no difference in Table C between the 10-year and 20-year models.

**D. TABLE D - INTEREST
DURING CONSTRUCTION**

Table D calculates the Interest During Construction ("IDC") which would accrue on the assets of the SARR. Table D also contains both the total IDC amount and the IDC that is debt-related. IDC is calculated based on the investment values in Table C, the composite cost of capital from Table A and the length of finance period for each account. The construction schedule was used as the basis for determining the length of the finance period. The amount of IDC that is debt-related is calculated by multiplying the investment by the length of the finance period, the SARR's debt percentage, and the cost of debt. Debt-related IDC is shown as an interest deduction during the construction period (July 1, 2002 through December 31, 2005 for a model beginning 1Q05).

There is no difference in Table D between the 10-year and 20-year models.

**E. TABLE E - AMORTIZATION
SCHEDULE OF ASSETS
PURCHASED WITH DEBT CAPITAL**

The amortization schedule calculates the annual interest payment required for the debt-related portion of the SARR's investment. The debt-related portion of the SARR investment base (referred to as principal) is developed by multiplying the debt percentage from Table A for the appropriate investment period times the sum of the total investment and the interest during construction. The quarterly annuity payment is then calculated based on the principal, the debt rate from Table A and the lives of the individual assets. The amount of interest included in the quarterly payment is calculated by multiplying the beginning balance (this equals the principal in the first period) by the interest rate.

The only difference in Table E in the two models is the elimination of quarters 41 through 80 in the 10-year model.

The model used by the STB in previous decisions amortizes interest payments over the life of the model, i.e., 20-years, rather than the life of the asset. Amortizing the interest payments over the life of the asset is consistent with actual practice in the rail industry, as rail carriers do not base their financial decisions on a particular arbitrary time period, but rather on the accepted useful life of each asset they acquire.

**F. TABLE F - PRESENT VALUE
OF REPLACEMENT COST**

Table F calculates the additional investment (on a present value basis) the SARR would have to make if the hypothetical railroad replaced each asset indefinitely at the end of each asset's life. This additional investment is added to the initial investment in Table I prior to determining the quarterly cash flows.

The present value of the replacement cost is different for the two models because of the difference in the average annual inflation rate calculated in Table B is used to calculate the replacement cost. As discussed earlier this value is different for the 10-year model compared with the 20-year model (See Table 1 above).

**G. TABLE G - TAX
DEPRECIATION SCHEDULES**

Table G displays the tax depreciation required under the Federal Tax Code currently in effect. Investment in communications (Account 26), signals and interlockers (Account 27), and the track accounts (Accounts 8, 9, 11 and 12) were depreciated over seven (7) years employing a 200 percent declining balance methodology with a change to straight-line depreciation. Investment in bridges and culverts (Account 6), fences and roadway signs (Account 13), roadway-buildings (Account 17), fuel stations (Account 19), shops and enginehouses (Account 20) and public improvements (Account 39) was depreciated over 15 years using a 150 percent declining balance method with a change to straight-line depreciation. Investment in grading (Account 3) and tunnels (Account 5) were depreciated over 50 years using straight-line amortization. Investment in engineering (Account 1) was depreciated over five (5) years using straight-line amortization.

The only difference between the two models is that the tax depreciation schedules are eliminated for years 11 through 20 in the 10-year model.

**H. TABLE H – AVERAGE ANNUAL
INFLATION IN ASSET PRICES**

Table H computes the average annual inflation rate by which the real levelized revenue in Table I is indexed. The weighted average inflation rate was used because Table H calculates the required revenues necessary to recover the investment. All road property accounts are indexed at the quarterly rates shown in Table B. The difference in the two models is the weighted average annual inflation rate that is calculated using the last two quarters in column (9) of Table H. Because the 10-year model is using quarters 39 and 40 and the 20-year model is using quarters 79 and 80, the inflation

rates that are used to make this calculation are different. The 10-year model produces an annual weighted inflation index of 2.31% compared with the 20-year model's annual weighted inflation index of 3.26%. (from Table B above)

I. TABLE I – DISCOUNTED CASH FLOW

Table I displays the calculation of the capital carrying charge and associated flow of funds required to recover the total road property investment. Inputs to Table I were taken from the tables described above. Table I calculates the quarterly capital carrying charge required over the 10-years (40 quarters) and 20-years (80 quarters) after consideration of the applicable tax liability.

The total start-up investment is comprised of the road property investment shown in Table C, the interest during construction calculated in Table D, and the present value of replacement investment calculated in Table F. The result equals the total investment which has to be recovered from the quarterly revenue stream over the life of the SARR.

In calculating the quarterly revenue stream, the tax benefits associated with interest on the investment financed with debt from Table E and the road property tax depreciation from Table G are included.

The cash flow shown in Column (8) of Table I is the amount remaining each quarter after the payment of federal and state tax liabilities. This cash flow is used for payment of return on and return of total investment and IDC in the stand-alone railroad. This quarterly figure is then discounted by the fourth root of the composite annual cost of capital from Table A, adjusted to reflect the assets being placed in service on January 1, 2005. The present value cash flow is then summed for each

quarter along with the future cash flow and the total equals the total cost that must be recovered. The future cash flow is an approximation of the value of the unconsumed assets and remaining tax liabilities of the SARR and serves to reflect the cash flow required to account for the value of the assets not consumed during the DCF model's life.

The development of the quarterly levelized capital carrying charge requirement is a relatively simple calculation, i.e., starting capital carrying charge requirement times the quarterly index factor from Table H which will recover total investment during the DCF model period. The starting capital carrying charge requirement which recovers the total investment is developed through an iterative process. The DCF model begins with a specified amount for the cost and then runs through the calculation described above to develop the cumulative present value of the cash flow. If this cumulative number does not equal the total costs to be recovered from the quarterly revenue flow (start-up investment plus the present value of the replacement investment) the starting cost is adjusted upward or downward as necessary and the DCF model runs through the calculations again. This process is repeated until the starting cost results in a cumulative present value cash flow which equals the required investment to be recovered from the quarterly revenue flow.

The difference in Table I for the two models is two-fold. First, as discussed under Table F the present value of the replacement cost is different in the 10-year model than in the 20-year model because of the difference in the average annual inflation rate for the two model as discussed under Table B. Second, the cash flow values for the future life of the model (the last line of Table I), after the 10-year or 20-year period, respectively are different under the two models. The reasons for this are as follows:

**1. Column (3) Quarterly Levelized
Capital Carrying Charge Requirement**

The amount for future payments is calculated by dividing the last quarter of the model (either quarter 40 or quarter 80) by the quarterly real cost of capital. As the last quarter amount for the 10-year model is only 73% of the value for the 20-year model, the future value in the 20-year model is larger than that in the 10-year model.

**2. Column (4) Interest on
Investment Financed with Debt**

The amount for future payments for the 10-year model is substantially higher than that for the 20-year model because at the end of the 20-year model more interest on investment financed with debt has been paid and therefore there is less future interest deductible for taxes.

3. Column (5) Tax Depreciation

The amount for the future payments for the 10-year model is substantially higher than that for the 20-year model because at the end of the 20-year model more tax depreciation has been taken and therefore there is less future tax depreciation available at the end of the model.

4. Column (6) Annual Federal Tax Payments

Both models calculate tax payments by subtracting Columns (4) and (5) from Column (3) times the applicable federal tax rate. The federal tax payment calculation is shown on Table J.

5. Column (8) Cash Flow

The future cash flow for the 10-year model is lower than for the 20-year model as it is based on the future capital carrying charge (Column (3)) less the Federal Tax Payments (Column (6)).

**6. Columns (9) and (10) Present Value of Cash
Flow & Cumulative Present Value of Cash Flow**

The present value of cash flow is Column (8) discounted by the compounded nominal cost of capital at the end of the DCF model life. In the 10-year model the discount factor in quarter 40 is less the discount factor in quarter 80 resulting in a higher present value for the 10-year model compared to the 20-year model. Column (10) is the sum of the previous Column (10) value plus the current Column (9) value.

**J. TABLE J - COMPUTATION OF FEDERAL
TAX LIABILITY - TAXABLE INCOME**

Table J – Part 1 displays the calculation of the SARR's federal tax liability. The two models have different results because the income tax liability is based on the taxable income of the SARR, which in turn is determined from Table I, Column (3) and Columns (4) and (5), which as discussed above, Column (3) is different in the two models because of the difference in the present value of the replacement cost calculated in Table F.

K. TABLE K - OPERATING EXPENSES

Table K displays the operating expenses incurred in each year of the SARR's operation based on the traffic levels. Table K uses the annual operating costs, states them on a quarterly basis and indexes them to reflect inflation over the life of the SARR based on the inflation rates shown in Table B. The only difference in the two models is the elimination of years 11 through 20 from the 10-year model.

L. TABLE L - SUMMARY OF SAC

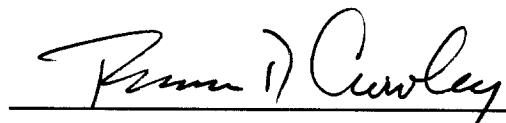
Table L summarizes the total stand-alone cost for the SARR based on investment and operating costs. The capital requirement from Table I and the annual operating expenses from Table K are presented and summed in Table L for each quarter and each year the SARR operates.

As stated previously, the STB model currently amortizes interest on the debt portion of capital over the life of the 20-year model, rather than over the life of the asset. This results in the 10-year model producing a substantially higher result than the result produced by the 20-year model because at the end of the 20-year model more interest on investment financed with debt has been paid and therefore there is less future interest due. In order for the STB's proposed 10-year model to produce the same answer the current 20-year model produces, the STB has to amortize the Table E debt over the life of asset and not over the life of the model. With this one adjustment, the two models will produce the same answer (assuming all other inputs are the same).

VERIFICATION

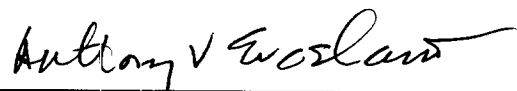
COMMONWEALTH OF VIRGINIA)
)
CITY OF ALEXANDRIA)

I, THOMAS D. CROWLEY, verify under penalty of perjury that I have read the foregoing Verified Statement of Thomas D. Crowley, that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.



Thomas D. Crowley

Sworn to and subscribed
before me this day of May 1, 2006.



Anthony V. Evanshaw III
Notary Public for the State of Virginia

My Commission expires: September 30, 2007

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 and 5901 N. Cicero Avenue, Suite 504, Chicago, Illinois 60646.

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 solving economic, marketing and transportation problems. 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 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

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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 the Powder River Basin to various utility destinations in the midwestern and 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, both inbound raw materials and outbound paper products to and from paper mills, crude and pelletized iron ore, crushed stone, soda ash, aluminum, fresh fruits and vegetables, TOFC/COFC traffic 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 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.

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I have presented evidence before the Interstate Commerce Commission ("ICC") in Ex Parte No. 347 (Sub-No. 1), Coal Rate Guidelines - Nationwide which is the proceeding that established the methodology for developing a maximum rail rate based on stand-alone costs. I have submitted evidence applying the ICC's stand-alone cost procedures in every proceeding before the ICC and its successor the Surface Transportation Board ("STB").^{1/}

^{1/} ICC Docket No. 36180, San Antonio, Texas, Acting By and Through Its City Public Service Board v. Burlington Northern Railroad Company, et al.; ICC Docket No. 37029, Iowa Public Service Company v. Burlington Northern, Inc.; ICC Docket No. 37038, Bituminous Coal - Hiawatha, Utah to Moapa, Nevada; ICC Docket No. 37437, Arizona Electric Power Cooperative, Inc. v. The Atchison, Topeka and Santa Fe Railway Company, et al.; ICC Docket No. 37809, McCarthy Farms, Inc. et. al. v. Burlington Northern, Inc.; ICC Docket No. 38025S, The Dayton Power and Light Company v. Louisville and Nashville Railroad Company; ICC Docket No. 38301S, Coal Trading Corporation v. Baltimore & Ohio Railroad, et al.; ICC Docket No. 38301S (Sub-No. 1), Westmoreland Coal Sales Company v. Denver and Rio Grande Western Railroad Company, et al.; ICC Docket No. 38783, Omaha Public Power District v. Burlington Northern Railroad Company; ICC Docket No. 39002, Utility Fuels Inc. v. The Burlington Northern Railroad Company, et. al.; ICC Docket No. 39386, The Kansas Power and Light Company v. Burlington Northern Railroad Company and Union Pacific Railroad Company; ICC Docket No. 40155, Lower Colorado River Authority and City of Austin, Texas v. Missouri-Kansas-Texas Railroad Company; ICC Docket No. 40224, Iowa Power and Light Company v. Burlington Northern Railroad Company; ICC Docket No. 41528, Kansas City Power & Light Company v. Missouri Pacific Railroad Company; ICC Docket No. 41685, CF Industries, Inc. v. Koch Pipeline, L.P.; STB No. 41185, Arizona Public Service Company and PacifiCorp v. The Atchison, Topeka And Santa Fe Railway Company; STB Docket No. 41191, West Texas Utilities Company v. Burlington Northern Railroad Company; STB Docket No. 41295, Pennsylvania Power & Light Company v. Consolidated Rail Corporation, CSX Transportation Inc. and Norfolk Southern Railway Company; STB Docket No. 41989, Potomac Electric Power Company v. CSX Transportation Inc.; STB Docket No. 42006, Omaha Public Power District v. Union Pacific Railroad Company; STB Docket No. 42012, Sierra Pacific Power Company, Idaho Power Company v. Union Pacific Railroad Company; STB Docket No. 42022, FMC Wyoming Corporation and FMC Corporation v. Union Pacific Railroad Company; STB Docket No. 42051, Wisconsin Power and Light Company v. Union Pacific Railroad Company; STB Docket No. 42054, PPL Montana LLC v. The Burlington Northern and Santa Fe Railway Company; STB Docket No. 42056, Texas Municipal Power Agency v. The Burlington Northern and Santa Fe Railway Company; STB Docket No. 42057, Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern and Santa Fe Railway Company; STB Docket No. 42058, Arizona Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company; STB Docket No. 42069, Duke Energy Corporation v. Norfolk Southern Railway Company; STB Docket No. 42070, Duke Energy Corporation v. CSX Transportation, Inc.; STB Docket No. 42071, Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company; STB Docket No. 42072, Carolina Power & Light Company v. Norfolk Southern Railway Company; STB Docket No. 42077, Arizona Public Service Company & PacifiCorp v. The Burlington Northern and Santa Fe Railway Company; STB Docket No. 41191 (Sub-No. 1), AEP Texas North Company v. BNSF Railway Company; STB Docket No. 42088, Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company.

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Moreover, I have developed numerous variable cost calculations utilizing the various formulas employed by the ICC/STB for the development of variable costs for common carriers, with particular emphasis on the basis and use of Rail Form A and its replacement costing formula the Uniform Railroad Costing System ("URCS"). I have utilized Rail Form A/URCS 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 Interstate Commerce Commission, Surface Transportation Board, 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 testimony in a number of court and arbitration proceedings concerning the level of rates, rate adjustment procedures, rail operating procedures and other economic components of specific contracts.

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

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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 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, 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 economic problems.

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 midwestern 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

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northern and midwestern 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.

JOINT VERIFIED STATEMENT OF
DOUGLAS W. CAVES, Ph.D, B. KELLY EAKIN, Ph.D,
MARK E. MEITZEN, Ph.D, AND PHILIP E. SCHOECH, Ph.D

Introduction

We are Drs. Douglas W. Caves, B. Kelly Eakin, Mark E. Meitzen, and Philip E. Schoech. We are economists with Christensen Associates, a professional firm that conducts economic studies for public, private, and government interests. Dr. Caves is Vice-Chairman of Christensen Associates, Dr. Eakin is Senior Vice President, Dr. Meitzen is Vice President, and Dr. Schoech is Vice President. Full details of our qualifications are contained in our biographical sketches and resumes, copies of which are appended to this Joint Statement.

Dr. Caves was actively involved in the development and implementation of the productivity measure that the Interstate Commerce Commission adopted in 1989 in its *Ex Parte No. 290 (Sub-No. 4)* docket, to modify the quarterly Rail Cost Adjustment Factor ("RCAF"). Dr. Caves has submitted written testimony before the ICC on this subject on eleven separate occasions. He also submitted expert testimony before the agency on issues related to capital costs, inflation forecasts, and entry barriers under the stand-alone cost ("SAC") standards in Docket No. 42088, *Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company*, Docket No. 41191 (Sub-No.1), *AEP Texas North v. The Burlington Northern and Santa Fe Railway Company*, Docket No. 42056, *Texas Municipal Power Agency v. The Burlington Northern and Santa Fe Railway Company*, and in Docket No. 41191, *West Texas Utilities Company v. Burlington Northern Railroad Company*.

Dr. Eakin has been with Christensen Associates since 1994. During this time, he has worked on pricing and productivity issues facing several regulated industries. Prior to joining Christensen Associates, he taught numerous graduate courses in cost, productivity, and the organization and regulation of industry. Dr. Eakin has worked with Dr. Caves and Dr. Meitzen in co-sponsoring evidence presented to the Surface Transportation Board relating to the proper method of indexing stand-alone operating costs and the proper methodology for allocating rate reductions to account for the excess of stand-alone revenues over stand-alone costs in Docket No. 41191_1, *AEP Texas North v. The Burlington Northern and Santa Fe Railway Company*.

Dr. Meitzen has been with Christensen Associates since 1990. He has worked with both Dr. Caves and Dr. Laurits R. Christensen in their analyses of the railroad industry. Dr. Meitzen has studied and written on the economic principles of efficient pricing, including regulatory methods of achieving competitive outcomes in noncompetitive markets. This includes extensive analysis and developed expertise in the areas of contestability theory and SAC principals. He has substantial experience with various pricing and rate regulation methods, including price caps and performance-based regulation such as those found in the telecommunications and electric power industries. On behalf of private clients, he has experience with application of the Surface Transportation Board's Constrained Market Pricing standards and, in particular, the Board's current SAC methodology, including testimony in Docket No. 41191_1, *AEP Texas North v. The Burlington Northern and Santa Fe Railway Company*, and Docket No. 42056, *Texas Municipal Power Agency v. The Burlington Northern and Santa Fe Railway Company*.

Dr. Schoech has been with Christensen Associates since 1976. He has worked with both Dr. Caves and Dr. Laurits R. Christensen in their analyses of the railroad industry. Dr. Schoech has studied and written on total factor productivity and its measurement. He has been involved in productivity studies of the railroad, postal, telecommunications, electric, and natural gas

industries. He has substantial experience in the application of total factor productivity studies to performance based regulation.

Our joint testimony in this proceeding is submitted on behalf of the Western Coal Traffic League, the Concerned Captive Coal Shippers, Western Fuels Association, Inc., the Edison Electric Institute, the National Rural Electric Cooperative Association, and the American Public Power Association (collectively, the “Coal Shippers”). One of the issues addressed in the current Rulemaking is the determination of “a method for forecasting future operating expenses of a stand-alone railroad (SARR) that would reflect anticipated future productivity gains.”¹ While we agree with the Board that SARRs will enjoy future productivity gains, we demonstrate that the Board’s proposal in this Rulemaking is based on an incorrect premise of how and when SARRs will achieve such productivity gains.

We believe the Coal Shipper’s proposal to attribute 50% of RCAF-A productivity gains to the SARR in the first year of the DCF period (i.e., 50% RCAF-A and 50% RCAF-U) and increase this incrementally to 100% of RCAF-A productivity gains after the tenth year is a reasonable proposal. It is based on the structure of the Board’s proposal. However, in contrast to the Board’s proposal, the Coal Shipper’s proposal more accurately reflects the productivity gains the SARR is likely to enjoy immediately as well as the path of the SARR’s gains over time.

The Issue of Productivity Adjustments to Future Operating Expenses

Operating expenses for the SARR must be forecasted over the SAC test’s DCF period (currently 20 years). Generally, base-year operating expenses have been forecasted into future years using a forecast of a version of the rail cost adjustment factor (RCAF). Two variants of the

¹ STB Ex Parte No. 657 (Sub-No. 1), et.al., February 27, 2006 (“STB Rulemaking” or “current Rulemaking”), p. 2.

RCAF or combinations of same have been typically proposed in STB proceedings. Shippers have generally advocated a productivity-adjusted RCAF (such as RCAF-A) under the premise that the SARR will enjoy future productivity gains. In contrast, railroads have generally advocated the use of the RCAF unadjusted for productivity gains (RCAF-U) under the premise that because the SARR starts its life as a “most efficient” railroad, no additional productivity gains are likely for the SARR. All else equal, RCAF-U will produce greater forecasted operating expenses than a productivity-adjusted RCAF will.

The Board recognizes that the SARR will achieve future productivity gains. For example, in its *Wisconsin* decision, the Board stated that “It is not unreasonable to expect that an efficient railroad built today would realize future productivity gains by utilizing new technology as it is developed,” and notes that an example of this is the periodic replacement of information technology and communications systems.² In the current Rulemaking, the Board also acknowledges SARRs will enjoy future productivity gains:

We believe, however, that the index used to project the SARR’s operating expenses should reflect some anticipated productivity improvements for the SARR. Even a SARR designed to take advantage of all of the most recent technologies should experience some productivity improvements over an extended time frame. All companies “learn by doing,” achieving incremental productivity improvements. And the SARR would be able to take advantage of future technological improvements as they occur, just as existing railroads will.³

Despite the Board’s recognition of future productivity gains for SARRs, the Board has recently adopted RCAF-U in many of its decisions. The Board has done this based on its own assessment that both indexes are biased when used in this context to forecast operating expenses,

² STB Docket No. 42051, September 12, 2001 (*Wisconsin*), p. 106. In this case, the parties assumed that information technology and communications systems would be replaced every five years.

³ STB Rulemaking, pp. 20-21.

but that the upward bias resulting from the use of RCAF-U is less than the alleged downward bias resulting from the use RCAF-A.⁴

The Board's Proposal in the Current Rulemaking

The Board's proposal in this Rulemaking is an attempt to find an acceptable alternative methodology so that the Board will not be forced (from its perspective) to continue relying on RCAF-U, which it has recognized to be "imperfect"⁵ for this purpose. The Board's proposal begins by applying RCAF-U in the initial years of the DCF period and incrementally switches to RCAF-A in subsequent years. Specifically, the Board proposes a "hybrid," which is a weighted average of RCAF-U and RCAF-A, beginning with 100% RCAF-U in the first year and incrementally adding 5% RCAF-A in subsequent years (e.g., the index would be composed of 95% RCAF-U and 5% RCAF-A in the next year) until the index becomes 100% RCAF-A after year 20.⁶

While we agree with the Board that SARRs will enjoy future productivity gains, we demonstrate that the Board's proposal is based on an incorrect premise of how and when SARRs will achieve such productivity gains. In particular, there are sources of productivity gains that are not asset specific, or industry-specific. Consequently, even a technically efficient new entrant, as the SARR is hypothesized to be, will begin to experience productivity gains immediately.

Furthermore, for those elements of productivity improvement that are asset-specific, the phase-in time for such embodied productivity gains is related to the life of the asset. Some assets, such as rails and locomotives may have a relatively long lifecycle close to 20 years.

⁴ STB Rulemaking, p. 20.

⁵ STB Rulemaking, p. 20.

⁶ See STB Rulemaking, p. 21.

Other assets, such as computers and other information technology may have relatively short lifecycles, more along the line of three to five years. The lifecycle of a particular asset is in fact partially determined by the rate of technical advances for that technology. The more rapid the rate of technological change, the shorter the economic life span of an asset. Moreover, even for specific assets, there are often retrofits that can affect productivity growth even within the lifetime of the asset.

Thus, arbitrarily setting the phase-in period at twenty years fails to capture the process of technical change. Instead, a more accurate phase-in period for the embodied productivity gains must reflect the asset mix as well as the differential productivity impacts from particular assets. The more short-lived the mix of assets and the more the embodied productivity gains are in the shorter-lived assets, the shorter the phase-in period to eliminate productivity gain differences between existing railroads and a new SARR.

Potential Sources of Productivity Growth

Productivity growth can come from a number of sources including output growth (when economies of density or scale are present), improved managerial techniques, less restrictive work rules, process innovations, new technologies, and improved communications infrastructure (such as the development of the World Wide Web). The Board's predecessor, the Interstate Commerce Commission ("ICC"), recognized that productivity gains emanate from multiple sources. In their decision to implement a productivity adjustment for the RCAF, the ICC rejected the AAR's proposal that only "pure" productivity gains due to technological change be used for the RCAF productivity adjustment. The ICC noted and agreed with the Concerned Shippers that a more

general measurement that captured productivity gains from all sources was the appropriate productivity measure:⁷

Concerned Shippers object to the railroads' proposal to partition total factor productivity and only consider technological change for the purpose of adjusting RCAF. The shippers contend that such a limited notion of productivity growth violates the cost recovery principle. If there are economies of scale, density and capacity utilization, then scale, density and capacity utilization affect railroad input requirements. But such changes do not affect unit revenues. Thus, productivity gains associated with the aforementioned factors change the ratio of revenues to costs. The productivity adjustment is in their view intended to restore the initial relationship.

We conclude that the productivity measure used to adjust the RCAF should not be limited to the narrow definition proposed by the railroads. As noted, by witnesses Caves and Christensen, while the exact cause of productivity growth may have intrinsic interest, it is not germane to the issue of cost recovery. To the extent that the RCAF index will now be used to reflect changes in output costs, total factor productivity is the relevant measure, since all forms of productivity growth tend to reduce costs.

While numerous sources of productivity growth can generally be identified, a line-by-line or bottom-up quantification of where future productivity gains will come from is not necessary or cost-effective. Even when analyzing the historical performance of the railroads, it is not always possible to quantify the impact of each productivity source. This in part is due to the fact that these factors are often interconnected. For example, a new process innovation may lead to increased demand for transportation, which further reduces cost through economies of density. A more useful exercise in the context of SARR productivity growth is to look for how the SARR differs significantly from the industry, to examine qualitatively whether these differences are related to technology available to the SARR but not the industry as a whole, and to assess how much of future productivity gain in the industry could be attributed to the industry adopting the SARR technology. All other productivity growth should apply to both the SARR and the industry.

⁷ 5 I.C.C.2d, pp. 465-466.

As discussed above, the Board recognizes that future SARR operating expenses should be adjusted for productivity gains, but does not know what future productivity gains should reasonably be anticipated for the SARR. One of the major points of contention that has contributed to this uncertainty is the assertion that productivity gains are realized only as old assets, such as locomotives and rail cars, are replaced with newer technologies and, because the SARR starts out as the most efficient railroad with newer technologies, it is concluded that these sources of productivity gains are not immediately available to the SARR.⁸

However, the Board has recognized that, at least for some asset types like information technology, there should be no difference between the SARR and incumbent railroads (see *Wisconsin* at 106). Furthermore, in various cases before the Board, complaining shippers have noted that there are many sources of productivity growth that do not depend on the newest assets or newest technologies.⁹

In addition to pointing out that there are many other sources of productivity growth, complaining shippers have provided evidence regarding railroad assets and their influence on productivity growth. For example, using the Annual Reports Form R-1 for Class I railroads, Exhibit III-G-6 of AEP Texas North's opening evidence demonstrated that, "as of 2002 the average age of [Class I] railroad assets in service was only seven years."¹⁰ AEP Texas North concluded that, for a number of reasons, including the fact that the asset profile is not that much

⁸ By assumption the SARR starts out with all new assets. However, this is not necessarily the asset mix that would be chosen by a real-world efficient entrant. A real-world entrant would likely start out with a mix of old and new assets that would maximize its efficiency over time. By constraining the SARR to have all new assets, the SARR is prevented from making the appropriate economic optimizing decisions and, thus, is likely to start its life in a disequilibrium position. Therefore, because of the unrealistic assumption of all new assets, the SARR is likely to have higher costs and lower productivity growth than an actual entrant. The Board's proposal that the SARR start out with no productivity gains further exacerbates this divergence in efficiency between the hypothetical SARR and a real-world most efficient entrant that the SARR is supposed to represent.

⁹ For example, see *AEP Texas North* and *WFA/Basin*.

¹⁰ AEP Texas North Opening Evidence, March 1, 2004, at III-G-14 to 15.

different for SARRs and Class I railroads, SARRs would experience productivity gains similar to those experienced by the industry:¹¹

In *Duke/NS*, the Board accepted the defendant's argument that the productivity gains reflected in the RCAF-A result from the acquisitions and changes that existing railroads make "incrementally as their older technology assets wear out." *Duke/NS* at 37. As a new railroad, the Board reasoned, a SARR would not have a comparable asset profile (at least in terms of age), thereby making full application of the RCAF-A inappropriate. *Id.* See also *Carolina* at 27. AEP Texas submits that the Board's concern in this area is misplaced. For a number of reasons, ... the entering SARR would experience productivity gains over time similar to those experienced by the rest of the industry, and asset age at most is a tertiary factor in a railroad's pursuit of productivity gains.

Therefore, the SARR should not significantly lag incumbent railroads in benefiting from any productivity growth from this source. This evidence also indicates that, to the extent SARR's are assumed to start out with lower productivity gains than the industry average, it should not take them 20 years to catch up to the average.

Furthermore, a SARR may not suffer much lag in this source of productivity growth because an economically rational firm, including a SARR, will replace assets when it is beneficial to do so, regardless of the age of the asset. Generally, a firm will invest in new assets if the expected total cost of producing with the new assets is less than the variable costs of producing with existing assets, regardless of the remaining life of the existing assets. Furthermore, undepreciated amounts of old assets are irrelevant to the investment decision.¹²

¹¹ AEP Texas North Opening Evidence, March 1, 2004, at III-G-14 to 15.

¹² Professor Alfred Kahn states this basic economic principle:

The way for a company to decide whether to replace a piece of machinery (or plant or other equipment) is to compare the average *variable* cost of producing with it (AVCo) with the average *total* cost of production with new equipment (ATC_n). Only the variable costs of the old can be saved by turning to the new; the choice therefore is between continuing to incur those AVC, on the one hand, or incurring the ATC—including the capital costs as well—involved in purchasing a new machine. If the AVCo are smaller than the ATC_n it is economical to continue to use the old capital goods. But if, *regardless* of the fixed costs on the old, the AVCo are the greater, it is foolish not to scrap; every moment of continued production with the old means a greater drain on the company's resources, a greater avoidable cost of production, than would be involved in replacement.

Another consideration when evaluating the possibilities of SARR productivity growth is the fact that the SARR employees come from the same pool as the industry's. Those employees will be aware of the latest innovation and management techniques. Consequently, the SARR is on equal ground with the rest of the industry in terms of productivity gains arising through human capital. Furthermore, to the extent that those employees work with more modern equipment than the rest of the industry, they may be even more successful in realizing productivity gains from those innovations and management techniques than industry employees who are handicapped by older technologies.

Despite the Board's recognition that not all gains are tied to locomotive turnover (e.g., operations, management practices, learning-by-doing), the proposed solution in the current Rulemaking implicitly assumes that productivity gains are completely turnover related—otherwise the Board would have recommended a positive productivity factor in the first year. In fact, the assumption that SARR starts out with best management and operating practices and therefore has fewer opportunities for improvements in this area is contradicted by Board's practice of constraining SARRs to what are largely current incumbent railroad practices in a number of key operating areas. For example, there is a general Board policy that SARR operating plans cannot deviate from actual service levels unless it can be demonstrated that

In either event, the continuing, fixed costs on the old equipment—the depreciation that may not yet have been fully recovered, the return on net investment not yet fully written off, interest on debt already incurred—are irrelevant to the decision. Sunk costs such as these are bygones, unchangeable past history, and best forgotten. The way to maximize profit is to minimize the variable, or incremental, or avoidable costs of production (since the others are fixed anyway): and that means the variable costs for existing plant and the total costs for new.

affected shippers, connecting carriers and receivers would not object to such changes.¹³

Furthermore, the Board noted in *Duke*:¹⁴

Applying that principle in *West Texas Utilities Co. v. Burlington N.R.R.*, 1 S.T.B. 638, 667 (1996) (*West Texas*), the Board rejected an operating plan that would have increased average train length because “train sizes must reflect the operational constraints and restrictions faced by connecting railroads, coal mines, and utilities.” Similarly, in *McCarty Farms*, 2 S.T.B. at 467, the Board rejected an operating plan that would have changed the services being provided. As the Board explained, *id.* (footnotes omitted):

Car loading factors and train lengths cannot be set without regard to the practices and preferences of shippers and connecting railroads. Shippers control loading, and connecting railroads determine train length for traffic received in interchange.

Also, existing contract provisions constrain the SARR to actual railroad experiences such as in the calculation of locomotive spare margin.¹⁵ Board decisions on operating plans can also affect items such as the number of train and engine (T&E) personnel that are needed and maintenance of way (MOW) staffing levels.

While there may be reasonable bases for these operating plan restrictions, the conclusion is that the SARR is no better than incumbents in these areas, as it operates under the same constraints. Therefore, when opportunities for improvement become available to incumbents in these areas, they will also become available to the SARR.

Trends in Railroad Productivity

From the 1980's through the 1990's, railroad productivity growth exceeded productivity growth in the general economy. Table 1 compares the railroad productivity growth rates for various subperiods with the comparable rates of economy-wide productivity growth. The railroad industry productivity growth rates are based on the data underlying the RCAF

¹³ For example, see STB Docket No. 42069, November 5, 2003 (*Duke*) at 31, STB Docket No. 42057, June 7, 2004 (*Xcel*) at 23.

¹⁴ *Duke* at 31.

¹⁵ For example, see STB Docket No. 42071, January 25, 2006 (*Otter Tail*) at C-2, *Xcel* at 59-60.

productivity adjustment while the economy-wide productivity growth rates are based on the Bureau of Labor Statistics multifactor productivity index for the private nonfarm business sector.

Table 1
Comparison of Railroad and Economy-Wide Productivity Growth

Time Period	Railroad Productivity Growth	Economy-Wide Productivity Growth	Difference
1982-1986	1.7%	0.9%	0.8%
1982-1987	4.4%	0.8%	3.6%
1982-1988	4.4%	0.8%	3.6%
1982-1989	4.4%	0.7%	3.7%
1988-1992	5.0%	0.6%	4.4%
1989-1993	5.9%	0.5%	5.4%
1990-1994	5.9%	0.7%	5.2%
1991-1995	5.0%	0.6%	4.4%
1992-1996	9.7%	1.0%	8.7%
1993-1997	5.7%	0.7%	5.0%
1994-1998	3.5%	0.9%	2.6%
1995-1999	2.8%	1.0%	1.8%
1996-2000	4.2%	1.2%	3.0%
1997-2001	1.9%	0.9%	1.0%
1998-2002	2.2%	1.1%	1.1%
1999-2003	2.9%	1.4%	1.5%
2000-2004	1.9%	1.7%	0.2%

Beginning with the 1982-1987 period and continuing through the 1996-2000 period, railroad productivity growth generally exceeded economy-wide productivity growth by at least three percentage points. There were a number of reasons for this rapid rate of productivity growth. The deregulation of the railroads provided incentives for more efficient operations and allowed railroads pricing flexibility, which they used to provide more attractive services to their customers. Railroads were permitted to abandon underutilized track, and they were successful in reducing their workforce through measures such as the elimination of cabooses. Mergers between railroads also produced cost savings. In addition, there were productivity gains from

improvements in locomotives and track structures, centralized traffic control, computer-aided dispatch, and improved yard operations.

In recent years railroad productivity growth has slowed somewhat, while economy-wide productivity growth has accelerated, so that the difference in productivity growth rates has narrowed substantially. Recent productivity gains in both the railroad industry and the economy are being driven to a large extent by the computer and communications revolution currently underway. Railroads have been able to use advances in computing and communications power (including the development of the World Wide Web) to optimize network capacity management, improve transit times, communicate with customers, and track shipments. The computer and communications revolution has had similar impacts on the economy at large. These productivity gains do not require the turnover of long-lived assets in order to be realized. Furthermore, many of these gains are achieved through a “learning by doing” process, as new computer and communications applications are invented and disseminated. Even though investment in computer and communications technologies peaked in 2000, productivity growth since that time has accelerated as companies find new ways to utilize these goods.

In summary, the productivity growth data indicate that the railroad industry has largely exhausted the productivity gains resulting from deregulation. Recent railroad productivity gains are more comparable to those experienced in the economy overall. While the railroad industry productivity growth continues to exceed the economy-wide productivity growth, it now does so by a factor of two or less instead of by the factor of five or more as observed from the mid-1980s to the mid-1990s. This suggests that the current railroad productivity is more reflective of economy-wide productivity than of gains from past deregulation. An important implication is that near-future productivity gains by an efficient SARR would also be more reflective of the

economy productivity and therefore not that much different from gains experienced by an incumbent railroad, or the industry overall.

Another implication is that a SARR would be able to share the near-future productivity gains specific to the railroad industry on a more equal basis. In earlier years, an efficient entrant would immediately reap the productivity gains from a deregulated environment. As the rest of the industry caught up to the efficient entrant by adapting to the deregulated environment, the entrant would have slower productivity growth, other things the same, because of its upfront harvest of the deregulation gains. However, if there are no upfront deregulation gains, then a new efficient entrant and an incumbent railroad experience industry productivity gains on a much more equal basis.

Conclusions

We believe the Coal Shipper's proposal to attribute 50% of RCAF-A productivity gains to the SARR in the first year of the DCF period and increase this incrementally to 100% of RCAF-A productivity gains after the tenth year is a reasonable proposal.¹⁶ This proposal is based on the structure of the Board's analytical framework, but it more accurately represents expected SARR productivity gains than does the Board's proposal.

The Board's framework has two elements. The first is the expected rate of SARR productivity growth in the first year of the DCF period. The second is the number of years until the SARR rate of productivity growth matches the industry's average rate of productivity growth.

¹⁶ In *Western Fuels*, Dr. Caves endorsed the use of a 0.59 RCAF-U index to forecast SARR operating costs in that case. Dr. Caves found this procedure to be a reasonable "conservative" approach. (*Western Fuels* Opening Narr. at III-G-21). The Coal Shippers' proposal is also a reasonable methodology and, in Dr. Caves' opinion, properly forecasts additional productivity improvements for a SARR during the DCF period.

As we discussed, there are compelling reasons to expect the SARR to have significant productivity growth in the first year. These reasons relate to the fact that productivity growth comes from a variety of sources, many of which are not constrained by investment in new assets. In addition, productivity gains related to deregulation of the railroads appear to have been largely exhausted. This fact eliminates one of the key differences between an efficient SARR and incumbent railroads. Consequently, future productivity gains in the railroad industry will be increasingly related to events affecting the entire economy, such as the continuing computer and communications revolution. Many of these gains are achieved through a "learning by doing" process. The SARR will be able to realize these productivity gains, just as will the railroad industry. The Board's proposal does not allow for SARR productivity gains in the first year, while the Coal Shippers' properly recognizes that significant gains will occur. At the same time, the Coal Shipper's proposal conservatively assumes that the rate of SARR productivity growth in the early years will not match industry productivity growth.

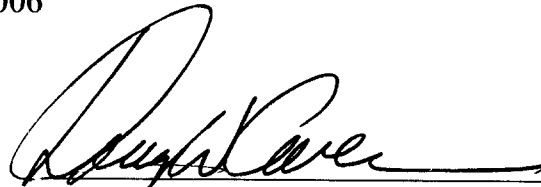
To the extent that the SARR will only converge to industry productivity growth over time, it is expected that this phase-in period will be relatively short. For many of the same reasons why the SARR should be expected to have productivity gains immediately, (e.g., the industry's productivity gains will likely be increasingly tied to events affecting the entire economy such as computing and communications technologies), the relevant capital asset deployment will be related to assets that have relatively short lives (approximately five years). The Coal Shippers' proposal conservatively assumes a phase-in period of ten years, while the Board's proposal has a much longer, and we believe unreasonable, phase-in period of twenty years.

In conclusion, we believe that the Coal Shippers' proposal more accurately represents expected future productivity gains for the SARR.

VERIFICATION

I, DOUGLAS W. CAVES, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on April 28, 2006



[DOUGLAS W. CAVES]

VERIFICATION

I, KELLY EAKIN, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on April 28, 2006

A handwritten signature in black ink, appearing to read 'Kelly Eakin', written over a horizontal line.

KELLY EAKIN

VERIFICATION

I, MARK E. MEITZEN, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on April 28, 2006

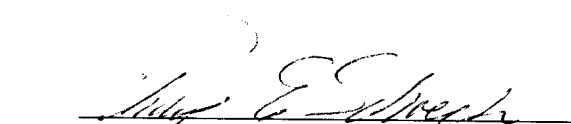


MARK E. MEITZEN

VERIFICATION

I, PHILIP E. SCHOECH, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on April 28, 2006


PHILIP E. SCHOECH

Douglas W. Caves

RESUME

January 2006

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Ph.D., University of Wisconsin-Madison, 1980, Economics
Thesis Title: Measuring Productivity Growth in the U.S. Railroad Industry with an Estimate of Losses Resulting from Economic Regulation
M.A., Oklahoma State University, 1973, Economics
B.A., Oklahoma State University, 1969, Biochemistry

Positions Held:

Vice Chairman, Laurits R. Christensen Associates, Inc., 1996-present
Senior Vice President, Laurits R. Christensen Associates, Inc. 1991-1996
Vice President, Laurits R. Christensen Associates, Inc. 1980-1990
Partner, Laurits R. Christensen Associates, 1979
Consultant, Laurits R. Christensen Associates, 1976-1978
Project Associate, University of Wisconsin, Economics, 1980-1986

Professional Experience:

I have directed Christensen Associates' research and consulting practice for the electric utility industry since 1978. In that capacity, I have made numerous improvements in the methodology and application of all major aspects of the industry. I have been active in the design and evaluation of a wide range of competitive service offerings including real-time pricing, priority service and interruptible/curtailable service. I have also been active in utility regulatory reform and incentive regulation. I have testified in numerous jurisdictions and my scholarly work has been published in a number of prestigious journals, including *the American Economic Review*, *Journal of Political Economy*, *Econometrica*, and *Review of Economics and Statistics*.

Major Projects:

Retail Market Management, Base Research and Collaborative Field Tests.

Organizer of Innovative Rates Conference, Tampa, Florida.

Incentives for Energy Utilities: Strategic Framework and Outline of Issues.

Innovative Rates for Large Users.

Design of an Incentive Regulation Plan.

Interruptible Service; a Survey of Applications and Evidence.

Commercial and Industrial Market Management to Meet Competition.

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"A Comparative Assessment of Alternative Regulatory Incentive Options," prepared for *Fifth National Demand Side Management Conference*, July 30, 1991, Boston.

"Retail Market Management: Customer Choice and Electricity Supply for the 1990's and Beyond," *Proceedings: 1994 Innovative Electricity Pricing*, Electric Power Research Institute, February 1994, TR103629, (with D. Glyer and R. Siddiqi).

"Understanding Customer Behavior in Real-Time Pricing Programs: Results from Trials in the U.S. and England," *Energy Efficiency Programs and Policies Seminar*, Wisconsin Public Utilities Institute, University of Wisconsin-Madison, and the Wisconsin Center for Demand Side Research, spring 1994.

Professional Papers - Other Than Economics:

"Greenbugs Less Than Six Hours Old as Hosts to *Lysiphlebus Testaceipes*," *Environmental Entomology*, Vol. 3, April 1974, pp. 355-56, (with Ruth and Eikenbary).

"Greenbugs (Hom: Aphididae) Forced From Host Plants by *Lysiphlebus Testaceipes* (Hym: Braconidae)," *Entomophaga*, Vol. 20, 1975, pp. 65-71, (with Ruth, McNew, and Eikenbary).

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Academic Background:

Ph.D., University of North Carolina at Chapel Hill, 1986, Economics
Dissertation: Estimating Allocative Inefficiency with a Non-Minimum Cost Function:
An Application to U.S. Hospitals
B.A., University of Texas at Austin, 1978, History

Positions Held:

Senior Vice President, Laurits R. Christensen Associates, Inc., 2006-present
Vice President, Laurits R. Christensen Associates, Inc., 1997-2005
Senior Economist, Laurits R. Christensen Associates, Inc., 1994-1997
Economist, U.S. Department of Agriculture, Washington, DC, 1992-1994
Assistant Professor, Department of Economics, University of Oregon, 1985-1992

Fields of Specialization:

Microeconomics, Industrial Organization, Regulation, Environmental and Resource
Economics, Health Economics

Professional Experience:

I specialize in the economic and financial aspects of competitive product pricing. I have experience with the organization and regulation of industry, and environmental economics. My major projects in the energy industry include the development of innovative pricing and service designs, assessment of customer price responsiveness and product choice, and analysis of competitive impacts of restructuring proposals. I have also worked on projects involving competition in health care markets, especially hospitals.

Major Projects:

Consultant to Aurora Health Care on proposed new hospital in Western Waukesha County.

Consultant to the U.S. Postal Service on Negotiated Service Agreements.

Project Manager, Load Resources and Customer Price Responsiveness Study for the Public Utilities Commission of Texas.

Project Manager, comprehensive pricing strategy project for a retail energy provider in a deregulating Canadian market.

Project Manager, new strategies for electricity product development and wholesale pricing for a public power entity.

Co-Author, "A New Strategic Direction in Retail Electricity Product Development and Pricing."

Project Manager, developing an analytical tool for retail product design and pricing.

Project Manager, costing and pricing of ancillary services.

Project Manager, Real Time Pricing at three major U.S. utilities.

Testimony:

"Entry Regulation in Hospital Markets," Statement before the Committee on Health, Children, Families, Aging and Long Term Care, Wisconsin State Senate, March 1, 2005.

Verified Statement, Docket No. 41191 (Sub-No. 1) *AEP Texas North Company v. The Burlington Northern and Santa Fe Railway Company*, March 2004.

Written and Oral Cross-Examination Testimony before the Postal Rate Commission, "Experimental Changes to Implement the Capital One Negotiated Service Agreement," Docket MC2002-2, February - March, 2003.

Recent Conference Presentations and Workshops:

"Fixed Bill: Design and Implementation Issues," *Top Line Revenue Growth for Energy Companies*, Electric Utilities Consultants, Denver, November 2003.

"Is Real Time Pricing a Panacea?" Canadian Energy Research Institute 2003 Electricity Conference, Calgary, October 2003.

Connecting Wholesale and Retail Electricity Markets, Conference Organizer and Chair, Electric Utilities Consultants, Denver, 2002.

"Effective Demand Response," Electric Utility Consultants conference on Connecting Wholesale and Retail Markets, Denver August 2002.

Retail Strategies that Connect Wholesale and Retail Market, Workshop Organizer and Instructor, Electric Utility Consultants conference on Connecting Wholesale and Retail Markets, Denver August 2002.

“What Do We Expect Electricity Markets to Achieve?” Edison Electric Institute Market Design School, Madison, WI, July 2002.

The Price Builder's Workshop, Developer, Coordinator, and Co-presenter of EPRI Workshop, December 2001.

“Connecting Retail and Wholesale Electricity Markets,” Edison Electric Institute Conference of Market Restructuring, Washington, DC, September 2000.

Retail Pricing for Competitive Power Markets: The Fundamentals of Unbundled Pricing (Course 1), and *Designing Market-Based Retail Prices* (Course 2), Course Developer and Co-presenter, Infocast Conference, September 2000.

The Unbundling and Restructuring of Electricity Prices, Developer and Presenter of EPRI Workshop, July 2000.

“The Challenge of Low Cost Power,” presentation at EPRI International Energy Pricing Conference, July 2000.

The Energy Service Provider in a Competitive Retail Market, Developer, Coordinator and Co-presenter of EPRI Workshop, May 2000.

Postal Service Regulatory Reform, Session Organizer and Chair, American Economic Association Meeting, January 2000.

Market-Based Pricing and the Product Mix Model, Developer, Coordinator and Co-presenter of EPRI Workshop, October 1999.

Pricing for Retail Markets, Developer and Co-presenter of pre-conference workshop, The Center for Business Intelligence Conference on *Pricing Power Products and Services*, October 1999.

“Building a Retail Portfolio to Meet Diverse Customer Needs,” presentation at The Center for Business Intelligence Conference on *Pricing Power Products and Services*, October 1999.

“Strategic Pricing of Retail Products in a Competitive Industry,” presentation at American Public Power Association (APPA) *Business and Financial Workshop*, September 1999.

Pricing a Retail Product Mix, Developer, Coordinator and Lead Presenter of EPRI Workshops, June and September 1997; February, March, June, and October 1998; April 1999.

“Risk Based Pricing: Creating Value by Sharing Risk,” International Business Communication Conference on *Unbundling Retail Rates*, Cambridge MA, September 1998.

"Creating a Profitable Product Mix," Electric Utility Consultants *Electric Utility Business Environment Conference*, Denver June 1998.

"Retail Applications of the Forward Price Curve," presentations at EPRI Forward Price Curve Workshops, May and September 1997; February 1998.

"Product Differentiation, Customer Segmentation and risk-Based Pricing," EPRI Power Markets and Resource Management, *Making Money in Energy Markets*, Houston, October 1997.

"Products, Contracts and Profits," EPRI Power Markets and Resource Management, *Achieving Success in Evolving Electricity Markets*, Indianapolis, 1996.

"Forward Plus Spot, Alias Two-Part Real Time Pricing," EPRI Power Markets and Resource Management, *Advanced Market-Based Products Workshop: Constructing Advanced Pricing Products*, Atlanta, October 1996.

Real Time Pricing, Co-developer and Presenter of EPRI Workshops, May and June 1995.

Publications:

"RTOs and Electricity Restructuring: The Chasm Between Promise and Practice," *The Electricity Journal*, January/February 2005 (with M. Morey and L. Kirsch).

"Demand Response and the FERC Standard Market Design NOPR," *EnergyPulse*, January 8, 2003 (with S. Braithwait).

"Market Monitoring and Market Power Mitigation in FERC'S Proposed Standard Market Design," *EnergyPulse*, December 30, 2002 (with L. Kirsch).

The Role of Demand Response in Electric Power Market Design, prepared for the Edison Electric Institute October 2002 (with S. Braithwait).

Encouraging Demand Participation in Texas Power Markets, A report to the Public Utilities Commission of Texas, August 31, 2002 (with S. Braithwait and L. Kirsch).

Electricity Pricing in Transition, A. Faruqui and K. Eakin, eds., Kluwer Academic Press, Amsterdam 2002.

"Is Market Based Pricing a Form of Price Discrimination?" in *Electricity Pricing in Transition*, A. Faruqui and K. Eakin, eds., Kluwer Academic Press, Amsterdam 2002.

"Bundling Value-Added and Commodity Services in Retail Electricity Markets," *The Electricity Journal*, December 2000, (with A. Faruqui).

"Summer in San Diego: A Shock for Consumers. An Epiphany for Electricity," *Public Utilities Fortnightly*, September 15, 2000, (with A. Faruqui).

Pricing in Competitive Electricity Markets, K. Eakin and A. Faruqui, eds., Kluwer Academic Press, Amsterdam, 2000.

"Pricing Retail Electricity: Making Money Selling a Commodity," in *Pricing in Competitive Electricity Markets*, A. Faruqui and K. Eakin, eds., Kluwer Academic Press, Amsterdam, 2000.

"Mitigating Price Spikes in Wholesale Markets through Market-Based Pricing in Retail Markets," *The Electricity Journal*, April 2000, (with D. Caves and A. Faruqui).

"Environmental Accounting and Agriculture," in *Global Environmental Change and Agriculture: Assessing the Impacts*, G. Frisvold and B. Kuhn (eds.), Edward Elgar Publishing, 1998, (with James Hrubovcak and Michael LeBlanc).

"CAP Reform: Modelling Supply Response Subject to the Land Set Aside," *Agricultural Economics*, Vol. 17, 1997, (with E. Ball, J. C. Bureau, and A. Somwaru).

"The Utility-Maximizing Self-Employed Physician," *Journal of Human Resource*, Vol. 32, No. 1, winter 1997, (with James Thornton).

"Union Algebra: Unionization, Productivity and Labor Intensity Restrictions," *Journal of Productivity Analysis*, Vol. 5, No. 1, spring 1994.

"Do Physicians Minimize Cost? A Comparison of Group and Solo Practices" in *The Measurement of Productive Efficiency: Techniques and Applications*, H. Fried, C. A. K. Lovell, and S. Schmidt (eds.), Oxford University Press, 1993.

"Virtual Prices and a General Theory of the Owner-Operated Firm," *Southern Economic Journal*, Vol. 58, No. 4, April 1992, (with James Thornton).

"Estimating a Non-Minimum Cost Function for Hospitals: Reply," *Southern Economic Journal*, Vol. 58, No. 4, April 1992, (with Thomas Kniesner).

"Allocative Inefficiency in the Production of Hospital Services," *Southern Economic Journal*, Vol. 58, No. 1, July 1991.

"Constructing Confidence Intervals Using the Bootstrap: An Application to a Multi-Product Cost Function," *The Review of Economics and Statistics*, Vol. 72, No. 2, May 1990, (with Daniel McMillen and Mark Buono).

"Branching Restrictions and Banking Costs," *Journal of Banking and Finance*, Vol. 14, No. 4, September 1990, (with Mark Buono).

"Estimating a Non-Minimum Cost Function for Hospitals," *Southern Economic Journal*, Vol. 54, No. 3, January 1988, (with Thomas Kniesner).

"Illegal Immigration," Chapter 3 in *Beating the System: The Underground Economy*, by Carl P. Simon and Ann D. Witte, Boston: Auburn House, 1982.

Book Reviews:

Weaver, R. Kent, "The Politics of Industrial Change: Railway Policy in North America," reviewed in *The Annals of the American Academy of Political and Social Science*, May 1987, pp. 223-224.

Aiken, Linda and David Mechanic (eds.), *Applications of Social Science to Clinical Medicine and Health Policy*, and Fuchs, Victor, *The Health Economy*, reviewed in *The Annals of the American Academy of Political and Social Science*, September 1987, pp. 215-217.

Shogren, Jason F. (ed.), *The Political Economy of Government Regulation*, reviewed in *Public Choice*, 69:236-237, 1991.

Academic Papers and Invited Seminars Presented:

"Restructuring Electricity Markets," Maxwell School of Public Policy, Syracuse University, November 2000.

"Duality Properties of Regulatory Cost Functions," Georgia Productivity Workshop, University of Georgia, November 1996.

"Efficient Pricing of Back Up Electricity Services," Southern Economic Association Meetings, November 1995.

"Environmental Accounting: The Impacts of Agriculture," Association of Environmental and Resource Economists, Boulder, CO, June 1994.

"Using the Bootstrap to Derive the Allocative Inefficiency Measure," Southern Economic Association Meetings, Washington, DC, November 1992; Atlantic Economic Society, ASSA Meetings, Anaheim, CA, January 1993.

"Union Algebra: Evidence on Labor Intensity Restrictions," Southern Economic Association Meetings, New Orleans, LA, November 1990, Winter Meetings of the Econometric Society, Anaheim, CA, January 1993.

"Cost Effects of Chemical-Use Restrictions in Agriculture," Atlantic Economic Association Meetings, Philadelphia, PA, October 1993; Southern Economic Association Meetings, New Orleans, LA, November 1993; Association of Environmental and Resource Economists, Boston, MA, January 1994; Seminars at the University of Wyoming, March 1994, Indiana University, January 1996, and Tulane University, March 1996.

"Do Physicians Minimize Cost? A Comparison of Group and Solo Practices," Southern Economic Association Meetings, San Antonio, TX, November 1998; Atlantic Economic Society, ASSA Meetings, New Orleans, LA, January 1992.

"The Self-Employed Utility-Maximizing Physician," Southern Economic Association Meetings, Nashville, TN, November 1991.

"Non-Negative and Second Best Thoughts about Allocative Inefficiency," Atlantic Economic Association Meetings, Washington, DC, October 1991; Southern Economic Association Meetings, Nashville, TN, November 1991.

"Virtual Prices and a General Theory of the Owner-Operated Firm," Southern Economic Association Meetings, New Orleans, LA, November 1990.

"Modelling and Measuring Biased and Induced Technological Change," Conference on Current Issues in Productivity, Graduate School of Management, Rutgers University, December 1989.

"Constructing Confidence Intervals Using the Bootstrap: An Application to a Multi-Product Cost Function," Southern Economic Association Meetings, San Antonio, TX, November 1988; Winter Meetings of the Econometric Society, Atlanta, GA, December 1989.

"Factor Adjustment Costs in Banking: Evidence from a Dynamic Cost Function," Atlantic Economic Society, ASSA Meetings, New York, NY, December 1988.

"Branching Restrictions and Banking Costs," Seminar at Oregon State University, November 1987; Southern Economic Association Meetings, Washington, DC, November 1987; Seminar at The Federal Reserve Bank of Cleveland, December 1987.

"Estimating a Non-Minimum Cost Function for Hospitals," Southern Economic Association Meetings, New Orleans, LA, November 1986; Winter Meetings of the Econometric Society, New Orleans, LA, December 1986.

"Allocative Inefficiency in the Production of Hospital Services," North American Summer Meetings of the Econometric Society, Duke University, June 1986.

Referee:

American Journal of Agricultural Economics

Contemporary Policy Issues

Economic Inquiry

Economic Review (Federal Reserve Bank of Cleveland)

European Journal of Operations Research

Journal of Environmental Economics and Management

Journal of Human Resources

Journal of Industrial Economics

Journal of Productivity Analysis

National Science Foundation

Southern Economic Journal

U.S. Dept. of Health and Human Services, Agency for Health Care Policy and Research

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Academic Background:

Ph.D., University of Wisconsin-Madison, 1982, Economics
M.S., University of Wisconsin-Madison, 1979, Economics
B.S., University of Wisconsin-Oshkosh, 1976, Economics

Positions Held:

Vice President, Laurits R. Christensen Associates, Inc., 1998-present
Director-Telecommunications, Laurits R. Christensen Associates, Inc., 1993-1998
Senior Economist, Laurits R. Christensen Associates, Inc., 1990-1993
Regulatory Economist, Southwestern Bell Telephone Company, 1988-1990
Regional Economist, Southwestern Bell Telephone Company, 1986-1988
Adjunct Professor of Economics, Saint Louis University, St. Louis, Mo., 1987-1990
Visiting Assistant Professor of Economics, University of Wisconsin-Milwaukee, 1984-1985
Assistant Professor of Economics, Eastern Michigan University, 1981-1984

Professional Experience:

I have expertise in the areas of incentive regulation, incremental cost analysis, pricing, universal service, and service quality. I have performed productivity, cost, and pricing analyses for clients in the United States and in other countries that include telecommunications companies, regulators and government agencies. I have analyzed incentive regulation and universal service issues for a number of network industries. I also have experience as an expert in civil litigation cases, including antitrust, intellectual property and employment discrimination cases. I have performed and assisted in the formulation of damages calculations in a variety of litigation cases.

Publications:

"Incentive Regulation in Network Industries: Experience and Prospects in the U.S. Telecommunications, Electricity and Natural Gas Industries," *Review of Network Economics*, Vol. 2, Issue 4 - December 2003, pp. 316-337, (with R. C. Hemphill and P. E. Schoech).

"Total Factor Productivity in the Telecommunications Industry," in *International Handbook on Telecommunications Economics*, G. Madden and S. Savage, eds., 2003, (with L. R. Christensen and P. E. Schoech).

"Pricing Network Elements Under the Telecommunications Act of 1996: Back to the Future," *Comm/ENT*, Summer 2001, (with S. Massa and S. G. Parsons).

"Controlling for Cross Subsidization in Electric Utility Regulation," Edison Electric Institute, September 1998, (with L. Kaufmann and M. Lowry).

"Where Do We Go From Here?" *Public Utilities Fortnightly*, June 15, 1993, (with L. R. Christensen and P. E. Schoech).

"Recent State Legislation for Telecommunications: Brave New World or Bad Public Utility Law?" *George Mason University Law Review*, Vol. 14, No. 1, Fall 1991, (with A. C. Larson). Reprinted in *Public Utility Law Anthology*, Vol. 15, Part 2, July-December 1992, Allison P. Zabriske, ed., (Gaithersburg MD: International Library Book Publishers, Inc.) 1992, pp. 433-491.

"The Uses and Abuses of Stand-Alone Costs," *Utilities Policy*, April, 1992, (with A. C. Larson). Shorter, nontechnical version appeared as "The Use of Stand-Alone Cost in Public Utility Regulation," *National Estimator*, spring 1992.

"The Shared Cost Problem and Cash Cow Economics: Who Gets Milked?" *Public Utilities Fortnightly*, April 1, 1991.

"Diversification of Telephone Company Service Offerings and Cash Cow Economics: Who Gets Milked?" *Utilities Policy*, October 1990.

Cost and Pricing Principles for Telecommunications: An Anthology, Washington: United States Telephone Association, September 1990, (co-edited with A. C. Larson).

"The LEC's Transition to Full Competition: The Response of Regulation," *The Computer Lawyer*, July 1990, (with T. J. Schroepfer).

"Differential Compensation and Worker Turnover," *Journal of Economics*, 1989, (with L. Brannman).

"Differences in Male and Female Job Quitting Behavior," *Journal of Labor Economics*, 1986.

"The Impact of Unionism on Exit and Voice Decisions in the Labor Market," *Journal of Economics*, 1984, (with S. Hayworth).

"Empirical Analysis of the Rate of Worker Separation," in *Subsidizing On-the-Job Training*, Columbus, OH: National Center for Research in Vocational Education, 1982.

Other Papers:

"Incorporating Service Quality Incentives in a Price Cap Plan," July 2000, presented at EPRI International Energy Pricing Conference 2000, Washington, DC, (with R. C. Hemphill).

"Measuring the Costs of Universal Service for the Postal Industry," December 1999, presented at 2000 ASSA meetings, Boston, MA, (with D. C. Christensen, L. R. Christensen, and P. E. Schoech).

"Post-Divestiture Total Factor Productivity Growth of the Telephone Local Exchange Carriers," February 1996, (with L. R. Christensen and P. E. Schoech).

"Financial Market Implications of Competition and Regulation in the Telecommunications Industry," May 1989.

"An Allocation-Free Contribution Tracking System," May 1990, (with A. C. Larson).

Presentations at Professional Meetings:

"Economics of Price Erosion Using Available Data," Law Seminars International Patent Damages Workshop, Chicago, IL, April 2004.

"Economics of Price Erosion and Lost Conveyed Sales Using Available Data," Law Seminars International Patent Damages Workshop, Chicago, IL, April 2003 (with J. Cordray).

"Local Exchange Competition," Wisconsin Public Utility Institute, Madison, WI, April 2003.

"Patent Damages: Analyzing the Market But-For Infringement," presented to the Milwaukee Bar Association's Intellectual Property Section, May 2000, (with C. Degen).

"Implementation of Price Cap Regulation—The FCC Experience," Wisconsin Public Utility Institute, Madison, WI, September 1999.

"Costs of Universal Service," Wisconsin Public Utility Institute, Madison, WI, March 1997.

"Unbundled Network Elements and Economic Cost Standards," Wisconsin Institute of Certified Public Accountants, Madison, WI, October 1997.

"The Uses and Abuses of Stand-Alone Costs," Second Prize winner in the Research Awards Competition of the Eleventh Annual Southeastern Public Utilities Conference, Atlanta, GA, September 23, 1991.

"Diversification of Telephone Company Service Offerings and Cash Cow Economics: Who Gets Milked?" First Prize winner in the Research Awards Competition of the Tenth Annual Southeastern Public Utilities Conference, Atlanta, GA, August 1990. Also presented at the Third Annual Western Conference of the Rutgers University Advanced Workshop in Regulation and Public Utility Economics, San Diego, CA, July 1990.

"Financial Market Implications of Competition and Regulation in the Telecommunications Industry," Eighth Annual Conference of the Rutgers University Advanced Workshop in Regulation and Public Utility Economics, Newport, RI, May 1989.

"Foreign Trade in Telecommunications Equipment," Second prize winner in the papers competition held in conjunction with the Eleventh Annual Midwestern Telecommunications Conference, Minneapolis, MN, October 1988.

"Perspectives on Local Exchange Competition," Presented at the Seventh Bi-Annual Conference of the International Telecommunications Society, Cambridge, MA, June 1988.

"The Effects of Market Signals on the Construction of Incentive Contracts in a Principal-Agent Model: The Case of the Academic Labor Market," 1984 Atlantic Economics Society Conference, Montreal, Canada, (with B. Woodland).

"The Role of Voice Mechanisms in Workers' Participation in and Satisfaction with Unions," 1984 Midwest Economics Association Convention, Chicago, IL.

"Hedonic Wage Models and Worker Turnover," 1984 Midwest Economics Association Convention, Chicago, IL.

"The Impact of Unionism on Exit and Voice Decisions in the Labor Market," 1984 Missouri Valley Economics Association Convention, Kansas City, MO, (with S. Hayworth).

"Differences in Male and Female Job Quitting Behavior," 1983 Midwest Economics Association Convention, St. Louis, MO.

Non-Confidential Consulting Reports:

"Comments of the Minnesota Department of Commerce," *in the Matter of Commission Investigation of Cost for Appropriate Level of Universal Service Support*, Minnesota Docket No. P999/CI-00-829 (Minnesota Department of Commerce).

"Productivity Performance of the Wisconsin Local Exchange Carrier Industry," and "Comments of Christensen Associates on Consultant Productivity Studies," January 2003, Wisconsin PSC Docket 1-AC-193, (with L. R. Christensen, P. E. Schoech, and S. M. Schroeder).

"Determination of the X Factor for the Regulation of Telefonica del Peru," August 2001, (with P. E. Schoech, C. Smyser, and S. M. Schroeder).

"The Ameritech Illinois Total Factor Productivity Study," June 2000, Illinois Commerce Commission Docket 98-0252, (with P. E. Schoech and S. M. Schroeder).

"Market Power Study of the Potomac River, Benning Road, and Buzzard Point Power Plants," Final Report to Potomac Electric Power Company, April 2000, (with F. L. Alvarado, L. D. Kirsch, S. D. Braithwait, B. K. Eakin, S. L. Greene, R. Rajaraman, and J. D. Reaser).

"Price Cap Design and X Factor Estimation for Peruvian Telecommunications Regulation," Final Report to OSIPTEL, May 1999, (with L. R. Christensen, P. E. Schoech, L. D. Kirsch, C. A. Herrera, and S. M. Schroeder).

"Analysis of Benchmark Cost Proxy Model 3.0, Hatfield Model, Version 5.0 and Hybrid Cost Proxy Model," Federal Communications Commission, CC Docket 96-45, January 1998, (with A. T. Bozzo, T. Rutkowski, and T. Grau).

"Analysis of Benchmark Cost Proxy Model and Hatfield Release 3.1," Federal Communications Commission, CC Docket 96-45, April 1997, (with L. R. Christensen, P. E. Schoech, A. T. Bozzo, and T. Rutkowski).

"The TFPRP Provides the Best Basis for Determining the Rate of LEC TFP Growth," Federal Communications Commission, CC Docket 94-1, February 1997, (with L. R. Christensen and P. E. Schoech).

"Appropriate Standards for Cost Models and Methodologies," Federal Communications Commission, CC Docket 96-45, Final Report to United States Telephone Association, February 1997.

"Updated Results for the Simplified TFPRP Model and Response to Productivity Questions in FCC's Access Reform Proceeding," Federal Communications Commission, CC Docket 94-1, January 1997, (with L. R. Christensen and P. E. Schoech).

"Economic Evaluation of Proxy Cost Models for Determining Universal Service Support," Federal Communications Commission, CC Docket 96-45, January 1997.

"A Survey of X-Factor Experience in the United States," filed with Canadian Radio and Telecommunications Commission on behalf of Stentor Member Companies, June 1996, (with L. R. Christensen and P. E. Schoech).

"An Evaluation of the Bell Canada, BC TEL, MTS NetCom Inc., and Maritime Tel & Tel Limited Total Factor Productivity Studies," filed with Canadian Radio and Telecommunications Commission on behalf of Stentor Member Companies, June 1996, (with L. R. Christensen and P. E. Schoech).

"Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans: Reply Comments," Federal Communications Commission, CC Docket 94-1, March 1996, (with L. R. Christensen and P. E. Schoech).

"Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans," Federal Communications Commission, CC Docket 94-1, December 1995, (with L. R. Christensen and P. E. Schoech).

"Productivity of the Local Operating Telephone Companies Subject to Price Cap Regulation 1993 Update," Federal Communications Commission, CC Docket 94-1, January 1995, (with L. R. Christensen and P. E. Schoech).

"Productivity Growth in the Cable Television Industry," filed with Federal Communications Commission on behalf of the National Cable Television Association, June 1994, (with L. R. Christensen and P. E. Schoech).

"Productivity of the Local Operating Telephone Companies Subject to Price Cap Regulation," Federal Communications Commission, CC Docket 94-1, May 1994, (with L. R. Christensen and P. E. Schoech).

"Sources and Methods for the Ohio Bell Total Factor Productivity Study," Public Utilities Commission of Ohio, Case No. 93-487-TP-ALT, 1993, (with L. R. Christensen and P. E. Schoech).

"Sources and Methods for the Illinois Bell Total Factor Productivity Study," Illinois Commerce Commission, Case No. 92-0448, December 1992, (with L. R. Christensen and P. E. Schoech).

Expert Testimony:

Regulatory Proceedings

Client: AEP Texas North (2004)

Proceeding: Surface Transportation Board Docket No. 41191

Client: OSIPTEL (2003)

Proceeding: TdP Price Cap Implementation (Peru)

Client: OSIPTEL (2002)

Proceeding: TdP Price Cap Implementation (Peru)

Client: OSIPTEL (2001)

Proceeding: TdP Price Cap Implementation (Peru)

Client: Ameritech Illinois (2001)

Proceeding: ICC Docket No. 98-0252

Client: Texas Municipal Power Agency (2001)

Proceeding: Surface Transportation Board Docket No. 42056

Client: Reliant Energy HL&P (2000)
Proceeding: Texas SOAH Docket No. 473-00-1020, Texas PUC Docket No. 22355

Client: Frontier Communications (1999)
Proceeding: MPSC Case No. U-12049

Client: TDS Telecom (1998)
Proceeding: MPSC Case No. U-11815

Client: Mid-Plains Telephone (1997)
Proceeding: PSCW Dockets 3650-MA-100 and 5845-MA-100

Client: Washington Independent Telephone Association (1997)
Proceeding: WUTC Docket UT-960369

Client: Michigan Exchange Carriers Association (1997)
Proceeding: MPSC Case No. U-11448

Client: Wisconsin State Telephone Association (1996)
Proceeding: PSCW Docket 05-TI-137

Client: Ameritech Illinois (1995)
Proceeding: ICC Docket 95-0458

Client: Southwestern Bell Corporation Media Ventures (1994)
Proceeding: Maryland PSC Docket 8659

Client: Ameritech Illinois (1993)
Proceeding: ICC Docket 92-0211

Client: Urban Telephone Company (Wisconsin) (1992)
Proceeding: PSCW Docket 6050-TI-100

Civil Proceedings – Deposition or Trial Testimony

Jerald Alan Hamman v. 800 Ideas, Inc., et. al., United States District Court, District of Minnesota, Civil Action No. 03-3342 (DWF/SRN), 2005.

Hotsamba, Inc., v. Caterpillar, Inc., United States District Court, Northern District of Illinois, Eastern Division, Civil Action No. 01C-5540, 2005.

Performance Business Forms, Inc., v. The Reynolds and Reynolds Company and Reynolds and Reynolds Holdings, Inc., United States District Court for the Middle District of Tennessee, Nashville Division, Civil Action No. 303-0931, 2005.

In Re: Sorbates Direct Purchaser Antitrust Litigation, United States District Court, Northern District of California, Master File No. C98-4886 MMC, 2002.

William A. Boyles v. R. Charles Curry, M.D., et. al, U.S. District Court, Ninth Judicial Circuit, 2001.

Fort James Corporation v. Solo Cup Company, United States District Court, Eastern District of Wisconsin, Case No. 99C0827, 2001

Avon Plastics, Inc. v. Plastics Research Corporation, United States District Court, Eastern District of Michigan Southern Division, Case No. 99-73456, 2000.

Gwendolyn Abram, et. al. v. United Parcel Service, United States District Court, Eastern District of Wisconsin, Case No. 97C-1233, 2000.

Argus Corporation, et. al. v. Kimberly-Clark Corporation, et. al., State of Wisconsin Case No. 97CV3230, 1998.

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Academic Background:

Ph.D., University of Wisconsin-Madison, 1980, Economics
M.A., University of Wisconsin-Madison, 1976, Economics
B.A., Northwestern University, 1973, Mathematics

Positions Held:

Vice President, Laurits R. Christensen Associates, Inc., 1991-present
Senior Economist, Laurits R. Christensen Associates, Inc., 1979-1990
Project Associate, University of Wisconsin-Madison, 1984-1985
Economist, U.S. Bureau of the Census, 1984
Research Associate, University of Wisconsin-Madison, 1983-1984
Research Associate, Laurits R. Christensen Associates 1977-1979

Professional Experience:

I oversee projects for companies and industries facing market and regulatory restructuring. My technical expertise includes productivity measurement, price analysis, incentive regulation, and econometric cost assessment. I have conducted a variety of productivity and pricing studies for the telecommunications, electric, natural gas, retail trade, and postal industries. I have also advised numerous clients on issues related to incentive regulation, particularly in the areas of price cap index specification and pricing flexibility. I have conducted numerous econometric studies that have been used to determine economies of scale, marginal costs, and firm efficiency in different industries. The results of these analyses have been used both as internal management tools and as evidence before regulatory bodies.

Published Papers:

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Before the Surface Transportation Board

Ex Parte 657 (Sub-No. 1) Major Issues in Rail Rate Cases

**Comments of
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Managing Director
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Introduction

I am Dr. William J. Brennan. I am an economist and a Managing Director of Transportation Economics, a consulting group that assists electric utilities and other firms understand how transportation and regulatory issues affect their businesses. I have acted in this capacity for 16 months; before that I worked for the Surface Transportation Board as an economist. Earlier in my career, I worked as an economist for the U.S. Department of Agriculture and the Association of American Railroads. Altogether, I have specialized in the economics of railroading for 14 years.

My testimony is sponsored by the Western Coal Traffic League, the Concerned Captive Coal Shippers, the Edison Electric Institute, the National Rural Electric Cooperatives Association and the American Public Power Association (collectively, "Coal Shippers"). The Coal Shippers have asked me to review the Board's productivity proposals. My judgment is that the Board's proposal is a step in the right direction, but too small a step.

The Importance of Productivity

Getting productivity right is critically important. Over the long-run, productivity is the most important of all economic indicators.¹ As then Governor, now Chairman Ben S. Bernanke of the Federal Reserve Board said last year, “Productivity growth is the principal source of improvements in living standards.”²

So, what is the ultimate source of productivity and why should it matter in a stand-alone cost (SAC) case? I think it is inarguable that the source of productivity is the human mind. As the late Julian Simon wrote, “Human beings are not just more mouths to feed, but are productive and inventive minds that help find creative solutions to man’s problems, thus leaving us better off over the long run.”³ To borrow from the title of one of Simon’s most popular works, people are the ultimate resource.

More recently, Joel Mokyr has reviewed the phenomenon of economic growth in his magisterial book, *The Gifts of Athena: Origins of the Knowledge Economy*. In Mokyr’s view, the unprecedented economic growth of the past 200 years is a result of a dramatic increase in *useful* knowledge. Prior to the 19th century, economic growth occurred fitfully as we developed new tools and techniques. In many cases, however, *why* these techniques worked remained a mystery. For example, Jenner developed a small-pox vaccine before the germ theory of disease was developed.

¹ The U.S. Bureau of Labor Statistics defines productivity as “A measure of economic efficiency that shows how effectively economic inputs are converted into output. Productivity is measured by comparing the amount of goods and services produced with the inputs that were used in production.” See <http://www.bls.gov/bls/glossary.htm>

² Remarks by Governor Ben S. Bernanke at the C. Peter McColough Roundtable Series on International Economics, Council on Foreign Relations. This speech appears on the Federal Reserve Board’s web-site and its specific URL is <http://www.federalreserve.gov/BoardDocs/speeches/2005/200501119/default.htm>.

³ Attributed to Julian Simon by Stephen Moore in his appreciation of Simon’s life. See the Cato Online Policy Reports, http://www.cato.org/pubs/policy_report/cpr-20n2-1.html.

Only in the last two centuries or so have we acquired a sufficient understanding of the natural world to permit effective communication among the world's scientists and engineers. A "feedback" loop has been established that enables us to explain why certain techniques work and to develop new techniques based on insights from the growth of scientific knowledge. Thus, today's global positioning system depends on proper application of Einstein's special and general relativity theories. In addition, we have invented new means of communicating useful knowledge effectively and rapidly. This is the process that has lifted economic growth rates world-wide and shows no signs of abating.

If anything, productivity growth appears to be accelerating. Since 1995, productivity growth in the United States has risen sharply, from roughly 1.5 percent to 2.5 percent per annum. Gains have been greatest in those industries that are intensive users of new information and communication technologies. Some scholars argue that these new information and communication technologies are general-purpose technologies, similar to the internal combustion engine and electrification, and are likely to have a long-lasting and profound effect on the organization of industry in the years ahead.⁴ Indeed, as Chairman Bernanke argues,

Even if the technological frontier advances more slowly during the next few years, further diffusion of existing technologies and applications can continue to raise aggregate productivity. For example, a survey conducted in 2003 by the Institute of Supply Management and Forrester Research found that most managers consider their companies to be at a relatively early stage in exploiting the potential gain from using the Internet for their purchasing activities.

⁴ See Bresnahan, Timothy, and Manuel Trajtenberg (1995). "General Purpose Technologies: 'Engines of Growth?'" *Journal of Econometric*, vol 65, pp. 83-108.

Productivity and the SAC Constraint

Assessing the rate of productivity growth plays an important role in the outcome of SAC cases brought before the Board. Given the long horizon over which forecasts must be made, the compounding effect of the Board's productivity assumptions plays a large role in determining both the outcome of rate cases and the size of relief available to successful complainants.

In recent cases, the Board has struggled to develop an appropriate measure of a stand-alone railroad's (SARR) future cost structure. Because the price railroads will pay for goods and services can be expected to rise over time, it is appropriate that the future operating expenses of a SARR, like those of its real-world counterparts, reflect these inflationary pressures. The Staggers Act required that the Board develop a quarterly cost-recovery index, known as the Rail Cost Adjustment Factor (RCAF), and the Board has applied forecasts of this measure to the future operating expenses SARR's are expected to incur. Unfortunately, carriers and shippers disagree on which of the 5 different RCAF indexes ought to be applied to SARR operating expenses. Defendant carriers have proposed the RCAF-U (unadjusted for productivity), while complainants have argued for the RCAF-A (which reflects changes in railroad productivity).

Existing carriers have argued that a SARR is unlikely to experience any growth in productivity because it starts off with new equipment, in contrast to the existing carriers whose locomotive fleets and other assets include older units which are continually being replaced by newer, more productive equipment. In this view, the SARR already starts off at a high level of productivity, toward which the existing carriers evolve over time. The Board has typically defaulted to this approach and has applied the RCAF-U to escalate

operating expenses, even though the Board itself concedes that this approach likely overstates a SARR's future expenses. It does; dramatically. A SARR, like a real-world carrier, will capture significant productivity gains.

Thus, the Board's proposal to transition to the RCAF-A is clearly a step in the right direction. The strength of the Board's proposal is that it ends at the right place. It is axiomatic that, in the long-run, a firm's expenses and revenues must grow at the same rate. A very simple thought experiment confirms this point. We know that the revenue stream available to the SARR – based on forecasts of the revenues available to the real-world railroads – escalates at rate comparable to the RCAF-A. This is certainly consistent with the findings of the Board's Office of Economics, whose rate studies confirm that rail rates have fallen over time and that the benefits of productivity have been passed along to consumers. But, if revenues increase at the RCAF-A, while expenses increase at a higher rate, the RCAF-U, a SARR will eventually go bankrupt. This result is inconsistent with the theory of contestable markets that supports the SAC methodology. It would be just as inconsistent to suggest that SARR's revenues grow at a rate that exceeds the growth in expenses – in which case profits would grow without limit. Eventually, in every marketplace, a successful firm comes to a point where its revenues and expenses must be expected to grow at the same rate.⁵

Therefore, while the Board ends up in the right place (using the RCAF-A), its proposal is still flawed. There are two problems with the Board's approach. First, and most critically, the Board is wrong to assume that a stand-alone railroad could not capture

⁵This position is also consistent with the Board's preference that forecasts, to the maximum extent possible, come from the same source. To the extent that future revenue streams implicitly include a productivity adjustment, so too should the expense stream.

significant productivity improvements right away. Second, the Board is wrong to assume that it would take until after year 20 for a SARR to capture the productivity gains typical in this industry.

A SARR Can and Will Capture Significant Productivity Gains Early On

The Board's proposal, which starts with the RCAF-U, denies a SARR *any* early labor productivity or capital productivity. In effect, the Board continues to assume (implicitly) that productivity is embedded in new capital equipment and that because the SARR is favorably endowed in capital productivity, it captures only limited productivity improvements for a horizon of 20 years.

Yet, firms can and do capture productivity in myriad ways that have nothing to do with capital equipment. For example, on Saturday, April 22, 2006, the *Wall Street Journal*, published a lengthy piece showing how business are reacting to the very high fuel costs they presently face. It should come as no surprise that firms are feverishly innovating and experimenting with new methods of production. The report cited UPS, which computerized its vehicle logs and discovered that it could reduce the amount of engine oil its fleet consumes by 330,000 quarts per year by altering its preventative maintenance practices. Similarly, a major brick producer was able to slightly redesign the shape of its bricks and capture a 2.5 percent reduction in its energy costs. Such adjustments are being made in every firm across the economy and a stand-alone railroad would be no different.

It is not true that all productivity is embedded in new capital, nor is it true that the productivity of existing equipment (once purchased and employed) is fixed. Thus, even in the early years of a state-of-the-art facility, productivity advances are likely to be much

closer to RCAF-A than to the RCAF-U. This result arises from a long-recognized phenomenon that was formalized by the Nobel laureate Kenneth Arrow in his seminal paper "The Economic Implications of Learning by Doing."⁶ Productivity improves over time because we experiment and learn which techniques are most efficient.

Numerous empirical studies have confirmed the learning-by-doing phenomenon across a wide array of industries. For example, Armen Alchian explored the implications of learning-by-doing in the production of airframes;⁷ he found that productivity improved as workers gained additional experience building airframes. Paul Joskow and George Rozanski documented the relevance of learning-by-doing to the nuclear power industry.⁸ Joskow and Rozanski (p. 167) show that "technical progress due to learning by doing plays an important role in determining the productivity of nuclear power plants." In particular, learning by doing increases the capacity factors of new, state-of-the art facilities at a rate of about 5 percent per annum.

Marvin Lieberman demonstrated that learning-by-doing is pervasive in the chemical process industries.⁹ Learning-by-doing in the chemical processing industry is particularly noteworthy; the industry's outputs are well-defined, not recent innovations. Lieberman suggests that the effects of learning-by-doing are greater than those associated with economies of scale. Lieberman also finds that the slope of the learning curve rises significantly as capital intensity rises, confirming the view that the learning curve cannot be attributed to increases in labor efficiency alone. It hardly needs mentioning that the stand-

⁶ Arrow, Kenneth. "The Economic Implications of Learning by Doing." *Review of Economic Studies*, Vol. 29, No.3 (June 1962), pp. 155-173.

⁷ Alchian, Armen. "Reliability of Progress Curves in Airframe Production." *Econometrica*, Vol. 31, No. 4 (October 1963), pp. 679-693.

⁸ Joskow, Paul L. and George A. Rozanski. "The Effects of Learning by Doing on Nuclear Plant Operating Reliability." *The Review of Economics and Statistics*, Vol. 61, No. 2 (October 1979), pp. 161-168.

⁹ Lieberman, Marvin B. "The Learning Curve and Pricing in the Chemical Processing Industries." *The RAND Journal of Economics*, Vol. 15, No. 2 (Summer 1984), pp. 213-228.

alone railroads typically encountered by the Board are capital-intense firms and therefore would have ample opportunity to capture the benefits of learning.

Byong-Hyong Bahk and Michael Gort decompose the learning-by-doing effect into three categories – labor learning, capital learning, and organization learning.¹⁰ They clearly demonstrate (p. 579) “that productivity continues to rise for a considerable period of years after the birth of a plant.” In fact, Bahk and Gort show that capital learning continues until the fifth or sixth year after the birth of a plant, whereas organizational learning starts around the third year and continues through the tenth year after the birth of the plant, if not longer. In light of this evidence, the Board’s reliance on RCAF-U in maximum rate cases is an entry-barrier. Just as it is appropriate that new entrants incur the same sorts of costs that established firms once did, a SARR must also be able to capture all the productive efficiencies, including learning-by-doing efficiencies, that are available to incumbent railroads.

In fact, the importance of learning-by-doing should come as no surprise to observers of the railroad industry. Just as economic theory predicts, a brand-new, real-world railroad, the Western Railroad Properties, Inc. (WRPI), the Chicago and Northwestern Railroad subsidiary that built into the Southern Powder River Basin (PRB), experienced dramatic productivity improvements in its first few years of service. Any SARR can be expected to capture productivity improvements once operations begin.

I would also note that, as Chairman Bernanke observed, firms make large intangible investments that improve productivity over time. Workers must be trained and re-trained; organizations must discover the best way of employing new and existing tech-

¹⁰ Bahk, Byong-Hyong and Gort, Michael. “Decomposing Learning by Doing in New Plants.” *The Journal of Political Economy*, Vol. 101, No. 4 (August 1993), pp. 561-583.

nologies. The same survival-of-the-fittest dynamic that drives existing carriers to make such investments in intangible and human capital would apply to a SARR as well. A SARR that “steps into the shoes of an incumbent,” even a SARR with a sparkling new plant, will discover, invent, observe, and invest its way to significant (and often immediate) productivity improvements as a result.

Moreover, as Jacob Schmookler long ago demonstrated in his classic study, *Invention and Economic Growth*, there is a strong relationship between the level of patenting and the level of investment, both over time and across industries.¹¹ Schmookler looked specifically at railroad data to demonstrate that patenting is closely related to economic not technological opportunities. He noted, for example, that in the railroad industry both track and non-track patents fell after the arrival of highways and automobiles. (These two distinct areas of technology possessed quite different technological possibilities, but the same economic possibilities). With railroad profitability rising to record levels, there is every reason to expect that railroad patenting activity will increase, driving future increases in the growth rate of railroad productivity. Because a SARR would be both a contributor to and beneficiary of this patenting activity, the Board should not deny it the ability to employ the new inventions that would drive increases in productivity even during the early years of its existence.

That such many such inventions are likely to be adopted in the next few years is clear. For example, Edward R. Hamberger, the President and CEO of the Association of American Railroads, has recently noted a number of ways that technology is playing a

¹¹ Schmookler, Jacob. *Invention and Economic Growth*. Cambridge: Harvard University Press, 1966.

role in expanding rail capacity.¹² Mr. Hamberger mentioned more sophisticated control systems and a movement toward longer and heavier trains. Mr. Hamberger also listed a number of innovative new technologies being developed by the Transportation Technology Center Inc. (TTCI) in Pueblo, Colorado. Mr. Hamberger correctly asserts that TTCU is generally considered to be the finest rail research facility in the world. Among the technologies TTCI is developing are better wayside detectors, trackside acoustic detector systems, advanced geometry cars, and an entire research program dedicated to heavy-axle loads. It hardly needs mentioning that a new SARR would benefit from these technologies from the moment they are commercially viable. In fact, a new SARR, by stepping into the shoes of the incumbent it replaces, would become a member of the AAR, a sponsor of the TTCI facility, and benefit enormously from the experience of that facility's scientists and engineers. (I would note that the Board and its staff have undertaken several fact-finding trips to the PRB in recent years. I have no doubt that the Board its staff would similarly benefit from a tour of TTCI; it is an eye-opening experience).

Of course, new capital equipment can be expected to bring forth new efficiencies. It thus makes intuitive sense that (as the Board suggests) the growth rate of a SARR's operating expenses would start above and decay towards the RCAF-A. Operating expenses of a SARR that starts with entirely new capital might very well rise at a rate faster than RCAF-A.¹³ The question, then, is at what point above the RCAF-A should the initial

¹² Hamberger, Edward R., "Statement Before the U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee of Railroad," April 26, 2006.

¹³ Relying on new equipment is customary – but not required – in SAC cases. Just as individuals buy both new and used automobiles, it is likely that a hypothetically efficient carrier might rely on a mixture of new and second-hand equipment to meet its needs. Moreover, consider the following thought experiment: Suppose a SARR replicated in every detail the operations, equipment, and practices of an existing carrier? Would the Board deny that SARR the opportunity to achieve the RCAF-A? And, if so, on what basis?

rate be set? Starting at the RCAF-U is wholly inappropriate; it denies a SARR the benefit of *any* productivity improvements in labor, existing capital, or purchased services. It suggests that the employees of a new railroad, as well as the contractors and vendors who do business with that SARR, are less informed, less imaginative, less creative, less motivated than the employees and contractors of existing carriers. *This is the ultimate entry barrier!* Continued reliance on the RCAF-U as the starting point from which to escalate operating expenses is unsupported by economic theory, empirical evidence, or historic example.

A SARR Would Attain Normal Productivity Growth Faster than Board Anticipates

If, in the long-run, a SARR's revenues and expenses must grow at approximately the same rate, the second question the Board must ask itself is "How long before the SARR captures normal productivity growth?" Whereas some railroad assets – tunnels, bridges, grading, have very long expected lives, others (including those critical, productivity-enhancing information and computer technology systems computer systems) do not. In fact, I suspect that the useful life for most information and communication technology assets, the very general-purpose technology that is driving increases in productivity, is five years or less. Thus, it seems almost certain that the Board's 20 year phase-in is too long. Indeed, the 20-year horizon seems to be tied to the existing DCF period and could, just as easily – and more accurately – have been tied to the proposed 10-year DCF horizon.

An Alternative Approach

A fairer, more realistic approach to productivity must reflect the two major concerns noted above. First, the starting point must be higher than RCAF-U and reflect the sources of productivity that a SARR could reasonably expect to capture from the beginning. Second, the SARR should transition toward the RCAF-A over a much shorter period of time than the 20 years proposed by the Board.

I recognize that the Board faces something of a "Goldilocks" problem¹⁴ in setting the initial growth rate of operating expenses. If the Board sets the initial rate too low (the RCAF-A), the results might be biased against the carriers. But if the Board sets the rate too high (the RCAF-U), then the results *will* be biased against shippers because, as I argued earlier, the RCAF-U is unsupported by economic theory, empirical evidence, or historic example.

Nor should the Board, as it has done in the past, demand that complainants demonstrate in detail all the specific sources of future productivity gains. Some areas of productivity growth for a SARR are fairly obvious (e.g., positive train control) and a reasonable assessment of likely productivity gains can be made for the first several years of a SARR's operation. For later years, however, it is, to a significant extent, inherently unknowable what specific productivity advances railroads will capture. Those outcomes lie in the future and will depend on the relative prices and technological opportunities that prevail in the future. Still, even if we cannot determine which specific developments will generate future productivity gains for the railroad industry in the more distant future, or in what measure or proportion, we can be confident that railroads (both real and hypo-

¹⁴ Not too low, not too high, but just right.

thetical) will be significantly more productive than they are at present. In the future, entrepreneurs will offer new products and services to the carriers, and railroad managers and employees will discover and apply new, more efficient techniques.

In its proposed approach, the Board assumes that a SARR will not capture any initial productivity gains. Presumably, it comes to this conclusion because the SARR has new capital assets and the Board assumes the SARR cannot be expected to increase the productivity of those assets. Although the Board's implicit assumption is wrong, let us – just for the moment – suppose it were true. What if we deferred all productivity improvement on that portion of operating expenses attributable to depreciation, rents, leases, joint facilities, as well as all the materials, supplies, fuels, lubricants, and tools consumed by carriers? What if, in other words, we set the initial starting point for productivity gains proportionate to those categories that are left over after eliminating expenses associated with the railroad's capital base and fuel consumption?

In Exhibit 1 to this testimony, I examine the 2004 R-1 reports for the 4 largest Class I carriers. It shows that expenses associated with capital assets and materials and supplies range from 35.3 percent of expenses (CSX) to 45.1 percent of expenses (UP). Thus, for a SARR replacing CSX, initial operating expenses would grow at a blended average of the RCAF-U and RCAF-A (35.3 and 64.7 percent, respectively). A SARR replacing UP, by contrast, increase its initial operating expenses summing 45.1 percent of the RCAF-U and 54.9 percent of the RCAF-A. Thus, simply by eliminating those categories that are most clearly related to capital assets, we can see that more than half of all railroad expenses could be expected to capture normal productivity gains. And, over time, as existing capital assets were replaced, the rate of productivity growth would climb

even higher. This suggests that recent attempts by complainants to “split the difference” between the RCAF-U and RCAF-A in pending rate cases are, if anything, highly conservative.

In determining how quickly to phase-in productivity growth, the Board confronts a second problem. Phase-in growth too quickly, the results may be biased against carriers. Phase-in growth too slowly, the results *will* be biased against shippers.

The Board’s proposal, to phase-in productivity growth over 20 years, takes far too long. Why do I believe this? The answer is really quite simple. The world and the railroad industry as they exist today bear little resemblance to the world and industry that existed 20 years ago.

Twenty years ago China was a desperately poor country with little to offer the United States and the Berlin Wall still stood. In fact, Ronald Reagan’s speech at the Brandenburg Gate, where he called upon Mr. Gorbachev to “tear down this wall,” would not take place until 1987. Twenty years ago, Democrats held a seeming lock on the U.S. House of Representatives and the Interstate Commerce Commission still regulated the nation’s railroad. (The commission was just getting set to deny the proposed Southern Pacific-Santa Fe merger).

Twenty years ago, Conrail was still owned by the Federal Government and Canadian National was a sleepy Crown corporation. (Paul Tellier wouldn’t join CN for another 6 years). Twenty years ago, AC locomotives were but a dream. Microsoft had just introduced Windows 1.0, but sales were disappointing (no doubt because the Intel 286 processor was considered cutting-edge technology). In fact, the big thing in information

and communication technology in 1986 was the fax machine. Twenty years later, we have gone through at least four complete information technology cycles.

Surely, then, if experience is our guide, we can expect that railroads 20 years in the future will be far more efficient than today's carriers, *and much more efficient than a SARR that uses today's best technology*. To cite just one example, the most recent edition of *Argus Coal Transportation* reports, carriers could squeeze out an additional 15-20% improvement on its existing capital stock with the introduction of positive train control.¹⁵ To the extent that the adoption of this technology also permits carriers (both real and hypothetical) to move to one-man crews, the productivity improvements would be greatly magnified.

The world has changed over the past 20 years and will change quite as much over the next 20. A SARR that did not quickly ramp up its productivity to match the changing world would find itself a victim of the forces of creative-destruction. Therefore, the Board's proposal to phase-in productivity gains over a 20-year horizon takes too long; it does not reflect how quickly change is occurring in the real world, both from a political and commercial standpoint, or how much pressure exists on all firms to innovate and adapt. A ten year phase-in is far more plausible.

Conclusion

The Board is to be commended for recognizing that strict reliance on the RCAF-U is not appropriate. However, because it relies on the RCAF-U as its initial starting point, and then transitions to the RCAF-A over too long a period of time, the net effect of the

¹⁵ *Argus Coal Transportation Report*, April 20, 2006, p. 4.

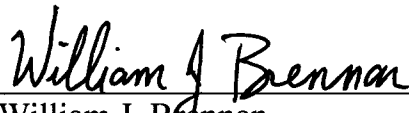
Board's proposal is quite modest. Indeed, by limiting its DCF analysis to 10 years, the Board would further limit the ability of a SARR to capture productivity improvements.

By contrast, the approach recommended here not only would speed up the transition but it would also ensure that the initial starting point (which is of critical importance) fairly and reasonably reflects the kinds of productivity improvements that are available even to brand new carriers.

VERIFICATION

I, William J. Brennan, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on April 28, 2006


William J. Brennan

**Vita of
WILLIAM J. BRENNAN, PHD**

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Experience

TRANSPORTATION ECONOMICS, INCORPORATED,
OAKTON, VIRGINIA 2005-Present

Managing Director

- As co-founder of this economic consulting firm, I work to provide shippers with the best possible advice regarding their transportation and energy needs.
- As a managing partner, I also oversee the staff and provide project management. I estimate the costs of transportation movements, write briefing papers, and provide advice regarding transportation options for clients. In addition, I conduct market research, economic research, feasibility studies, and other studies as required to insure economic and efficient transportation alternatives for clients.

SURFACE TRANSPORTATION BOARD,
WASHINGTON, D.C. 1999-2005

Economist

- My primary responsibility was to work on maximum rate cases. I served as team leader (Xcel v. BNSF), variable cost analyst (TMPA v. BNSF), and a traffic group analyst (Xcel v. BNSF, PPL Montana v. BNSF). The team I led in Xcel v. BNSF won the Secretary's Team Award from Secretary Mineta (the first ever team award given to the STB).
- As a member of the Merger Team, I played a key role in developing the Board's new merger rules. I wrote the initial draft that served as the base for all subsequent discussions and many of my economic insights and recommendations were incorporated into the final rules. I was recognized personally by Chairman Morgan for my efforts.

U.S. DEPARTMENT OF AGRICULTURE,
WASHINGTON, D.C. 1997-1999

Economist

- I was responsible for monitoring railroad performance and pricing issues. I prepared testimony and speeches for Sec. Glickman on various transportation related issues. I prepared the pleadings USDA submitted to the Board in numerous cases, including Ex Parte 573, Ex Parte 575, the Conrail merger, UP/SP oversight, and the DM&E construction case.

- I was a member of USDA's "Rail Team." My colleagues included agricultural marketing experts and transportation industry analysts. Together, we assessed the ability of U.S. transportation systems to move American agricultural products to domestic and foreign markets.
- I played a key role in organizing and developing the agenda for the 1998 National Agricultural Transportation Summit. In appreciation, and in recognition of all our work on railroad issues, the Rail Team received USDA's highest team honor, the Secretary's Award.
- Along with a colleague, I wrote a pair of articles on the Western service crisis for USDA's flagship magazine, *Agricultural Outlook*. These articles (March and December, 1998) both received cover status and the magazine's editors awarded us "Honorable Mention" in their annual competition for best article.

ASSOCIATION OF AMERICAN RAILROADS,
WASHINGTON, D.C. 1992–1997

Economist

- Analyzed regulatory and legislative proposals on a variety of topics, with particular emphasis on labor, safety, and trade issues.
- Prepared statistical and analytical reports for association members and senior staff.
- Helped prepare the Rail Cost Adjustment Factor and the Railroad Cost Recovery Indexes.

NATIONAL MACHINE TOOL BUILDERS ASSOCIATION,
MCLEAN, VA. 1988–1992

Economist

- Analyzed regulatory and legislative proposals.
- Prepared statistical and analytical reports.

VERSAR, INCORPORATED,
SPRINGFIELD, VA. 1986–1988

Subcontract Administrator

Education

- 2006 – Ph.D. Economics,
Department of Economics, George Mason University, Fairfax, Virginia.
Dissertation: Toward an Even More General Theory of Regulation
- 1995 – M.A. Economics,
Department of Economics, Virginia Polytechnic Institute and State University,
Northern Virginia Center, Falls Church, Virginia.
- 1985 – B.A. Economics and English,
Departments of Economics and English, College of William and Mary, Williamsburg,
Virginia

Research

Presentations:

- “The Long and Short Run: Pricing in the Railroad Industry – Implications for Shippers” presented at the Western Coal Traffic League Winter Conference.

Published:

- “The Western Rail Service Crisis: One Year Later” with Jerry Norton, published in the Agricultural Outlook.
- “Rail Problems Disrupt Grain Shippers” with Jerry Norton, published in the Agricultural Outlook.

VERIFIED STATEMENT OF JOSEPH J. PLAISTOW

I. INTRODUCTION

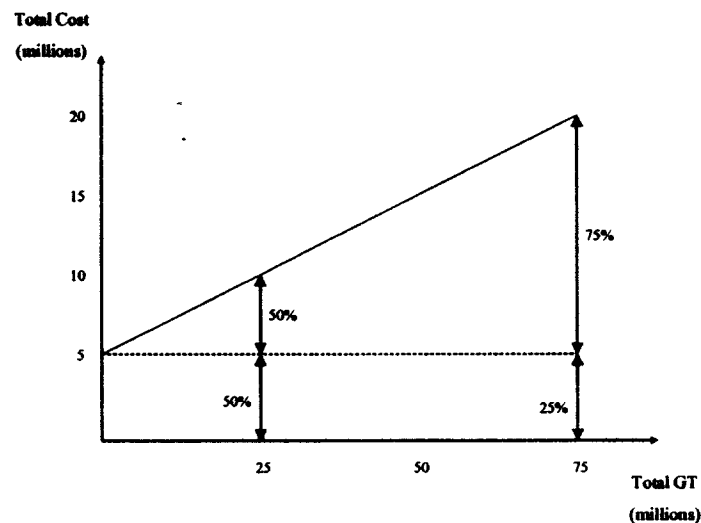
My name is Joseph J. Plaistow. I am an economist and a Vice President of the economic consulting firm of L. E. Peabody & Associates, Inc. The Firm's offices are located at 1501 Duke Street, Suite 200, Alexandria, Virginia 22314. My qualifications and experience are attached to this verified statement.

In Ex Parte No. 657 (Sub-No. 1), the Board proposes to do away with movement-specific adjustments to the system-average unit costs in rate reasonableness cases. Throughout the existence of the Interstate Commerce Commission ("ICC") and the Surface Transportation Board ("STB"), movement-specific variable costs have been a cornerstone of rate reasonableness proceedings. As part of the justification for its dramatic departure from decades of precedent, the Board states:

"adjustments to URCS may not provide more reliable results than using the system-average expenses. The regression models in URCS provide estimates of the percent of each expense category that is variable. That variability parameter is then combined with the total expense category to estimate the variable component. Although parties routinely seek to substitute a movement-specific cost in place of system-average cost, they apply the system-average variability parameter to calculate the proposed movement-specific adjustment. Such an approach is improper, as the variability parameter will increase when traffic increases on a network. In other words for movements over high-density segments, the variability percentage should be higher than for the "system average" movement. But such adjustments to the variability percentage are not made when parties submit proposed movement-specific adjustments."

As the basis for its claim that "...the variability parameter will increase when traffic increases on a network..." the Board relies solely on an unsupported graph placed into evidence by the defendant in the Xcel proceeding, that purported to show the variability relationship between Total (Road Property Return and Depreciation) Cost and Total GT (i.e., Gross Tons of traffic density). That graph is reproduced below:

Variability Example



While the Board makes its variability factor claim broadly applying to all cost categories, the Variability Example graph itself only applies to the road property category. In all recent coal maximum rate proceedings, road property return and depreciation costs have been a major movement-specific adjustment to system average variable costs made by the shippers and objected to by the railroads. In these proceedings, variability has been an issue almost

solely with regard to road property return and depreciation costs. While there have been sporadic, contentious mentions of variability with regard to certain other cost categories, the variability of most cost categories was agreed upon by each railroad and each shipper.

I note at the outset that the Variability Example is not a tested, verified illustration of the road property return and depreciation cost function. The relationship that actually applies to that cost function for regulatory purposes is a flat 50% variability at all densities, the conclusion reached by the ICC in *Adoption of the Uniform Railroad Costing System As A General Purpose Costing System For All Regulatory Costing Purposes*, Ex Parte No. 431 (Sub-No. 1) ("*Adoption of URCS*"), and the precedent that has controlled every rate reasonableness proceeding since. The Variability Example cited by the Board is a partisan claim that has never been proven, and cannot be the basis for a change in long-established practice.

I have been asked to address the Board's position on variability and to show why the Board's claim that "...the variability parameter will increase when traffic increases on a network..." is unsupported and contrary to the previous maximum rate reasonableness decisions issued by the Board and its ICC predecessor.

The remainder of this verified statement is organized under the following topical headings:

II. The Board's Historical Position

III. Additional Reasons Why the Board's Current Variability Factor Position is Unsupported

IV. Conclusion

II. THE BOARD'S HISTORICAL POSITION

In *Adoption of URCS*, one of the first issues the ICC addressed was the selection of a system design; that is, whether URCS should adopt a linear functional form under which the average variability would apply across all levels of density, or rely on cost elasticities and curvilinear functional forms and thus permit the use of different variability factors depending on the traffic density. *Adoption of URCS*, 5 I.C.C. 2d at 900-919. The ICC selected the linear functional form of the cost equations and average variability factors. *Id.* at 900-909. In *Adoption of URCS*, the ICC rejected the routine use of density adjustments to standard URCS variability factors, instead permitting parties to propose such an adjustment, if it was proved to be superior to the standard URCS average variability factor treatment. *Id.* at 894. In the instant rule-making, the Board effectively is advocating a change in its established policy on variability without any proof that the change is warranted. Over the years, railroads have presented arguments – predicated on hypotheticals similar to that presented by the Board in the Decision – to support use of a road property variability factor higher than the URCS 50% factor. These efforts have been uniformly rejected by the ICC and the Board as lacking “empirical foundation.”¹ In this case, the Board presents no empirical data or

¹San Antonio, 5 I.C.C.2d at 894; OPPD; TMPA I; Xcel I.

regression analyses to support its position that application of the 50% variability factor to road property costs no longer is appropriate.

Road property variability is perhaps the longest standing "settled issue" in rail cost accounting, inasmuch as the 50% variability factor across all traffic density levels has been applied since the 1940's and has been re-affirmed several times since its establishment. The most recent re-affirmation followed an exhaustive, critical econometric review by the ICC and its expert, Dr. M. Daniel Westbrook, Assistant Professor of Economics, Georgetown University.² Following that review, the ICC rejected the view of variability that the Board now suggests supports the elimination of movement-specific adjustments to system average costs.

In *Adoption of URCS*, the ICC stated at p. 3 that it is "...our intention to adopt URCS, as proposed here, in lieu of Rail Form A, for all regulatory costing purposes where such costs are appropriate." The ICC included in its decision a determination "to continue to rely on Rail Form A variability for road and equipment return" (*Id.* at 10) because, unlike most cost components for which Dr. Westbrook was able to develop regression equations with strong regression statistics and explanatory power (*id.* at 7), neither Dr. Westbrook (nor any other party) was able to develop a functional relationship for road capital costs superior to Rail Form A's 50% variability assumption.

²See *Adoption of URCS*, Decision served January 26, 1989.

In *Adoption of URCS*, Dr. Westbrook set out the following econometric techniques for the development of acceptable cost relationships for application in URCS:

Specification and estimation of an econometric model depends upon three things: (i) a clear definition of the theoretical construct that is to be estimated; (ii) a theoretical model, including clearly stated assumptions, that relates the object of interest to an appropriate data set in a meaningful way; and (iii) an appropriate data set with which to carry out the estimation.³

In calling into question the longstanding position on variability for road property, the Board has not offered any of these. Instead, it simply relies on an assumption that the Variability Example graph is an accurate illustration of some unknown "data set".

The Board must acknowledge that the 50% variability factor was not established by a regression equation, so it must not assume, without any econometric foundation, that the 50% factor applies only at the average density. The 50% variability factor always has been applied at all densities by the Board and its predecessor. Further, up until the last few years, the 50% variability was applied at all densities by all the major Class I railroads. The Board's claim here that it would be impermissible for a shipper to make line segment-specific adjustments on the denser-than-average line segments its movements traverse, without also increasing the variability ratios, is contrary to the long-established application of the 50% variability factor to road property costs at all densities.

³ M. Daniel Westbrook, Ph.D, "Research Report on URCS Regression Equations," October 17, 1988, page 2.

During *Adoption of URCS*, the railroad industry through The Association of American Railroads ("AAR") urged the ICC to adopt a variability factor for road property higher than 50%. The railroads urged the Commission to overturn the long-standing application of the 50% road property variability factor by analogies to relationships between variable costs and density for other cost components. See "Comments of Association of American Railroads", March 20, 1989, page 8 and V.S. of Rawert, page 17. At pages 8 and 9, the AAR argued:

Use of the Rail Form A variability ratio, 50 percent, as a default value significantly understates true variability, because the economic depreciation of investment represented by those accounts is far more variable with volume than indicated by the Rail Form A coefficient.

The Commission has proposed to default to the Rail Form A variability ratio, 50 percent, for return on capital invested in road property. This approach would significantly understate actual variability. The cost of capital invested in physical assets is as volume-variable as the physical stock of the assets themselves. Better default values would be the variabilities determined by URCS for each railroad for roadway and switching maintenance.

See also Id., Rawert V.S. at 17-18 (recommending application of the same variability ratios developed for running track maintenance).

The relationships urged upon the ICC by the railroads did not involve return on road property and depreciation costs, and the conclusions were not adopted. Likewise, in the present case, the Board has not grounded its proposal on any accepted relationship for return on road property and depreciation costs.

If the Board were to reopen this long-settled issue, the variability of road property return and depreciation very likely would be found to be significantly less than 50%. By definition, road property assets are fixed assets.⁴ The railroad industry is noted for having particularly long-lived assets, with the average life of the assets included in a shipper's return on road property and depreciation costs adjustment factor being greater than 30 years. Because road property assets are not fungible⁵ or easy to sell like equipment, once railroads make road property investments those assets are a sunk investment. If volume disappears, there is little a railroad can do to liquidate those assets.

The variability of road property investments bears no resemblance to the variability of equipment investments, since equipment investments are fungible, are shorter-lived, and can be made in much smaller increments than road property investments. For example, BNSF had to invest billions of dollars in road property in the Powder River Basin in order to develop the coal proposed to be mined and brought to the electric utility markets across the nation. That was a huge sunk investment. By contrast, BNSF could increase its equipment capacity by a train at-a-time or

⁴Fixed assets are "...tangible property used in the operation of a business, but not expected to be consumed or converted into cash in the ordinary course of events." See Dictionary of Finance and Investment Terms, third edition, copyright 1991 by Barron's Educational Services, Inc. Library of Congress Catalog Card No. 90-48232, page 152.

⁵Webster's defines fungible as "...being of such nature or kind as to be freely exchangeable or replaceable, in whole or in part, for another of like nature or kind." See Webster's Encyclopedic Unabridged Dictionary of the English Language, copyright 1994 by dilithium Press, Ltd. page 574.

even by a car at-a-time. This suggests that the variability of road property investment costs is far less than the variability of equipment investments.

The variability of road property return and depreciation costs probably is much closer to 0% than it is to 100%. However, no one has ever successfully documented the functional relationship between variable costs and road property investment return and depreciation. Nor is it appropriate for the Board to challenge the long-settled 50% variability factor for road property return and depreciation costs now, without such evidence, or use such an unfounded challenge as a pretext to disallow movement-specific adjustments to system average URCS costs across-the-board.

III. ADDITIONAL REASONS WHY THE BOARD'S CURRENT VARIABILITY FACTOR POSITION IS UNSUPPORTED

The Board's new variability arguments are unsupported for several additional reasons.

First, because of excess capacity at certain locations, not all increases in traffic cause incremental investment in road property. Instead, costs relating to major road property investments are step functions. Once these costs are incurred, the road property is typically capable of handling large traffic volume increases before the next capacity-expanding road property investments need to be made.

The ICC recognized this principle in San Antonio. In that case, BNSF's predecessor asked the Board to utilize a line-specific variability factor of 100%. The ICC rejected this contention, and utilized the 50% Rail Form A variable factor. In so holding, the ICC stated:

Capital expenditures may generate excess capacity at the time undertaken. Such excess capacity, when considered in conjunction with density, has the effect of reducing investment variability. Prior Commission studies underlying the RFA road property variability factor support the concept. This premise indicates that railroad use of a road property variability factor of 100 percent overstates the level of variability. In the absence of suitable regression studies or other acceptable indicia, the RFA average experience factors used by complainant are given preference over defendant...

Id., 1 I.C.C. 2d at 585.

Second, incremental investment can change fixed costs. For example, if increases in traffic cause a railroad to double-track a line segment, part of the increased costs of the second track becomes part of the fixed costs; i.e., not all costs associated with the new investment will be eliminated if the traffic is eliminated.

Third, the Board's Variability Example assumes that fixed costs remain unchanged regardless of the density of the line. The Board rejected this theoretical construct in Duke/NS I:

By definition, fixed costs are those costs that do not vary with output and would include investments in land, tunnels, track, and bridges. But this does not mean that the fixed investment costs are the same for light-and heavy-density lines. The fixed investments required for a superhighway are not the same as the fixed investments needed for a country road. The two roads may share certain basic investments, but it would be implausible to just assume that total fixed investment would not depend on the expected use of a road or, in this case a rail line.

Id. at 22.

Fourth, the Board assumes that the URCS 50% variability factor correlates to a “system-average” density. However, the 50% factor in URCS is a default factor – just as it was in Rail Form A. The Board has introduced no study or other data showing how the 50% factor correlates with so-called “system-average” density. In practice, the ICC and the STB have applied the 50% factor in all instances, regardless of the density of the involved lines.

Fifth, road property depreciation costs depend upon the depreciation rates applied to the road property investments. The Board fails to mention that the depreciation rates it has approved for application to each Class I railroad already reflect higher costs for higher traffic densities. Account 8, Ties, Account 9, Rail and OTM, and Account 11 Ballast are the three largest road property accounts, comprising almost half of all road property investment and more than half of the investment in the 13 accounts that shippers adjust in their line segment-specific adjustments to road property return and depreciation costs. For Accounts 8, 9, and 11, the depreciation rates, and, thus the annual expense charged to operating expenses, for the highest traffic density group is sometimes double the rate charged for the lowest traffic density group. Any alteration to the

variability factor applying to road property return and depreciation costs must take this depreciation rate-density relationship into account.

IV. CONCLUSION

The Board's proposal to eliminate movement-specific adjustments to URCS is based, to a significant extent, on its position with regard to the variability of road property return and depreciation costs. However, the Board has no basis for its position on variability. Absent sound evidence to justify departure from the ICC's ruling in *Adoption of URCS*, which has not been presented, the Board cannot now rely on its new variability factor claims as a basis for its elimination of movement-specific adjustments.

VERIFICATION

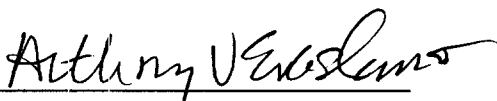
COMMONWEALTH OF VIRGINIA)
)
CITY OF ALEXANDRIA)

I, Joseph J. Plaistow, verify under penalty of perjury that I have read the foregoing Verified Statement of Joseph J. Plaistow, that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.



Joseph J. Plaistow

Sworn to and subscribed
before me this day of May 1, 2006.



Anthony V. Evanshaw III
Notary Public for the State of Virginia

My Commission expires: September 30, 2007

QUALIFICATIONS OF JOSEPH PLAISTOW

Mr. Plaistow is a Vice President and principal of L.E. Peabody & Associates, Inc., an economic consulting firm whose principal office is located at 1501 Duke Street, Suite 200, Alexandria, VA 22314. The specific evidence Mr. Plaistow is sponsoring relates to adjustments to variable costs and the advisability of making density-based adjustments to the variability factor applying to road property return and depreciation costs.

Mr. Plaistow graduated in 1967 from Michigan Technological University with a Bachelor of Science Degree in Metallurgical Engineering. In 1972 he graduated from the University of Minnesota with a Masters Degree in Business Administration. He is a member of Tau Beta Pi (the national honorary engineering fraternity), Alpha Sigma Mu (the national honorary metallurgical fraternity), Phi Eta Sigma (a national academic honor society), and Phi Kappa Phi (a national academic honor society). He is also a member of the Association for Transportation Law, Logistics and Policy, and is a past President of the Washington Chapter and National Secretary of the Cost Analysis Chapter of the Transportation Research Forum.

In 1998, Mr. Plaistow joined L.E. Peabody & Associates, Inc., where he advises clients on transportation economics, rate structures, and rate reasonableness determinations. He came to L.E. Peabody & Associates, Inc. after serving as Vice President of Snavely King Majoros O'Connor & Lee, Inc. where from 1988 to 1998 he provided economic consulting services in the transportation field. In 1987 and 1988, he

was Vice President, FMI, Inc., managing the efficient operation of refrigerated boxcars. From 1972 to 1987, Mr. Plaistow was employed by the Burlington Northern Railroad ("BN") (now BNSF) as Director of Costs and Economic Analysis in the Finance Department, as Director of Equipment and Service, and as Director of Planning and Equipment in the Food and Manufactured Products Business Unit of the Marketing Department. From 1967 to 1970, Mr. Plaistow was a metallurgical engineer for Pickands Mather designing processing facilities in the iron mining region of northern Minnesota.

While at BN, Mr. Plaistow determined the variable cost of operations using both internal management and regulatory costing procedures. In the late 1970's and early 1980's, he directed the team that designed a complete replacement of BN's management costing systems including the institution of separate and distinct systems for the costing of coal, intermodal, and general freight.

The management costing system renovation at BN preceded the replacement of Rail Form A with URCS for regulatory costing in the railroad industry. Mr. Plaistow participated on behalf of BN in industry meetings evaluating the early versions of URCS components as they went through their developmental stages. He also testified on behalf of BN in numerous ICC proceedings regarding the economic principles underlying the implementation of maximum-rate principles including the proper application of cost of capital and capital investment analyses and procedures.

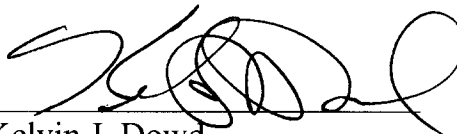
Throughout his 33-year career in transportation, Mr. Plaistow has become thoroughly familiar with the economic analysis of railroad operations and service from

the perspective of both the shipper and the transportation provider. He has testified before the Board and its predecessor many times on cost and economic issues, including the presentation of evidence on transportation costs in maximum rate reasonableness cases. He has also made public presentations and written published articles in the areas of transportation economics, maximum rate regulation, corporate investment policies, competitive effects of mergers, and the competitive access issue.¹

¹ See, e.g., "Strategic Railroad Issues - Service & Pricing" presented at the Seventh Annual Burns & McDonnell Coal-Fired Generation Symposium, April 26, 2006, "Recent Rail Mergers - What Was Promised - What Was Delivered", Rail Customer Forum, March 1, 2000, "The Effects of Increased Competition and Improved Service on the Railroad Industry and Its Customers", Alliance for Rail Competition, November 1999, "Competitive Effects of Railroad Mergers" Journal of the Transportation Research Forum, Spring, 1999, "A Layman's Guide to Economic Terms in Stand-Alone Costing", Transportation Practitioner's Journal, Summer 1994; "Regulation as a Substitute for Competition", College of St. Thomas, St. Paul, MN, May 5, 1980; "Are Internal Rate of Return and Other Investment Analyses Misleading?", Railroad Capital Investment Conference, St. Charles, Illinois, November 5, 1979; "Analyzing Large Incremental Investments", Cost Analysts Organization Meeting, Lexington, KY, May, 1978; and "Railroad's Opportunity to Earn a Fair Return", ICC Practitioner's Journal, March-April, 1976.

CERTIFICATE OF SERVICE

I hereby certify that on this 1st day of May, 2006, I caused a copy of the foregoing Joint Opening Comments of the Western Coal Traffic League, Concerned Captive Shippers, Western Fuels Association, Inc., Edison Electric Institute, National Rural Electric Cooperative Association and American Public Power Association and accompanying cover letter to be served upon all parties of record in this proceeding.



Kelvin J. Dowd