

BEFORE THE  
SURFACE TRANSPORTATION BOARD

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DOCKET NO. FD 35557  
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ENTERED  
Office of Proceedings  
November 15, 2012  
Part of  
Public Record

REASONABLENESS OF BNSF RAILWAY COMPANY  
COAL DUST MITIGATION TARIFF PROVISIONS  
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ARKANSAS ELECTRIC COOPERATIVE CORPORATION'S  
REPLY EVIDENCE AND ARGUMENT  
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Dated: November 15, 2012

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In this Reply, AECC 1/ addresses errors and omissions in the opening evidence and argument submitted by BNSF and (in one very important respect) USDOT.

SUMMARY

In AECC's Opening, we showed that the safe harbor provision of BNSF's revised coal dust tariff is unreasonable for several reasons, including the following:

BNSF and UP are principally responsible for causing the deposition of fugitive coal on these lines, through operating practices and track conditions that cause coal to be shaken out of the rail cars. It is unreasonable for the safe harbor to impose

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1/ AECC is Arkansas Electric Cooperative Corporation. As in its Opening, in this Reply AECC will use conventional abbreviations and acronyms, such as BNSF for BNSF Railway Co., UP for Union Pacific Railroad Co., PRB for Powder River Basin, etc. Verified Statements submitted by a party in its Opening are cited [name of witness] VS, and the reply verified statement of Michael A. Nelson submitted in this Reply is cited Nelson RVS.

on coal shippers an obligation to prevent the deposition of fugitive coal caused by the railroads. Moreover, the use of toppers will not prevent the deposition of fugitive coal caused by the railroads.

The safe harbor provision requiring shippers to reduce fugitive coal by 85% is unreasonable, because that much dust reduction cannot be achieved under normal real world conditions by the toppers that BNSF has approved. BNSF created the appearance that toppers are highly effective by simply excluding from testing the real world conditions where they are not effective.

Even if the safe harbor could achieve its objectives, the costs of doing so would not be reasonably commensurate economically with the benefits that would be achieved.

Shippers and mines, and to a lesser extent railroads, have already made substantial progress in reducing releases of fugitive coal, which the safe harbor ignores. Further improvements can be achieved through cost-effective and direct remedies that do not involve the use of toppers.

{{ [REDACTED]

[REDACTED]

[REDACTED] }} This development needs to be considered in evaluating the benefits of the safe harbor provision of the tariff.

In this Reply, AECC addresses, primarily, BNSF's case in chief, which purports to show why the safe harbor is reasonable and should be imposed on shippers. In summary, this Reply shows:

- A. BNSF's Opening fails to address important issues that were identified in Coal Dust I and discussed in the Board's March 3, 2011 Decision, such as the role of railroad operating practices and infrastructure in causing the deposition of fugitive coal, and whether the safe harbor is "reasonably commensurate economically with the problem it addresses".
- B. The safe harbor promised by BNSF is not safe after all, because BNSF reserves the right to impose penalties on shippers who profile their loads with the prescribed loading chute and spray their loads with the prescribed toppers, if BNSF concludes that the results are not "optimal".
- C. BNSF ignores gains in fugitive coal control that have already been achieved through the actions of shippers and mines (and even railroads).
- D. BNSF's claim that toppers remain intact until they reach their final destination is refuted by {{ [REDACTED] }} toppers cannot achieve the promised reductions in fugitive coal deposition between the mine and the power plants.
- E. BNSF's claims that toppers are not harmful and are environmentally safe {{ [REDACTED] }} BNSF has apparently abandoned claims that coal dust released during rail transportation creates environmental issues that require remediation.
- F. BNSF's assertion that cost-sharing is a "commercial" issue beyond the Board's jurisdiction is wrong as a matter of fact and law, and demonstrates the market power wielded by BNSF over the coal dust issue; further, the fact that the safe harbor does not provide for cost-sharing has adverse equity and efficiency effects that the Board must consider in evaluating its reasonableness.
- G. BNSF's claims that use of toppers would conserve significant quantities of coal are refuted by {{ [REDACTED] }} and as a result of topper failures the amount of coal lost when toppers are used may be greater than the coal lost from untreated cars.
- H. BNSF's attempt to minimize the cost of the safe harbor on shippers is based on {{ [REDACTED] }}

██████}} and is not reflective of topper prices that shippers are actually facing or of the resource costs associated with topper spraying.

- I. BNSF's assertion that toppers are used on coal lines other than the Joint Line is misleading. Toppers are used on coal trains in only one other location in the United States, on export movements, for reasons that do not apply to the Joint Line, and where the shippers have no direct involvement. The use of toppers in a few foreign countries reflect circumstances that tend to undermine, rather than support, key elements of the safe harbor provisions.

This Reply also addresses one claim made by USDOT in its Opening, that "coal dust threatens railroad safety more than other foulants . . . ." Opening Comments Of The United States Department Of transportation (USDOT Opening) at 5. This assertion is totally unsupported by the literature and studies that USDOT cites in support of it. Coal dust is only one of several ballast foulants with which railroads have to deal, and it presents no greater safety threat than others.

These issues are discussed at greater length in the Argument that follows, and evidence and analysis regarding several of them are found in the attached Reply Verified Statement of Michael A. Nelson.

#### DISCUSSION

- 1. BNSF's Opening Ignored Important Issues.**

This is the second time in recent years that a BNSF coal dust tariff has come before the Board, so BNSF is well aware of the issues that the Board has said are relevant to determining the reasonableness of such a tariff. Yet in its Opening, BNSF has simply ignored substantial and important issues regarding whether the new tariff, and in

particular its safe harbor provision, is reasonable. Below, we mention two of the most troubling examples of BNSF's tactics.

In Coal Dust I (FD 35305), the Board noted, but did not have to decide, shippers' claims that railroads' actions in operating their trains and designing and maintaining their infrastructure were responsible for much of the deposition of fugitive coal.

The Shipper Interests claim that the way BNSF operates its trains, changes in track modulus, and poor maintenance of the line increase coal dust dispersion. [Citing evidence and argument submitted by AECC.] BNSF responds that it is the shippers' responsibility to ensure that their freight remains in the loaded cars.

Coal Dust I at 11. Although the Board did not have to decide in that case the extent to which railroad practices caused the deposition of fugitive coal (because it found the BNSF tariff in that case unreasonable on other grounds), the Board clearly stated the principle that the railroad, not the shipper, is responsible for preventing deposition of fugitive coal caused by the way that the railroad transports the coal.

[O]nce a railroad accepts a loaded car, it bears responsibility for transporting the car in a manner that avoids releasing or spilling the shipment.

Coal Dust I, at 14.

In its Opening in this case, BNSF assumed that all deposition of coal dust is the fault of how the coal is loaded into the rail cars, and that it is therefore the responsibility of the shippers to prevent coal dust from escaping the cars. But BNSF made no effort whatsoever to prove that it (and UP) have carried out their "responsibility for transporting the car in a manner that avoids releasing or spilling the

shipment.” It is as though BNSF simply failed to read the portions of the Board’s Coal Dust I Decision that address railroads’ responsibilities.

BNSF also failed to make any effort to justify the 85% dust reduction requirement in its tariff and in its safe harbor. Yet, in Coal Dust I, at 5, the Board reaffirmed the principle that:

Whether a particular practice is unreasonable depends upon the facts and circumstances of the case. The Board gauges the reasonableness of a practice by analyzing what it views as the most appropriate factors.

The Board went on to explain that “a valid standard to be applied to the coal dust problem” is “a general presumption that a tariff should employ cost-effective practices that are reasonably commercially available”. Id. “Certainly, any tariff provision must be reasonably commensurate economically with the problem it addresses . . . .” Id., at 6.

But BNSF made no attempt in its Opening to show that its 85% standard is “cost effective” or that it is “reasonably commensurate economically with the problem that it addresses.” Whether or not 85% is the right standard is a central issue in deciding whether the safe harbor is reasonable. For example, BNSF personnel and consultants have found that profiling the coal, alone or in combination with the use of larger sizes of coal, can reduce coal dust deposition by {{[REDACTED]}}%, and that other measures being implemented by mines and shippers may also contribute to a substantial reduction in coal dust deposition. See Opening Evidence And Argument of Arkansas Electric Cooperative Corporation, Verified Statement of Michael A. Nelson (“Nelson VS”) at 35-36. If the dust reduction standard were somewhat lower than 85%, it likely already would have been achieved without anyone having to incur \${{[REDACTED]}}

million of topping costs (Nelson VS at 27), while still achieving most or all of the benefits that toppers might yield (Nelson VS at 29-30). Dust reduction without the use of toppers would also avoid the serious environmental problems that widespread spraying of chemical toppers would present. See Nelson VS at 32-35.

So, all this being so, is the safe harbor's 85% coal dust reduction standard, rather than a somewhat lower reduction percentage that would save nearly {{ [REDACTED] }} million dollars annually, "reasonably commensurate economically with the problem it addresses"? BNSF fails even to address that issue. Again, BNSF seems to have ignored the parts of the Board's Coal Dust I Decision that discuss railroads' obligations.

These were among the issues that BNSF knew that the Board would have to consider and decide in evaluating the BNSF tariff and its safe harbor provision, yet BNSF held back whatever evidence it has on these issues. The Board recently reminded litigants that "Principles of fairness and the orderly handling of cases require that 'parties submit their best evidence on opening, so that each party has fair opportunity to reply to the other's evidence.'" M&G Polymers USA, LLC v. CSX Transportation, Inc., NOR 42123, Decision served Sept. 27, 2012, at 9 (quoting Xcel Energy v. BNSF Ry., NOR 42057, Decision served Apr. 4, 2003, at 2. M&G Polymers, of course, involved a rate case and specific rules governing such cases, so it is not strictly binding in this case. But the "principles of fairness" certainly ought to apply here, too.

BNSF, by choosing not to address these obvious issues in its Opening is violating those principles of fairness in search of a tactical advantage. Presumably, BNSF

will present its evidence on these issues in its Reply, leaving the rebuttal phase as the only opportunity for AECC (and other opponents of the tariff and its safe harbor) to respond to BNSF's attempts to justify these crucial aspects of the safe harbor. In evaluating BNSF's arguments, the Board should bear in mind BNSF's reluctance to defend these elements of the safe harbor.

**2. The Safe Harbor Is Not Safe Because BNSF Still Is Trying To Implement A "Performance" Standard**

BNSF's prior coal dust tariff was based on a "performance" standard under which a shipper was required to reduce the coal dust deposition from its cars as measured at a BNSF monitoring station many miles from the mine where the coal was loaded. The Board found it "problematic" that a shipper might be unable to meet the performance standard "even if the currently accepted methods of coal dust suppression are employed . . . ." Coal Dust I Decision at p. 12.

BNSF's safe harbor does not rely on measurement of dust releases at the monitoring station, and BNSF claims that this should satisfy the Board's concerns. BNSF Opening Argument, at 12-14. However, the safe harbor basically recreates with profiling and toppers the situations the Board in Coal Dust I found objectionable with dust releases.

Specifically, the safe harbor calls for loads to be profiled using a loading chute with a shape defined by a template prescribed in BNSF's tariff. Even if shippers use the prescribed chute design to profile their loads, and also apply one of the toppers

approved by BNSF, 2/ if after-the-fact monitoring shows that they “fail to achieve optimal results”, BNSF reserves the right to “determine in the future” to impose “penalties and incentives” to “improve compliance efforts”. BNSF Opening Argument, at 23-24. Thus, even complying with the so-called “safe harbor” will not be enough to assure a shipper that it “would be considered in compliance with the tariff regardless of monitoring system results”, the same situation the Board found unacceptable in Coal Dust I, Decision served Mar. 3, 2011, at 12.

{{ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }} 3/

As Mr. Nelson discussed in his opening Verified Statement (Nelson VS at 21-26) and as is discussed further in his attached Reply Verified Statement (Nelson RVS

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2/ As AECC witness Nelson explained in AECC’s opening evidence, the prescribed “breadloaf” profile is inconsistent with the use of chemical toppers (Nelson VS at 21-16), but the safe harbor requires shippers to apply both measures to all loads.

3/ See, for example, BNSF COALDUSTII 00015711, which {{ [REDACTED] }}.

at Part 4 (B)), the profile established at the mine and the coating of the topper on the coal are likely to degrade during the course of the rail journey from the mine. This is particularly true where excessive stresses are placed on the coal load as a result of the railroad's operations (e.g., excessive speed, slack action, etc.) and/or the state and condition of the track (e.g., modulus changes, worn switches, etc.). Shippers have no control over these factors, which may materially alter the load profile and/or the integrity of toppers that have been applied. BNSF's threat to impose on shippers unspecified penalties for the performance of mines and vendors in profiling loads and applying toppers using a black box computer program to process observations taken far from the loading point duplicates basically the full set of fatal flaws that the Board properly identified in its rejection of BNSF's planned use of IDV measurements in Coal Dust I. If performance-based penalties are still threatened to shippers who profile and apply toppers to their loads in accordance with the safe harbor, there is no safe harbor.

**3. BNSF Makes Unsupported Claims That Its Tariff Is Supported By Shippers, While Ignoring Shippers' Actions To Improve Fugitive Coal Control; BNSF Has Failed To Correct Its Own Actions That Contribute To The Problem.**

BNSF argues that complying with the safe harbor provisions would not be "unduly burdensome or costly", that "most" of their shippers "accept responsibility to adopting loading measures that will keep their coal in the loaded railcars", and that "only a handful of shippers . . . have raised concerns about BNSF's Coal Loading Rule."

BNSF Opening at 3. <sup>4/</sup> BNSF has offered no evidence other than its own self-interested say-so that “most” PRB coal shippers support the BNSF tariff, and no shipper has come forward to endorse the tariff. But individual shippers (including AECC) and associations representing hundreds of shippers are participating in this proceeding because they oppose the tariff and find the safe harbor unsatisfactory. It is AECC’s understanding that, notwithstanding the pressure that BNSF has brought on shippers to abide by its commands, a majority of PRB coal still moves without toppers.

BNSF complains that this proceeding “is creating an impediment to progress even among shippers otherwise willing to move forward.” *Id.* at 4. If that is so, BNSF must blame this Board itself, which initiated this proceeding because “the safe harbor provision’s reasonableness is an issue of broad importance to the railroad industry.” FD 35305, Decision served Nov. 22, 2011, at 4. Due process of law always seems to be an “impediment to progress” to those who prefer to impose their own will without interference.

Although BNSF claims on the one hand that all but a “handful” of shippers are cooperating with its tariff, it asserts on the other hand that up to now “shippers and their mines have not engaged in extensive coal dust efforts . . . in the loading of coal cars, which directly affects coal dust losses in transit.” BNSF Opening Argument at 3. In fact, although most shippers oppose the tariff, most shippers have

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<sup>4/</sup> BNSF also makes the bizarre claim that some of the “handful” of opponents “are not even BNSF’s shippers” (BNSF Opening Argument at 3). The comment is bizarre because if the shippers are not BNSF shippers, they are UP shippers, and **in either event** they are effectively subject to the coal dust tariff.

made substantial efforts to control coal dust. Shippers have universally adopted profiling of coal cars and many have started using larger coal sizes to reduce coal dust. Mines have improved their practices in coal processing to reduce fines, and railcar inspection and maintenance have been strengthened. See Nelson VS at 35-36; Nelson RVS at Part 4 (A).

Although BNSF seeks to minimize the extent to which these efforts have reduced coal dust deposition (BNSF Opening Argument at 15), Mr. Nelson finds that BNSF's own documents show that profiling alone reduces coal dust by {{[REDACTED]}}, and that other actions by shippers and mines have resulted in further reductions. See Nelson RVS at Part 4 (A).

There is, of course, room for further improvement – particularly improvement by the railroads. Train speed, train handling, and infrastructure and maintenance issues produce impacts, forces, and vibrations that shake the coal out of the cars in transit. Shippers and mines cannot prevent these impacts, forces, and vibrations, and toppers cannot prevent the coal from being shaken from the cars as a result of them. See Nelson VS at 13-21. It is up to the railroads to make their contribution to solving the coal dust problem by addressing these issues, in accordance with the principles stated by the Board in Coal Dust I at 14 (“once a railroad accepts a loaded car, it bears responsibility for transporting the car in a manner that avoids releasing or spilling the shipment”).

In fact, BNSF has actually begun to address some of these problems (perhaps reluctantly, {{[REDACTED]}}

[REDACTED]

[REDACTED]}. Nelson VS at 36. BNSF does not appear to have measured how much these improvements have reduced coal dust deposition at these locations, but it is likely that the reduction has been significant. But BNSF (and UP in terms of its train operations) has still more to do. Until the railroads have addressed their own responsibility for fugitive coal deposition, they have no standing to denigrate the substantial efforts that shippers and mines have made to reduce fugitive coal.

**4. Toppers Lose Their Effectiveness Over The Thousand-Mile Journey From The PRB To The Power Plants**

The safe harbor toppers put a thin chemical coating over the top of the coal, which is supposed to “keep[ ] the wind from blowing coal dust out of a coal car or off the top of a coal stockpile.” BNSF Opening, VanHook VS at 4. That may work well enough on a stationary pile of coal, but coal cars move. Coal leaves a rail car not only because of wind, but also because of vibrations, impacts, and other forces caused by the movement of the train over the track (and, of course, the movement of the car causes wind over the coal even if nature doesn’t). Even assuming that a topper would be effective to “keep[ ] the wind from blowing coal dust out of a coal car”, the topper is not intended to prevent coal from being jolted out of the car by such forces. Moreover, these same forces can cause the thin chemical coating on top of the coal in the car to break apart so that it is no longer effective even to prevent wind-blown coal dust.

The evidence from BNSF’s Super Trial shows that {[REDACTED]

[REDACTED]

[REDACTED]} In Mr. Nelson’s verified statement in AECC’s Opening, he presented

a sample of {{[REDACTED]}}  
[REDACTED]}. These photographs showed unmistakable signs of {{[REDACTED]}}  
[REDACTED]}. Nelson VS at 22-26. As a result, in some  
instances {{[REDACTED]}}  
[REDACTED]  
[REDACTED]  
[REDACTED]}}.

Nevertheless, BNSF witness Rahm asserts that “at a plant” (unidentified)  
he had observed that “when trains reach the plant from the mine, the topper agent is  
still intact”. BNSF Opening, Rahm VS at 20. How many such observations Mr. Rahm  
made he does not say. Apparently he did not think to refer to BNSF’s own photographs  
showing {{[REDACTED]}}. In Mr. Nelson’s Reply, he  
reviews {{[REDACTED]}}  
[REDACTED]  
[REDACTED]  
[REDACTED]}}. He  
concluded from this analysis that BNSF knew, or should have known, that it was  
common for the safe harbor toppers {{[REDACTED]}}  
[REDACTED]}, which represents a comparatively small fraction of the length of most PRB  
coal movements. Nelson RVS at Part 3(B). In this same part of his Reply Verified  
Statement, Mr. Nelson provides additional photographic evidence of {{[REDACTED]}}

and cites several other reasons why BNSF should have been aware of the {{ [REDACTED] }} problem.

BNSF's claim that chemical toppers are a silver bullet to prevent deposition of fugitive coal is a fantasy. The same facts that cause fugitive coal to be shaken from the cars – train speed, train handling, modulus changes, and other track conditions – {{ [REDACTED] }}.

**5. BNSF Does Not Claim That Fugitive Coal From PRB Trains Raises Environmental Problems That Justify The Tariff.**

BNSF does not claim in its Opening, and has not produced any evidence, that coal dust released during rail transportation creates environmental issues that require remediation. Over the years, BNSF has repeatedly threatened shippers with the prospect that EPA concerns over coal dust released in transit could lead to requirements even more onerous than the application of chemical toppers. We trust that the Board will not be subjected to similar threats in this proceeding. 5/

**6. The Board Should Not Sanction BNSF's Use Of Its Market Power To Impose On Shippers The Full Costs Of Topper Applications**

One of the issues that the Board expressly identified for consideration in this proceeding is the absence from the safe harbor of any sharing of costs between BNSF and shippers. FD 35305, Decision served Nov. 22, 2011, at 4 n. 5: "The new proceeding [FD 35557] will allow parties to address issues raised by WCTL that are related to the reasonableness of the safe harbor provision, such as . . . the lack of cost

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5/ BNSF does claim that the use of toppers does not raise any serious environmental issues, but this is incorrect as shown in Nelson RVS at Part 4.C.

sharing . . . .” BNSF rejects the Board’s identification of this issue by asserting that the sharing of costs for the application of toppers is a “commercial” issue for which Board involvement is not warranted. BNSF Opening Argument at 25. In support of this assertion, BNSF witness Bobb reports that {{ [REDACTED] [REDACTED] [REDACTED] }}. BNSF Opening, Bobb VS at 11-13.

This is a red herring. This proceeding is not concerned with the terms of confidential transportation contracts outside of the Board’s regulatory jurisdiction. This proceeding is about a tariff (and the safe harbor provision thereof) through which BNSF seeks to impose on non-contract customers that it serves as a common carrier the obligation to pay the full cost of unneeded and useless topper applications. The Board has already said that it is within the proper scope of this proceeding to consider whether BNSF should share in the cost of the topper applications it requires.

Yet BNSF’s representations about the contracts it has negotiated over the last several years reveal an important truth: The fact that {{ [REDACTED] [REDACTED] [REDACTED] }} establishes that BNSF exercises market power over coal dust issues. See Nelson RVS at Part 4(D). 6/

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6/ We do not dispute that BNSF made substantial expenditures on the Super Trial testing, including, we understand, {{ [REDACTED] [REDACTED] }}. But these were expenditures incurred to support the tariff through which BNSF seeks to impose on its non-contract shippers the obligation to pay all the costs for applying toppers to their coal cars.

BNSF's market power raises two important economic issues that the Board needs to consider. BNSF's demonstrated ability and intent to insulate itself from the costs of topper application has left BNSF unconcerned with those costs, and able to pursue implementation of its own preferred remedy, irrespective of the relationship between the benefits that approach produces (all or virtually all of which accrue to BNSF) and the costs it imposes on shippers (and to some extent, mines). The fact that BNSF did not include any sort of cost-benefit or cost effectiveness analysis in its Opening shows that BNSF has no concern about the economic efficiency of its tariff: BNSF does not care whether the safe harbor toppers maximize the excess of benefits over costs, or even produce any benefits in excess of their costs. Why should BNSF care? It pays none of the costs. But shippers do pay the costs, they do care, and the evidence that AECC has presented shows that the topper requirement is economically inefficient, and constitutes an unsound economic condition contrary to the letter and spirit of 49 USC § 10101(5).

Furthermore, as Mr. Nelson shows in his Reply Verified Statement, the lack of cost sharing results in a violation of the Constrained Market Pricing principles that form the core of the Board's rate regulation practices. See Nelson RVS at Part 4 (D).

**7. BNSF's Remaining Arguments Are Without Merit.**

BNSF makes several miscellaneous arguments that we will touch on briefly. They are refuted more thoroughly in Mr. Nelson's Reply Verified Statement.

*a) Alleged Benefits To Shippers From Conservation Of Coal*

The coal dust that toppers supposedly would prevent escaping from rail cars is the property of the shippers, so BNSF argues that shippers should be happy to pay for keeping more of their cargo in the cars for delivery to the power plant. BNSF Opening Argument at 20. However, (1) as discussed at length in AECC's Opening and in this Reply, BNSF's tariff and safe harbor provision will not significantly reduce the amount of fugitive coal lost from coal cars; only changes in railroad operations and infrastructure can do that; and (2) the amount of coal "saved", even if the toppers performed in accordance with BNSF's claims, would be trivial. See Nelson RVS at Part 4 (E).

If BNSF were going to pay for coal dust reduction, it would sharpen its pencil and quickly conclude that toppers won't substantially reduce fugitive coal, and the limited maintenance savings that would be produced would be much less than the cost of applying the toppers.

*b) BNSF Claims Toppers Are Cheap*

BNSF claims that the cost of toppers may be as low as \${{[REDACTED]}}/T.

VanHook VS at 16. As Mr. Nelson explains, this figure is from an apparent {{[REDACTED]}}  
 [REDACTED]  
 [REDACTED]}}. It is not a price that is likely to be generally available year in and year out to coal shippers generally, and should not be used by the Board in any economic assessment of the safe harbor provision. Nelson RVS at Part 4 (F). But what

does BNSF care? BNSF doesn't have to pay for the toppers. Whatever the price, the shippers must pay it to satisfy the safe harbor.

*c) BNSF Claims Toppers Are Widely Used In Coal Transportation Except in the PRB*

BNSF would like the Board to believe that mandated application of toppers to coal cars is a well-accepted practice, and PRB coal shippers who impose BNSF's tariff and safe harbor are just out of step. It's not so.

The handful of examples that BNSF cites of toppers applied to coal cars each involved special circumstances that simply do not apply to PRB coal. See Nelson RVS at Part 4 (H). The only example BNSF cites of a topper use program in the United States involves a relatively short haul of coal across the comparatively densely populated state of Virginia for export, where the railroad and the mines pay for the toppers. Presumably the railroad and mines made a cost-benefit analysis (perhaps an informal one) and concluded that it was better to pay for toppers than face the public and political consequences. Unlike BNSF, they didn't involve the coal shippers with the process. BNSF's other examples of topper use are even more remote, as shown in Nelson RVS at Part 4(H).

**8. The Department Of Transportation's Claim That Coal Dust Threatens Rail Safety More Than Any Other Ballast Foulant Is Unsupported By Any Study Or Analysis.**

Finally, we must address the opening comments filed by the United States Department of Transportation (USDOT). USDOT asserts:

First, the Department remains concerned about the problem of coal dust and its effects upon rail safety. . . . As the

Department explained in its submissions in docket number 35305, coal dust can threaten rail safety by damaging rail ballast. . . .

\* \* \*

Thus, the Department has already expressed the view that coal dust threatens rail safety more than other foulants, and that its emission should be contained. . . .

USDOT Opening Comments, at 4-5.

USDOT's assertion that coal dust is the worst ballast foulant is important, for several reasons. The more serious a problem coal dust presents, the more it would be reasonable to do (and spend) to address that problem. This is particularly so if the nature of the coal dust "threat" is to "safety", rather than merely to maintenance expenses. On the other hand, if coal dust is only one of several ballast foulants, all of which be dealt with to protect the stability of the track, then the benefit of reducing coal dust deposition may not be that great – because the railroad would still have to clean the ballast of the other serious foulants.

USDOT does not present any evidence in its Opening to support its claims about the seriousness of the coal dust problem, but relies instead on evidence that it cited in its Rebuttal filing in Coal Dust I.

Assuming for the sake of discussion that evidence from a different docket can be made part of the record in this docket by such a reference (but see 49 CFR § 1114.5), we turn to the USDOT Rebuttal in FD 35305 and find that the Department there cited the following authorities for its opinion that coal dust is the worst ballast foulant:

DOT's Volpe National Transportation Systems Center has conducted several studies on track buckling to evaluate track strength and stability limits, including the effects of ballast condition. These materials and the relevant literature on the subject confirm the particularly destructive qualities of coal dust on ballast. [n. 2:] The pertinent pages of that literature are attached hereto. The Volpe studies are available at: <http://www.volpe.dot.gov/sdd/pubs-buckle.html>.

Rebuttal Comments Of The United States Department Of Transportation, FD 35305, at 2 and n. 2.

The pages attached to the USDOT Rebuttal are from two railroad engineering texts, 7/ but neither says that coal is the worst ballast foulant – indeed, only one of them even mentions coal (Hay, at 427), and only in passing. As for the Volpe web address referred to by USDOT in the Rebuttal, it is currently not functioning, but counsel for USDOT provided an alternate web address: <http://www.volpe.dot.gov/coi/pis/pubs-buckle.html>. See the attached correspondence.

Four Volpe studies are accessible through the new web address provided by USDOT, but none deals with the effect of coal dust on ballast. The two most recent studies (from 2003) dealt with track buckling due to heat and were based on studies performed on the North East Corridor, and did not mention coal dust. A 2001 study dealt with “High-Speed Rail”, again with no mention of coal dust. A 1999 study dealt with track buckling, again with no mention of coal dust.

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7/ W. Hay, Railroad Engineering (2d Ed.), and E. Selig and J. Waters, Track Geometry And Structure Management.

Thus, USDOT's opinion as expressed in its Opening in this case (as well as in its Rebuttal in Coal Dust I) is completely unsupported by the literature cited or by any identified Volpe studies. The Board should ignore these unsupported assertions.

Furthermore, as Mr. Nelson showed in AECC's Opening, the other principle advocate of the claim that coal dust is the worst ballast foulant – BNSF's Dr. Erol Tutumluer – has changed his mind and decided that clay, not coal, is the worst threat to ballast. Nelson VS at pp. 30-31.

Thus, the Board is now in a position to evaluate the safe harbor on its merits, *undistracted by unsubstantiated, sky-is-falling claims about coal dust.*

#### CONCLUSION

BNSF has failed to establish in its Opening that the safe harbor is a reasonable response to fugitive coal deposition from PRB rail cars. BNSF has not even addressed crucial issues that the Board highlighted in Coal Dust I.

The problem of fugitive coal is already being effectively addressed by shippers and mines, and even to a limited extent by railroads. The mandatory use of toppers required by the safe harbor would not significantly reduce – and might even increase – the amount of fugitive coal deposited on these lines. The safe harbor would impose expensive, burdensome and environmentally problematic obligations and liabilities on shippers that would not be commensurate with any benefit to be achieved.

The Board should disapprove the tariff and its safe harbor as an unreasonable practice.

Respectfully submitted,



Eric Von Salzen  
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Suite 800  
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(202) 842-2345

Counsel for Arkansas Electric Cooperative  
Corporation

Michael A. Nelson  
101 Main Street  
Dalton, MA 01226  
(413) 684-2044

Transportation Consultant

Dated: November 15, 2012

**ATTACHMENT**

**CORRESPONDENCE BETWEEN  
COUNSEL FOR AECC  
AND  
COUNSEL FOR USDOT**

**ATTACHMENT**

**CORRESPONDENCE BETWEEN  
COUNSEL FOR AECC  
AND  
COUNSEL FOR USDOT**

PUBLIC

**From:** Eric Von Salzen <[vonsalz@aol.com](mailto:vonsalz@aol.com)>  
**To:** Christopher.Perry <[Christopher.Perry@dot.gov](mailto:Christopher.Perry@dot.gov)>  
**Cc:** evonsalzen <[evonsalzen@mwmlaw.com](mailto:evonsalzen@mwmlaw.com)>  
**Subject:** Re: FD 35557  
**Date:** Wed, Nov 14, 2012 3:13 pm

---

Thanks, Chris. In our Reply we will treat the Volpe reports in the updated web link you provided as being what USDOT relies on to support its position that coal dust threatens rail safety more than other foulants.

ERIC

Eric Von Salzen  
McLeod, Watkinson & Miller  
(910) 235-5274 (home/office)  
(910) 986-1513 (cell)

—Original Message—

**From:** Christopher.Perry <[Christopher.Perry@dot.gov](mailto:Christopher.Perry@dot.gov)>  
**To:** [vonsalz@aol.com](mailto:vonsalz@aol.com)  
**Sent:** Wed, Nov 14, 2012 3:04 pm  
**Subject:** RE: FD 35557

Dear Eric:

I have received your letter on this matter. Per your request, I have already provided you with an updated web link via e-mail. This is not an appropriate opportunity to address the substance of the issues that you have raised in your letter, and we do not feel that it is necessary to do so at this time. However, I understand that your client anticipates filing reply comments in this proceeding, and the Department may offer further views to the STB at an appropriate time as the proceeding continues.

Best regards,  
Chris Perry

Christopher S. Perry  
Trial Attorney  
Office of the Assistant General Counsel for Litigation  
United States Department of Transportation  
1200 New Jersey Avenue, S.E.  
Room W94-316  
Washington, D.C. 20590  
Telephone: (202) 366-9282  
Fax: (202) 493-0154  
E-mail: [christopher.perry@dot.gov](mailto:christopher.perry@dot.gov)

**From:** Eric Von Salzen [<mailto:vonsalz@aol.com>]  
**Sent:** Monday, November 12, 2012 11:59 AM  
**To:** Perry, Christopher (OST)  
**Subject:** Re: FD 35557

Dear Chris,

Please respond to the attached letter as soon as possible.

ERIC

Eric Von Salzen  
McLeod, Watkinson & Miller  
(910) 235-5274 (home/office)  
(910) 986-1513 (cell)

—Original Message—

From: Eric Von Salzen <[vonsalz@aol.com](mailto:vonsalz@aol.com)>  
To: Christopher.Perry <[Christopher.Perry@dot.gov](mailto:Christopher.Perry@dot.gov)>  
Sent: Thu, Nov 8, 2012 3:17 pm  
Subject: Re: FD 35557

Dear Chris,

We've looked at the link you provided to me. There are some 38 studies listed, dated between 1987 and 2003, but only four for which copies of the study are available at the link. So far as we can tell, none of these studies relate to the effect of coal dust on ballast.

The passage in the DOT Rebuttal that is supposed to be supported by the cite in fn. 2 reads as follows:

*The Department does not agree that coal dust is no more harmful than any other matter commonly found in ballast on the Powder River Basin ("PRB") lines in question. FRA's experience confirms the record evidence that coal dust interferes with the stability of ballast to a much greater extent than other such materials. DOT's Volpe National Transportation Systems Center has conducted several studies on track buckling to evaluate track strength and stability limits, including the effects of ballast condition. These materials and the relevant literature on the subject confirm the particularly destructive qualities of coal dust on ballast.*

The first two studies (from 2003) deal with track buckling due to heat and were based on studies performed on the North East Corridor. Coal dust is not a major issue in that corridor and is not mentioned in these studies. The 2001 study deals with "High-Speed Rail", again not coal dust. The 1999 study deals with track buckling, again with no mention of coal dust.

Perhaps your sources provided the wrong link? Could you please check back and let me know what you find?

Thanks,

ERIC

—Original Message—

From: Christopher.Perry <[Christopher.Perry@dot.gov](mailto:Christopher.Perry@dot.gov)>  
To: [vonsalz@aol.com](mailto:vonsalz@aol.com)  
Sent: Thu, Nov 8, 2012 9:32 am  
Subject: RE: FD 35557

Dear Eric,

I apologize for the delay in getting back to you. After further consultations within the Department, I believe that you will find the materials at the following link:

<http://www.volpe.dot.gov/coi/pis/pubs-buckle.html>

If you have any difficulty in accessing the material or have further questions, please let me know.

Thanks,  
Chris

Christopher S. Perry  
Trial Attorney  
Office of the Assistant General Counsel for Litigation  
United States Department of Transportation  
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From: Eric Von Salzen [<mailto:vonsalz@aol.com>]  
Sent: Thursday, November 01, 2012 12:20 PM  
To: Perry, Christopher (OST)  
Subject: FD 35557

Dear Christopher,

DOT's Opening Comments refer to and incorporate its evidence in FD 35305 regarding the seriousness of the coal dust problem. In following up on this, we've found that some of DOT's principal pieces of evidence in the prior case have become unavailable at the web address provided. See DOT Rebuttal Comments in FD 35305 (filed June 4, 2010), at p. 2, citing [www.volpe.dot.gov/sdd/pubs-buckle.html](http://www.volpe.dot.gov/sdd/pubs-buckle.html).

Could you please provide me with a current web address at which we can access those studies (or, if more convenient for you, with copies of the studies themselves)?

Thanks for your help.

ERIC

Eric Von Salzen  
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GOVERNMENT RELATIONS

ERIC VON SALZEN  
OF COUNSEL

Writer's e-mail address: [cvonsalzen@mwmlaw.com](mailto:cvonsalzen@mwmlaw.com)

November 12, 2012

By email to [Christopher.Perry@dot.gov](mailto:Christopher.Perry@dot.gov)

Christopher S. Perry, Esq.  
U.S. Department Of Transportation  
1200 New Jersey Avenue, S.E.  
Washington, DC 20590

RE: Reasonableness Of BNSF Railway Company Coal Dust Mitigation  
Tariff Provisions, FD 35557

Dear Mr. Perry:

I tried to reach you by phone this morning, but there was no answer. I assume USDOT is closed for Veterans Day. Notwithstanding the holiday, the Surface Transportation Board's deadline for filing Replies is Thursday, November 15, 2012. Since November 1, 2012, I have been asking you for the studies or reports supporting USDOT's assertions about coal dust, which we need for our Reply, so far without success.

The Opening Comments Of The United States Department Of Transportation in this docket state:

First, the Department remains concerned about the problem of coal dust and its effects upon rail safety. . . . As the Department explained in its submissions in docket number 35305, coal dust can threaten rail safety by damaging rail ballast. . . .

\* \* \*

Thus, the Department has already expressed the view that coal dust threatens rail safety more than other foulants, and that its emission should be contained. . . .

**MCLEOD, WATKINSON & MILLER**

Christopher S. Perry, Esq.  
November 12, 2012  
Page 2

USDOT Opening, at 4-5. USDOT did not submit any evidence in its Opening in this docket to support these statements, but relied entirely on material that it had submitted in the preceding docket, FD 35305, Rebuttal Comments Of The United States Department Of Transportation, at 2-3.

AECC therefore reviewed those Rebuttal Comments and confirmed that they did indeed express the opinion that coal dust was a worse ballast foulant than other materials:

The Department does not agree [with the position expressed by AECC and others] that coal dust is no more harmful than any other matter commonly found in ballast in the Powder River Basin ("PRB") lines in question. FRA's experience confirms the record evidence that coal dust interferes with the stability of ballast to a much greater extent than other such materials. DOT's Volpe National Transportation Systems Center has conducted several studies on track buckling to evaluate track strength and stability limits, including the effects of ballast condition. These materials and the relevant literature on the subject confirm the particularly destructive qualities of coal dust on ballast.

USDOT Rebuttal in FD 35305, at 2. In support of this opinion, the Rebuttal cited "pertinent pages of that [relevant] literature [which] are attached hereto" and "Volpe studies [which] are available at: <http://www.volpe.dot.gov/sdd/pubs-buckle.html>." *Id.*, at n. 1.

When AECC sought to confirm that the Volpe studies referred to did indeed support USDOT's opinion, we found that the web address referred to in the Rebuttal was invalid. Therefore, on November 1, 2012, I contacted you by email and asked you to provide me with a current web address at which we can access those studies.

After you and I discussed this matter on the telephone on November 6, you then emailed me on November 8 as follows:

After further consultations within the Department, I believe that you will find the materials at the following link:

<http://www.volpe.dot.gov/coi/pis/pubs-buckle.html>

If you have any difficulty in accessing the material or have further questions, please let me know.

However, when AECC reviewed the materials at that web address, we did not find any studies that support USDOT's opinion that coal dust is a worse ballast foulant than any

MCLEOD, WATKINSON & MILLER

Christopher S. Perry, Esq.

November 12, 2012

Page 3

other material. In fact, none of the four studies accessible through that web address deals with the effect of coal dust on ballast. The two most recent studies (from 2003) dealt with track buckling due to heat and were based on studies performed on the North East Corridor. Coal dust is not a major issue in that corridor and is not mentioned in these studies. A 2001 study dealt with "High-Speed Rail", again not coal dust. The 1999 study dealt with track buckling, again with no mention of coal dust.

Therefore, I responded to your email on November 8, and advised you that no documents accessible through the web address you provided dealt with the matters USDOT was asserting. I suggested that perhaps you had been given an incorrect web address, and I asked you to look further into this matter. Since then, I have not heard from you.

Please respond to this letter as promptly as possible. If received by noon on Wednesday, November 14, 2012, your response will be reflected in Arkansas Electric Cooperative Corporation's Reply. Otherwise, AECC will be forced to conclude that USDOT has no Volpe studies that "confirm the particularly destructive qualities of coal dust on ballast", and will so advise the Surface Transportation Board in our Reply.

Very truly yours,



Eric Von Salzen  
Counsel for Arkansas Electric Cooperative  
Corporation

PUBLIC

**REPLY VERIFIED STATEMENT**

**OF**

**MICHAEL A. NELSON**

**REPLY VERIFIED STATEMENT  
OF  
MICHAEL A. NELSON**

**1. Qualifications**

My name is Michael A. Nelson. I am an independent transportation systems analyst with 32 years of experience in railroad competition and coal transportation. My office is in Dalton, Massachusetts. My qualifications were described in the verified statement I submitted in support of AECC's opening comments in this proceeding.

**2. Subjects Covered in This Statement**

I have been asked by AECC to analyze and respond to information submitted and assertions made by other parties in their opening filings regarding many issues related to the release and control of fugitive coal from PRB coal trains. Much of this statement addresses the failure of BNSF Railway ("BNSF") to address adequately or accurately several core issues that it knew or should have known were important to evaluating the safe harbor, such as the costs, benefits and environmental impacts associated with use of the approved toppers, the role of railroad infrastructure and operating practices in the deposition of fugitive coal, and even the (in)ability of the approved toppers to perform their intended function over the length of typical PRB coal movements. Instead, BNSF has offered what amounts to a series of sound bites that do not withstand scrutiny in light of readily available evidence, including evidence BNSF itself has produced.

Specific issues addressed in this statement include the following:

- BNSF inaccurately claims that railcars are the only place in the coal logistics chain where shippers do not take steps to control coal dust, and improperly seeks to

- minimize or disregard gains in fugitive coal control already achieved through means other than toppers;
- BNSF's claim that toppers remain intact until they reach their final destination is unsupported and completely refuted by BNSF's own evidence and information from multiple other sources;
  - BNSF's claims that toppers are not harmful and are environmentally safe are contradicted by information in BNSF's possession;
  - BNSF's position on cost-sharing is unreasonable on both equity and efficiency grounds, and demonstrates the market power wielded by BNSF on the coal dust issue;
  - BNSF's claims that use of toppers would conserve significant quantities of coal are inconsistent with the railroads' own coal loss studies, and refuted by observed product losses associated with topper failures;
  - BNSF's claim that low topper prices are widely available to shippers is misleading, and based on outlier topper pricing offered by {{ [REDACTED] }};
  - BNSF and DOT claims based on alleged FRA studies of the effect of coal dust on track stability cannot be tested because no such studies have been produced or identified, and the claims cannot be reconciled with new work performed and conclusions reached by former BNSF witness Tutumluer; and,
  - unique features of PRB coal transportation undercut BNSF's attempts to legitimize its topper requirement based on practices at other locations.

### 3. Safe Harbor in Perspective: Necessary but not Sufficient

Before addressing the substantive issues listed above, it is important to put the safe harbor issue into proper perspective. BNSF<sup>1</sup> and the U.S. Department of Transportation ("DOT")<sup>2</sup> erroneously claim that the fact that a safe harbor has been created establishes the reasonableness of the requirements to control fugitive coal in transit that BNSF seeks to impose on shippers. This argument supposedly is based on the Board's observation in Dust I that a "cost effective safe harbor could go a long way to address our concern that the current tariff does not provide shippers with a certain method of compliance that does not depend on the monitoring system."<sup>3</sup> In effect, BNSF and DOT are arguing that the creation of a safe harbor validates

<sup>1</sup> "BNSF Railway Company's Opening Evidence and Argument" (October 1, 2012) ("BNSF Opening") at page 14.

<sup>2</sup> "Opening Comments of the United States Department of Transportation" (October 1, 2012) ("DOT Opening") at pages 6, 8.

<sup>3</sup> STB Docket No. FD 35305 ("Dust I"), Decision served March 3, 2011, at page 12.

BNSF's requirements irrespective of the reasonableness – or lack thereof – of the safe harbor itself.

This argument is completely circular and invalid. The Board initiated this proceeding explicitly to address the reasonableness of the safe harbor, so the Board plainly and appropriately recognizes that the safe harbor faces its own reasonableness requirement. In this context, the existence of a safe harbor can be viewed as a necessary but not a sufficient condition to establish the reasonableness of specific fugitive coal control requirements. The circular argument advanced by BNSF and DOT manifests either a misunderstanding of the purpose of this proceeding or wishful thinking that reasonableness of the safe harbor need not be given close scrutiny. Neither circumstance should be allowed to detract from the substantive investigation of the reasonableness of the safe harbor provision.

As discussed in AECC's opening evidence and argument, and as further discussed below, BNSF's safe harbor is unreasonable in several crucial respects.

#### **4. Discussion**

##### **A) BNSF Ignores Fugitive Coal Control Gains Already Achieved**

BNSF witnesses Bobb<sup>4</sup> and Rahm<sup>5</sup> claim that railcars are the only place in the coal logistics chain where shippers do not take steps to control coal dust. This claim is both false and unreasonable. It is false because it fails to acknowledge many actions that shippers and mines have undertaken to reduce fugitive coal in transit. As described in my opening VS, such actions include profiling, coal sizing changes, fines handling during mine processing, and improved railcar inspection and maintenance practices.

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<sup>4</sup> BNSF Opening, VS Bobb at page 5.

<sup>5</sup> BNSF Opening, VS Rahm at pages 1, 19.

BNSF attempts to portray as ineffectual the efforts undertaken to date to control fugitive coal. BNSF claims that “load profile grooming has only a modest impact on coal dust losses in transit”,<sup>6</sup> and that compliance with its rule “will begin to bring coal dust under control”,<sup>7</sup> as if the deposition of fugitive coal is essentially unchanged since before the time shippers and mines began to implement mitigating measures. Witness VanHook offers a specific claim that load profiling produced a reduction in dust deposition that was “relatively modest, about {█}.”<sup>8</sup> This claim is based on a computation in which the rate of dust accumulation at {█} is compared “before” and “after” the introduction of profiling. As shown on page 3 of Exhibit 2 to Mr. VanHook’s statement, the {█} accumulation of dust decreased from {█} to {█}, a reduction of {█} percent.

In performing this computation, however, Mr. VanHook overlooks a crucial fact that he, of all people,<sup>9</sup> should know. During much of the {█},<sup>10</sup> PRB throughput was down and numerous slow orders were in effect as BNSF undertook an aggressive program to catch up on deferred maintenance and needed infrastructure improvements in the aftermath of the May 2005 Joint Line derailments. Mr. VanHook’s {█} percent figure is low because the {█} value he uses would have been much higher relative to the {█} value if a normal number of trains operating at normal speeds had passed the monitoring point during that time.

<sup>6</sup> BNSF Opening at page 15.

<sup>7</sup> BNSF Opening at page 31.

<sup>8</sup> BNSF Opening, VS VanHook at page 4.

<sup>9</sup> Mr. VanHook was BNSF’s Chief Engineer – Systems Maintenance and Planning, and during the {█} was responsible for BNSF’s program for curtailing PRB coal dust losses in transit. BNSF Opening, VS VanHook at page 1.

<sup>10</sup> BNSF Opening, VS VanHook, Exhibit 2 at page 3.

Fortunately, Mr. VanHook himself provides estimates that are not burdened by this error. His testimony includes the estimate of a {{[REDACTED]}}% reduction from grooming alone<sup>11</sup> that corresponds closely to estimates I referenced in my opening VS.<sup>12</sup> Moreover, {{[REDACTED]}} the consensus among knowledgeable personnel within BNSF's own management that the actual reduction due to profiling was in the range of {{[REDACTED]}} percent.<sup>13</sup>

BNSF apparently wants the Board to believe that no meaningful progress is going to occur on fugitive coal unless and until the Board gives BNSF the authority it long ago decided it wants to compel use of toppers. In fact, the evidence shows that much low-hanging fruit has already been picked, with grooming along with such actions as enhanced profile audits, improved railcar inspection and maintenance practices, and increased coal sizing and other mine processing improvements combining to produce {{[REDACTED]}} dusting reductions without the use of toppers.<sup>14</sup>

Furthermore, BNSF's claim is unreasonable because it fails to acknowledge the Board's affirmation in Dust I of the fundamental responsibility of railroads for events that occur in transit. In this light, it can be seen that the mines have been fully engaged in dust control measures at the facilities they operate, and that coal shippers have been fully engaged in dust control measures at the facilities they operate, but that BNSF has not taken constructive steps readily available to it. As described in greater detail in my opening VS,<sup>15</sup> factors that cause fugitive releases of PRB coal in transit include train speed, train handling and infrastructure and maintenance issues that produce impacts, forces and vibrations on the coal being transported.

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<sup>11</sup> BNSF Opening, VS VanHook, Exhibit 1 at page 17.

<sup>12</sup> AECC Opening, VS Nelson at pages 35-37.

<sup>13</sup> See BNSF COALDUSTII 00574002.

<sup>14</sup> AECC Opening, VS Nelson at pages 35-36 provides specific estimates associated with different actions and combinations of actions.

<sup>15</sup> AECC Opening, VS Nelson at pages 13-21.

Shippers and mines exert control over none of these factors; only the railroads do so. Until BNSF steps up with a good faith, comprehensive effort to address the causes of fugitive coal releases that it controls, its complaints regarding the efforts of shippers and mines will be as ironic as they are vacuous.

### **B) Topper Integrity**

BNSF witness Rahm asserts, based solely on personal observation, with no citation to any evidence or even to the date(s) and location(s) of his observation(s), that “when the trains reach the plant the topper agent is still intact”.<sup>16</sup> Mr. Rahm apparently is either unfamiliar with BNSF’s evidence from the Super Trials regarding failures of the topper coatings only a fraction of the way through a typical trip, or hoping that the Board is unfamiliar with that evidence.

This issue was addressed in detail in my opening VS, which included, among other things, a sample of Super Trial photos from a month of testing for one of the safe harbor toppers.<sup>17</sup> To address Mr. Rahm’s surprising assertion, I have expanded my review of the Super Trial photos to encompass all three of the months {{ [REDACTED] }} when the approved safe harbor toppers were tested. As shown in further detail in Appendix A, this review covered a total of {{ [REDACTED] }} trains for which {{ [REDACTED] }} photos were provided in discovery materials produced by BNSF. Although some of the photographs did not permit an evaluation of the condition of the topper (some photos showed {{ [REDACTED] }}), an unknown number of photos may have been {{ [REDACTED] }}), many photos of loads were {{ [REDACTED] }}), and few [if any] photos showed the {{ [REDACTED] }}), my review nevertheless found that {{ [REDACTED] }} of the {{ [REDACTED] }} trains showed unambiguous evidence of {{ [REDACTED] }}).

<sup>16</sup> BNSF Opening, VS Rahm at page 20.

<sup>17</sup> AECC Opening, VS Nelson at pages 24-25.

To be clear, my conclusion is not that all of the cars on those {{█}} trains experienced {{█}}, or that none of the cars on the other {{█}} trains experienced {{█}}. My conclusion is that BNSF knew, or should have known, that it was common for the safe harbor toppers to have {{█}} by the time the train reached {{█}}, which represents a comparatively small fraction of the length of most PRB coal movements. More generally, BNSF knew, or should have known, that {{█}} was a potential deal-breaking issue that required careful attention. Early studies of toppers revealed {{█}} which is strongly suggestive of {{█}}. BNSF elected to address this issue by studying only the {{█}}, and making no study of the {{█}} of studied movements. Even with this narrow focus, the evidence shows that the thin, fragile low-water topper films {{█}}.

Corroboration of the seriousness of enroute topper failure has been provided by coal users who have movements currently receiving treatment with safe harbor toppers. Such users have noticed that the toppers they pay for frequently don't make it all the way to the plant, as illustrated by the following photographs:

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<sup>18</sup> See BNSF COALDUSTII 00580441.









Ultimately, the evidence shows that BNSF's claim that the toppers normally are intact at the destination point is unsupported, incorrect, and entitled to no weight. The safe harbor provisions are unreasonable because the evidence indicates that the safe harbor toppers are susceptible to significant in-service failures that BNSF has not disclosed or studied.

### **C) BNSF'S Misleading Environmental Claims**

BNSF advances several claims that toppers are not harmful and are environmentally safe. For example, BNSF's Argument asserts that "BNSF tested the toppers...to make sure that they were not dangerous or injurious to railcars".<sup>19</sup> BNSF witness Bobb states that toppers are "not

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<sup>19</sup> BNSF Opening at page 27.

dangerous or damaging when used properly”,<sup>20</sup> and witnesses Carré/Murphy say toppers are “not harmful to handle”.<sup>21</sup> Witness VanHook gives himself some wiggle room by claiming that “most” toppers are non-toxic and environmentally safe,<sup>22</sup> while BNSF cites witness Rahm for the proposition that EPA “has specifically endorsed the use of chemicals to suppress coal dust...”.<sup>23</sup>

The characterization of toppers as environmentally benign is extraordinarily misleading. As described in detail in my opening VS, BNSF possesses extensive information regarding the environmental harms and risks associated with the use of chemical toppers,<sup>24</sup> and the treatment of these issues in BNSF’s opening is simply not candid.

The proposition that EPA supports use of chemical dust suppressants is particularly far-fetched. As described in my opening VS,<sup>25</sup> EPA requires a plan to control dust releases from open coal storage piles, and chemical dust suppressants have been used for that purpose. However, such use of chemical agents certainly is not advocated, and in fact can only be used when specific limiting provisions are met, because the chemical agents may enter ash settling ponds or water run-off from coal piles. None of the other dust control options enumerated by EPA, including water spray/fogging, partial enclosure, wind barriers, compaction or vegetative cover, must satisfy such provisions. Put another way, EPA’s view is that use of chemical agents introduces unique environmental problems. EPA hasn’t banned chemical toppers, but unlike BNSF it plainly has recognized the unique environmental problems that their use can introduce.

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<sup>20</sup> BNSF Opening, VS Bobb at page 13.

<sup>21</sup> BNSF Opening, VS Carré/Murphy at page 6.

<sup>22</sup> BNSF Opening, VS VanHook at page 4.

<sup>23</sup> BNSF Opening at page 16.

<sup>24</sup> AECC Opening, VS Nelson at pages 32-35.

<sup>25</sup> AECC Opening, VS Nelson at pages 32-33.



The efficiency problem that arises from the exercise of this market power is that BNSF's demonstrated ability and intent to insulate itself from the costs of topper application has left BNSF unconcerned with those costs, and able to pursue implementation of its own preferred remedy, irrespective of the relationship between the benefits that approach produces (all or virtually all of which accrue to BNSF) and the costs it imposes on shippers (and to some extent, mines). The Board can infer from BNSF's failure to include even a rudimentary cost-benefit analysis in its opening filing that BNSF cannot make a credible argument that the safe harbor toppers maximize the excess of benefits over costs, or even produce benefits in excess of their costs. They are economically inefficient, and their use would constitute an unsound economic condition contrary to the letter and spirit of Section 10101(5).

The equity issue that stems from the lack of cost sharing results directly from the Constrained Market Pricing principles that form the core of the Board's rate regulation practices, as implemented in past rate cases. Specifically, in many rate cases involving PRB coal, the Board has found or the parties have stipulated that the results of a stand-alone cost analysis did or would produce a rate lower than the 180% R/VC jurisdictional threshold. Put another way, in multiple cases, it has not been possible for challenged rates to be reduced to the level that would just cover the costs of replacing and operating the needed rail assets of the PRB and associated distribution lines. When this occurs, the traffic using the stand-alone railroad assets, including the issue traffic moving at 180% R/VC, is cross-subsidizing other traffic, in violation of CMP.

Because of the lack of cost sharing associated with BNSF's safe harbor, shipper application of toppers would have the effect of increasing BNSF's contribution from PRB traffic that already more than pays its own way. BNSF may enjoy exercising its market power to produce excess contribution, but the Board has ample basis in CMP to find BNSF's refusal to

pay for the application of the safe harbor toppers to be unreasonable. If the Board allows the railroads to off-load maintenance costs onto shippers without requiring an equal or greater reduction in rates, the savings achieved by the railroad would in their entirety constitute an increase in an already-impermissible cross-subsidy from PRB coal shippers.

**E) Conservation of Coal**

BNSF advances the intuitively-plausible claim that the use of toppers will benefit PRB coal shippers by preventing enroute coal loss.<sup>30</sup> BNSF witness Bobb states that shippers' compliance costs will be offset "to a significant extent by preventing the loss of coal in transit",<sup>31</sup> an assertion echoed by BNSF witness VanHook.<sup>32</sup> However, neither of them appears to have made any study or analysis to support his claim.

What witnesses Bobb and VanHook fail to consider is that toppers add weight to the rail car, so that it is necessary to reduce the amount of coal loaded into the car by a small amount to allow for the weight of the topper itself. I examined this issue in detail in Dust I<sup>33</sup> and found, using the railroads' own coal loss studies, that the average quantity of coal lost enroute was very close to the weight of topper solution applied to prevent coal loss. At best (that is, even if topper use prevented the in-transit loss of coal), the railcar would arrive at the destination with approximately the same amount of coal whether it was transported without a topper (and lost a small amount of coal enroute), or was loaded light (to accommodate the weight of the topper)

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<sup>30</sup> BNSF Opening at page 20.

<sup>31</sup> BNSF Opening, VS Bobb at page 4.

<sup>32</sup> BNSF Opening, VS VanHook at page 2.

<sup>33</sup> Dust I, AECC Rebuttal VS Nelson at pages 42-44.

and transported with a topper. The proposition that shippers will see a tangible coal retention benefit from the use of toppers was basically nullified by the railroads' own data.<sup>34</sup>

In reasserting this claim, BNSF has avoided mentioning the railroad coal loss studies. Indeed, BNSF witness VanHook relies explicitly on promotional material circulated by a topper vendor, which claims coal losses {{ [REDACTED] }} the losses found in the railroads' formal studies.<sup>35</sup> BNSF has offered no rationale whatsoever for disregarding the coal loss studies in favor of vendor advertising claims.

It also should be noted that the topper integrity problems discussed above can easily cause a shipper to experience both light loading to accommodate topper application and substantial enroute loss of product. For example, if a topper treatment weighs 150 lb., but after application an 18" strip of failed topper (with attached coal to a depth of 1") along one side of a 50' railcar blows off in transit, the car would arrive with approximately 450 lb. less coal than if it had been fully loaded without the topper. That would be double the 225 lb. that was measured in the railroad coal loss studies for untreated cars. In summary, there is no "delivered coal" benefit for shippers associated with the use of toppers; if anything, the data indicate that periodic losses of clumps of material due to topper failures may cause shippers who use toppers to receive less coal than shippers who do not use toppers.

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<sup>34</sup> As a point of reference, the weight measurement study cited by UP in Dust I concluded that coal loss from the tops of untreated cars averages 225 pounds per car. See Dust I, UP Reply VS Beck at page 2.

<sup>35</sup> BNSF Opening, VS VanHook at page 17 references Exhibit 3 at page 82, which asserts that coal losses exceed {{ [REDACTED] }} for a typical PRB railcar loaded with 120 tons of coal.

## F) Topper Prices

BNSF asserts that “approved topper agents cost from about {{ [REDACTED] }} per ton.”<sup>36</sup>

Information provided by BNSF indicates that a rate of approximately {{ [REDACTED] }} per ton has been available from a single mine that {{ [REDACTED] }}  
 {{ [REDACTED] }}  
 {{ [REDACTED] }} marketing its coal against competing sources.

In a public interest assessment of costs and benefits, the issue is resource costs, not whether a mine elects to charge a low topper fee on the belief that it can benefit by increasing the price and/or volume sold of its coal. “Loss-leader” pricing does not reflect resource costs, and should not be used in any economic evaluation of toppers.

Indeed, BNSF’s evidence shows that even the largest of PRB coal users is paying approximately {{ [REDACTED] }} per ton at other mines,<sup>38</sup> and smaller users are paying more. Taking into account the brief period during which topper application prices in this range have been observed, the reduction in competitive pressure in the supply of toppers at each mine after a vendor has been selected, and the upward pressure on water costs that would be likely in the event all PRB volume were actually using toppers, the evidence appears to support use of {{ [REDACTED] }} per ton, which translates to {{ [REDACTED] }} per year. There is no credible way for BNSF to assert an impact of current coal dusting levels on its costs anywhere near that magnitude, which explains why BNSF has not come forward with any type of cost-benefit analysis. This magnitude of cost also creates a virtual certainty that other prospective methods of

<sup>36</sup> BNSF Opening at page 19.

<sup>37</sup> BNSF Opening, Counsel’s Exhibit 4 at page 13.

<sup>38</sup> BNSF Opening, Counsel’s Exhibit 4 at page 10.

fugitive dust control, such as those enumerated in my opening VS,<sup>39</sup> would be far superior to toppers on cost-effectiveness grounds.

**G) BNSF and DOT Rely On Non-Existent Studies Of Problems Caused By Coal Dust**

In its opening in this proceeding, DOT reiterated its position from Dust I that coal dust is an especially bad ballast foulant, referring to the fact that "the Department has already expressed the view that coal dust threatens railroad safety more than other foulants, and that its emission should be contained."<sup>40</sup> As support for this, DOT in Dust I claimed that:

"DOT's Volpe National Transportation Systems Center has conducted several studies on track buckling to evaluate track strength and stability limits, including the effects of ballast condition. These materials and the relevant literature on the subject confirm the particularly destructive qualities of coal dust on ballast."

BNSF's Opening in this proceeding expresses a similar view, citing comments made by the Board in its Dust I decision.<sup>41</sup> Because the Board explicitly gave "significant weight to USDOT's conclusion, based on the Federal Railroad Administration (FRA) research",<sup>42</sup> both the DOT and BNSF comments regarding the uniquely harmful qualities of coal dust rest on the same studies.

In Dust I, the harmful qualities of coal dust were investigated by BNSF witness Tutumluer, whose work was cited liberally by the railroads in making their Dust I arguments on this subject, and also was relied upon by the Board in its Dust I decision.<sup>43</sup> As indicated in my opening VS, former BNSF witness Tutumluer, on the basis of further investigation, has basically

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<sup>39</sup> AECC Opening, VS Nelson at pages 54-57.

<sup>40</sup> DOT Opening at page 5, citing Dust I, DOT Rebuttal at pages 2-3.

<sup>41</sup> BNSF Opening at pages 11-12.

<sup>42</sup> Dust I, Decision served March 3, 2011 at page 7.

<sup>43</sup> Dust I, Decision served March 3, 2011 at page 7.

recanted critical portions of his Dust I testimony, and now holds the view that clay – not coal dust – is the source of unique track stability problems, particularly when wet.<sup>44</sup>

While this finding puts former witness Tutumluer's views more in line with mainstream engineering texts – none of which identify coal dust as being more harmful than other ballast foulants – it appears to put him in conflict with the conclusions drawn from the Volpe studies. When I attempted to investigate this conflict to assess the need for a reply to the opening arguments on this topic made by DOT and BNSF, I found that the internet address for the Volpe studies provided by DOT in Dust I was no longer valid. I attempted to search the Volpe Center website, but was unable to find any relevant documents using “coal” or “dust” as search terms.

I informed AECC's counsel of these problems, and from counsel received a substitute internet address for the Volpe studies (<http://www.volpe.dot.gov/coi/pis/pubs-buckle.html>) that had been provided by counsel for DOT. That address contains a list of documents pertaining to track buckling,<sup>45</sup> and links to 4 specific studies, but none of the studies appear to support the proposition for which the Volpe studies have been cited. In particular, they do not address the relative severity of coal dust as a ballast foulant.

Absent such a study, there is no substantiation for the opening arguments of either DOT or BNSF regarding track stability issues. And if there really are no Volpe studies that back up DOT's claims from Dust I, the Board's conclusion in Dust I that coal dust is a particularly harmful ballast foulant would also be left unsupported.

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<sup>44</sup> AECC Opening, VS Nelson at pages 30-31.

<sup>45</sup> “Track buckling” may sound like it is relevant to the track stability concerns raised in this proceeding and in Dust I, but it relates to deformations of track resulting from lateral forces associated with “high thermally-induced compressive loads” (i.e., expansion of long segments of CWR on hot days). It has no direct connection to the May 2005 PRB Joint Line derailments, or any other actual or alleged ballast fouling issues in this proceeding or in Dust I.

## H) Uses of Toppers at Other Locations

BNSF tries to create the misimpression that the application of toppers to loaded coal cars is commonplace, and that its efforts to compel shippers to use toppers to control fugitive coal in transit are supported by practices at other locations, including Virginia, Canada, Australia, China and Colombia. However, the available evidence regarding practices at those locations highlights the unusual and basically unprecedented nature of the requirement BNSF seeks to impose.

With all of the hundreds of millions of tons of coal moved by rail in the United States, the only domestic example of a program of topper use that BNSF can cite involves export movements through a single state (Virginia). Aside from BNSF's proposal, there is no evidence that even a single ounce of domestically produced coal faces any type of requirement to use toppers while in transit to domestic coal users.<sup>46</sup>

Even in the Virginia situation where toppers are used, the circumstances are so different from those in the PRB that they provide no support for the proposed safe harbor:

- The motivation for the topper application stems from the nuisance impacts of airborne dust from loaded coal trains moving through densely-populated areas in Virginia. BNSF has made no claim and has supplied no evidence that such nuisance impacts form any meaningful part of the ostensible need for toppers in the Powder River Basin;
- By the same token, BNSF has made no claim and supplied no evidence that the use of toppers on specific coal movements in Virginia has had any measurable impact on the

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<sup>46</sup> BNSF witnesses Carré/Murphy reference CSX's "experience with dust suppressants applied to loaded coal to address concerns in Kentucky about coal dust losses in transit". BNSF Opening, VS Carré/Murphy at pages 12-13. However, the plain language of the document they cite makes clear that the "concerns" related to an air quality report regarding a single train movement in 2010; that CSX "would prefer" – but has no requirement - that dust suppressants be applied to loaded coal cars; that its concerns are focused on avoiding air quality incidents for specific types of coal (metallurgical, longwall) and prevailing conditions that it associates with dust releases, and that its intent is to pass on to the mine any fines, penalties or other requirements that may arise in the future. See <http://www.csx.com/index.cfm/customers/commodities/coal/news/rail-car-dust-suppressant-reminder/>. This provides absolutely no support for any aspect of BNSF's blunderbuss mandatory spraying program. If anything, it provides an example of cooperation and voluntary action to address coal dust issues in the circumstances where they arise.

- stability or cost of maintaining the lines used by those movements, or on the quantity of coal delivered to coal customers;
- The use of toppers in Virginia has been undertaken voluntarily by the parties who supply and move the coal (i.e., mines and rail carrier) to address stated local concerns, and not as the result of any involuntary requirement – safe harbor or otherwise - imposed on the end users of the coal;
  - No party is known to have contested the use of toppers in Virginia before this Board, so there has been no Board determination of the reasonableness of the Virginia topper application upon which BNSF can rely;
  - The Virginia movements are understood to make use of topper products that require large quantities of water. Due to water availability issues and constraints, PRB topper options are limited to “low water” toppers that generally produce a thin, fragile film that is less effective than the coating produced by high-water toppers;
  - The lengths of the rail movements in Virginia are a small fraction of the 1000+ mile average length of PRB coal movements, so even if the low-water safe harbor toppers BNSF has approved could perform to the level of high-water toppers used in Virginia, there is no basis upon which one could expect - given the known effects of wind, weather, enroute vibrations, etc. on topper integrity - that such performance could be sustained over such long distances;
  - BNSF’s own witness has described how the topper applicators in the east are {{ [REDACTED] [REDACTED] [REDACTED] }} but in practice that is the type of performance that is likely to be experienced.

Far from validating the BNSF safe harbor reliance on toppers, a fair reading of the Virginia experience highlights many of the infirmities of BNSF’s plan. Even if it is assumed that the actual performance of toppers in Virginia is satisfactory, it would be foolish to assume that the actual performance of thin and fragile low-water toppers applied with {{ [REDACTED] [REDACTED] }} on long-distance movements from the PRB will be any better than it was in the Super Trial tests that BNSF {{ [REDACTED] }}.

Experiences with toppers at the other locations referenced by BNSF are equally unpersuasive. In Canada, BNSF is well aware that {{ [REDACTED] [REDACTED] [REDACTED] }}.

<sup>47</sup> See BNSF COALDUSTII 00157227-28.



The references to other locations are primarily anecdotal, and provide no reason to believe they would support BNSF's plan any more than do the practices in Virginia, Canada and Australia.

Appendix A **HIGHLY CONFIDENTIAL APPENDIX – THERE IS NO PUBLIC VERSION**  
TOPPER FAILURE AND OVERSPRAY PROBLEMS FOR APPROVED SAFE HARBOR TOPPERS

## VERIFICATION

I, Michael A. Nelson, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this verified statement.

  
\_\_\_\_\_  
Michael A. Nelson

Executed on November 13, 2012

**CERTIFICATE OF SERVICE**

I hereby certify that on this 15th day of November, 2012, I caused a copy of the CONFIDENTIAL or HIGHLY CONFIDENTIAL version of this Reply Evidence and Argument to be served by overnight courier or hand delivery on all parties of record on the service list in this action who are entitled to receive CONFIDENTIAL or HIGHLY CONFIDENTIAL material respectively in accordance with the Protective Order herein, and a copy of the PUBLIC version of the same to all parties of record on the service list in this action.



Eric Von Salzen