BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. BNSF RAILWAY COMPANY, Respondent.	DOCKET TR-150284 RESPONDENT BNSF RAILWAY COMPANY'S RESPONSE TO BENCH REQUEST NO. 4

RESPONDENT, BNSF RAILWAY COMPANY ("Respondent"), by its attorneys of record herein, responds as follows to Bench Request No. 4 for information regarding the Federal Railroad Administration ("FRA") directive on McKenzie valves:

On March 18, 2015, the FRA published a Railworthiness Directive applicable to railroad tank cars equipped with certain valves marketed and sold by McKenzie Valve & Machining LLC (formerly McKenzie Valve & Machining Company). A copy of the FRA's website notice about the Directive, which can be found at https://www.fra.dot.gov/Page/P0790, is attached hereto as Exhibit 1. A copy of the FRA's March 18, 2015 Railworthiness Directive is attached as Exhibit 2. The Directive mandated the removal and replacement of certain identified McKenzie valves by May 12, 2015 (3" valves), and others by June 11, 2015 (1" and 2" valves). On May 12, 2015, the FRA issued a letter to the Railway Supply Institute authorizing a modified compliance schedule, which extended the deadline for replacement of 3" valves to December 31, 2015, and extended the deadline for replacement of 1" and 2" valves to correspond to certain

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specified events, such as a repair or retrofit. A copy of the FRA's May 12, 2015 letter is attached as Exhibit 3. A copy of the FRA's Q&A sheet about the Directive and modification, which can be found at https://www.fra.dot.gov/Page/P0790, is attached as Exhibit 4.

DATED this 21st day of October, 2015.

FOSTER PEPPER PLLC

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Attorneys for BNSF Railway Company

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon the persons and entities listed on the Service List below via electronic mail and by depositing a copy of said document in the United States mail, addressed as shown on said Service List, with first class postage prepaid.

For Washington Utilities and Transportation Commission:

Julian Beattie
Office of the Attorney General
Utilities and Transportation Division
1400 S. Evergreen Park Drive SW
PO Box 40128
Olympia, WA 98504-0128

Email: jbeattie@utc.wa.gov

I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

DATED October 21, 2015, at Seattle, Washington.

Debra A. Samuelson

Debra A. Samuelson

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Exhibit 1

To Respondent BNSF Railway Company's
Response To Bench Request No. 4

Railroad Safety
Divisions
Hazardous Materials
- Overview
- Tank Car Safety
- Movement Approvals
- Hazmat Training and Outreach
- Industry Response to Safety Advisory 2013-06
- LNG Tenders / Locomotives
- Railworthiness Directive, Notice No. 1 - McKenzie Valves

Home Page // Railroad Safety // Divisions // Hazardous Materials // Railworthiness Directive, Notice No. 1 - McKenzie Valves

Railworthiness Directive, Notice No. 1 - McKenzie Valves

UPDATED May 14, 2015 - Letter from FRA to RSI authorizing modified RWD compliance schedule

On March 18, 2015 FRA published a Railworthiness Directive applicable to railroad tank cars equipped with certain valves marketed and sold by McKenzie Valve & Machining LLC (formerly McKenzie Valve & Machining Company), an affiliate company of Union Tank Car Company (UTLX).



Recent FRA investigations identified several railroad tank cars transporting hazardous materials and leaking small quantities of product from the cars' liquid lines. FRA's investigation revealed that the liquid lines of the leaking tank cars were equipped with a certain type of 3" ball valve marketed and sold by McKenzie Valve & Machining LLC. FRA further found certain closure plugs installed on the 3" valves cause mechanical damage to the valves, which leads to the destruction of the valves' seal integrity and that the 3" valves, as well as similarly-designed 1" and 2" valves provided by this manufacturer are not approved for use on tank cars.

FRA issued this Railworthiness Directive to all owners of tank cars used to transport hazardous materials within the United States to ensure they identify and appropriately remove and replace these valves with approved valves consistent with Federal regulations.

Railworthiness Directive for Railroad Tank Cars Equipped with Certain McKenzie Valve & Machining LLC Valves - March 18, 2015

Q&A Guidance on movement of cars equipped with certain McKenzie valves subject to the March 18, 2015 Railworthiness Directive

Drawing to identify the McKenzie 1", 2", and 3" UNNR Valves

Exhibit 2

To Respondent BNSF Railway Company's
Response To Bench Request No. 4

4910-06-P

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Chapter II

[Railworthiness Directive, Notice No. 1]

Railworthiness Directive for Railroad Tank Cars Equipped With Certain McKenzie Valve & Machining LLC Valves

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Notice of railworthiness directive.

SUMMARY: Recent FRA investigations identified several railroad tank cars transporting hazardous materials and leaking small quantities of product from the cars' liquid lines. FRA's investigation revealed that the liquid lines of the leaking tank cars were equipped with a certain type of 3" ball valve marketed and sold by McKenzie Valve and Machining (McKenzie) (formerly McKenzie Valve & Machining Company), an affiliate company of Union Tank Car Company (UTLX). FRA further found certain closure plugs installed on the 3" valves cause mechanical damage to the valves, which leads to the destruction of the valves' seal integrity and that the 3" valves, as well as similarly-designed 1" and 2" valves provided by this manufacturer are not approved for use on tank cars. FRA is issuing this Railworthiness Directive (Directive) to all owners of tank cars used to transport hazardous materials within the United States to ensure they

identify and appropriately remove and replace these valves with approved valves consistent with Federal regulations.

DATES: This Directive is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. This Directive is applicable March 13, 2015.

FOR FURTHER INFORMATION CONTACT: Karl Alexy, Staff Director, Hazardous Materials Division, Office of Technical Oversight, FRA, 1200 New Jersey Avenue, SE., Washington, DC 20590, telephone (202) 493-6245; Karl.Alexy@dot.gov.

SUPPLEMENTARY INFORMATION: Recent FRA investigations identified several DOT Specification 111 railroad tank cars transporting hazardous materials and leaking small quantities of product.[1] One instance occurred during the week of January 11, 2015, and involved a train of 100 tank cars loaded with crude oil being transported by BNSF Railway (BNSF) from Tioga, ND, to a refinery in Anacortes, WA. BNSF discovered 14 tank cars leaking crude oil en route and in accordance with the applicable regulations, notified FRA of the releases. Upon discovery of the defective condition of these cars, BNSF removed the cars from the train (at Hauser, ID; Vancouver and Auburn, WA, respectively). When the train arrived at its final destination in Anacortes, the consignee, Tesoro Refining, discovered two additional cars leaking product. In all, BNSF and Tesoro identified 16 leaking tank cars from the original train consist.

On January 15, 2015, FRA inspected seven of the identified leaking tank cars that BNSF removed from the train in Vancouver. The FRA inspector observed crude oil on

[1] DOT Specification 111 tank cars are general purpose, nonpressure railroad tank cars commonly used to transport a variety of regulated hazardous materials, as well as nonregulated commodities. In 2011, through issuance of Casualty Prevention Circular 1232, the Association of American Railroads (AAR) adopted an industry standard intended to improve the crashworthiness of DOT Specification 111 tank cars used in crude oil and ethanol service. These cars, known as CPC 1232 cars, include a thicker shell, head protection, top fittings protection, and relief valves with a greater flow capacity as compared to baseline DOT Specification 111 cars. The leaking tank cars identified in this Directive include both a baseline DOT 111 Specification car and CPC-1232 cars.

the sides of each of these cars, and upon inspection of each tank car's top fittings, found product leaking from the liquid line ball valves and around each valve's closure plug. FRA also found the standalone closure plugs in each of these valves loose. Further inspection revealed that the valve balls had visual signs of mechanical damage. The mechanical damage FRA observed indicated that the bottom face of the closure plug came in contact with the valve ball, consequentially preventing complete engagement of the closure plug.

A second instance involved a single tank car loaded with mineral spirits (a Class 3 flammable liquid) found leaking on January 15, 2015, in a BNSF yard in Denver, CO. FRA's preliminary investigation shows that the leak occurred through the liquid line valve while the car was en route to its destination.

UTLX owns all 17 of the cars found leaking as described above. Each of the leaking cars was configured with liquid line ball valves sold by UTLX's affiliate, McKenzie, and each valve was configured with a 3" standalone plug as a closure. FRA identified the leaking valves as 3" McKenzie UNNR threaded ball valves (McKenzie valves).

McKenzie provided FRA several valve configuration drawings indicating that the valve was a full port valve. This configuration requires a 3" x 2" reducer bushing with a 2" plug to prevent contact between the closure plug and the valve ball. McKenzie also informed FRA that it markets and sells the same design of valve in 1" and 2" models. For the 2" valve, McKenzie specified the use of a 1" plug and an appropriately sized reducer.

At FRA's request, UTLX provided FRA drawings of the top fittings arrangements for these cars. However, unlike the drawings provided by McKenzie, the UTLX drawings provided by UTLX did not include a full port valve with a reducer bushing. Instead, consistent with the physical configuration of the tank cars FRA inspected, the drawings showed a full port threaded valve along with a 3" plug and chain.

On January 27, 2015, FRA conducted field testing of the McKenzie valves at UTLX's Altoona, PA, tank car repair facility. FRA tested new 1", 2", and 3" McKenzie valves at the facility's valve shop. The field testing included two cycles of application and removal of each valve's plug. FRA found that the 1" and 2" McKenzie valves showed no signs of contact between the valve ball when a 1" or 2" closure plug was installed and tightened. However, when a 3" closure plug was applied and tightened in the 3" McKenzie valve, the plug contacted and damaged the ball. The damage observed during this testing was consistent with the type of damage observed on the leaking UTLX tank cars described above.

FRA's field testing further found that the application of downward force on the valve ball applied by the 3" plug resulted in the over-compression, damage, and misalignment of the inboard seal, causing the valve to leak. FRA also observed that once a valve's ball is damaged, when the valve is subsequently opened, the damaged surface of the ball also damaged the valve's top seals by tearing the seals. This further compromises the valve's seal. Additionally, FRA understands that with repeated opening and closing (exemplifying in-service use), the valve's threads will degrade, necessitating further engagement of the threads during subsequent applications of the plug. This continual degradation of the threads will require increasingly more tightening of the plug,

exacerbating the damage to the ball and seals. In summary, FRA found that normal application and tightening of the 3" plug in a 3" McKenzie valve destroys the valve seal integrity.

FRA conducted a followup investigation at the UTLX facility in Altoona to perform a leak test of the 3" McKenzie valve that was field tested and damaged on January 27, 2015. Although the designed leak-free working pressure of this valve is up to 500 pounds per square inch (psi), the leak test procedure requires that the valve hold a minimum pressure of 30 psi. The subject McKenzie valve failed to retain the minimum 30 psi of compressed air test pressure. The valve showed signs of a significant leak.

As required by Title 49 Code of Federal Regulations (CFR) 179.100–13 and 179.200–16 of the Federal Hazardous Materials Regulations (49 CFR Parts 171–180; (HMR)), all valves applied to tanks cars must be of an approved design. The term "approved" is defined in 49 CFR 179.2 as "approved by the [AAR] Tank Car Committee."[2]

McKenzie provided FRA with the Association of American Railroads (AAR) approval letters for the McKenzie valves. While McKenzie may have believed these approvals were sufficient, the provided AAR approvals demonstrate clear inconsistencies between the type of valve design that AAR approved versus the design of the valve actually being used and the design depicted on the valve configuration drawings both McKenzie and UTLX provided to FRA. AAR Approval E-077035 (October 26, 2007) is

[2] As background, the Tank Car Committee is composed of various railroad industry representatives, including railroads, tank car shipper and owner organizations, tank car builders, and chemical and industry associations. FRA and the DOT's Pipeline and Hazardous Materials Safety Administration also participate in the Tank Car Committee's processes. The Tank Car Committee has traditionally been the body with the expertise to develop tank car design, construction, and maintenance standards in this country. DOT sets minimum tank car specifications at 49 CFR part 179, and AAR approves designs meeting the requirements of part 179.

a renewal of previous AAR approvals,[3] and describes a 3" standard port threaded ball valve. The original approvals that AAR renewed described and referred to UTLX Drawing 72916, which depicts a 3" standard port threaded ball valve. In contrast, the 3" McKenzie valve at issue is a full port ball valve. A full port valve is different from a standard port valve.[4] The dimensions of the valve body that AAR approved is significantly longer than the bodies of the valves depicted on the McKenzie drawings and the bodies of the valves actually installed on the leaking tank cars. McKenzie also provided a copy of a September 29, 2008, application for approval of a 3" threaded full port valve (AAR application number E-087016), but neither McKenzie nor AAR have provided evidence of that valve's subsequent approval.

McKenzie provided information to FRA indicating that from 2009 through the present, it sold approximately 11,200 of the 3" valves to a variety of tank car owners and tank car facilities. McKenzie indicates that since 2012, its sales of these valves were predominantly to replace in-kind valves previously installed on existing tank cars. Further, McKenzie informed FRA that as of January 26, 2015, the company has stopped selling the 3" valves as a result of the noted safety concerns. Overall, McKenzie and UTLX provided information leading FRA to conclude that approximately 6,000 DOT Specification railroad tank cars are equipped with the unapproved 3" McKenzie UNNR

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[3] AAR Approval E-977030 (April 9, 1997). AAR Approval E-977030 was a renewal of AAR Approval E-897047 (June 21, 1989), which also referred to UTLX Drawing 72916.

[4] The difference between a full port and standard port ball valve is the size of the ball's bore diameter as related to nominal pipe sizes, with the ball size being in proportion to the bore size diameter. The bore size in a full port valve is that of its nominal pipe size, where the bore size in a standard port valve is that of the next smallest nominal pipe size. For example, the bore diameter for a 3" standard port ball valve is approximately 2.25", or one pipe size smaller, and for a full port ball valve, the bore diameter is approximately 3" in diameter (the actual size of the pipe).

valves. In addition, McKenzie indicates that it has sold over 37,000 1" and 2" valves to a variety of tank car owners and tank car facilities.

To date, FRA has identified only a small number of relatively minor hazardous materials leaks directly attributable to the identified McKenzie valves. FRA believes that the number of leaks potentially attributable to the identified McKenzie valves used in tank car liquid lines could be much higher. Based on FRA's field testing, the 3" McKenzie valve appears to present an immediate safety issue in certain circumstances. While the 1" and 2" McKenzie valves do not appear to present similar concerns, based on the information that AAR, McKenzie, and UTLX have provided to date, it does not appear that any size of the McKenzie valves (i.e., the 1", 2", or 3" UNNR valves) are currently approved for use on railroad tank cars. Accordingly, use of such valves on tank cars is in violation of the HMR. At this time, FRA is not aware of any non-accident releases or other releases from railroad tank cars involving the 1" or 2" McKenzie valves, but since the valves have not been approved by AAR they have not been shown to be safe for use on railroad tank cars.

McKenzie and UTLX have taken independent actions to address some of the safety concerns with the 3" valves. However, FRA believes those actions fail to adequately address the safety issue the valves present.

Railworthiness Directive: Based on the above discussion, and acting under the authority granted in 49 CFR 180.509(b)(4), FRA finds that the continued use of railroad tank cars equipped with the unapproved McKenzie UNNR threaded ball valves (including the 1", 2", and 3" UNNR valves) to transport hazardous materials by rail in the United States presents an unsafe operating condition. The use of such tank cars equipped

with these valves could result in the release of hazardous materials. Further, the use of tank cars equipped with these McKenzie valves used to transport hazardous materials in the United States violates the requirements of the HMR. FRA is issuing this directive to ensure public safety, ensure compliance with the applicable Federal regulations governing the safe movement of hazardous materials by rail, and restore the railworthiness of all tank cars equipped with the above-described McKenzie valves.

Upon the applicability date of this Directive, any railroad tank car equipped with an unapproved McKenzie UNNR threaded ball valve (McKenzie valve) is prohibited from being loaded with any hazardous material described in 49 CFR 172.101 and offered into transportation until the requirements listed below are met. Tank car owners[5] of tank cars equipped with McKenzie valves must:

(1) Identify the railroad tank cars in their fleet equipped with any McKenzie valve.

(2) Provide to FRA: (a) the reporting mark and number of each car equipped with any McKenzie valve; and (b) the type of valve each car is equipped with.

(3) Create and maintain for a minimum of 6 months from the applicability date of this directive a record of the inspection of each McKenzie valve. The record must include, at a minimum, the inspection date and location, as well as the results of the inspection (i.e., whether the valve was removed or not). The record must be made available to FRA for inspection upon request.

(4) Immediately inspect the 3" McKenzie valves on each affected car. If any valve is configured with a 3" standalone plug, ensure that the car is not loaded and

[5] The term "tank car owners" is as defined in 49 CFR 180.503.

offered into transportation until that valve is replaced with an approved valve consistent with 49 CFR part 179. In addition, any tank car equipped with an unapproved 3" McKenzie valve is prohibited from being offered into transportation (whether loaded or residue) after May 12, 2015.

(5) Immediately inspect the 1" and 2" McKenzie valves on each affected car. If any valve shows evidence of mechanical damage, ensure that the car is not loaded and offered into transportation until that valve is replaced with an approved valve consistent with 49 CFR part 179. Even if a valve is not damaged, a tank car equipped with an unapproved 1" or 2" McKenzie valve is prohibited from being offered into transportation (whether loaded or residue) after June 11, 2015.

(6) Ensure that each unapproved McKenzie valve is removed and replaced by an entity permitted to perform such work in accordance with 49 CFR part 179.

(7) Ensure the valve application is properly qualified as required by subpart F of 49 CFR Part 180.

After tank car owners have inspected and/or replaced the unapproved valves on each affected tank car as required above, and have provided the necessary information regarding that car to FRA, tank car owners may load the cars with hazardous materials and offer those cars for transportation. Alternatively, if upon an adequate showing demonstrating the safety of the 1" and 2" valves, McKenzie obtains AAR's approval for the use of those valves on DOT Specification 111 tank cars, cars equipped with these 1" or 2" McKenzie valves may be returned to hazardous materials service.

Tank car owners must send the information required to be submitted to FRA under this Directive to:

Mr. Randy M. Keltz, Jr.

Tank Car Quality Assurance Specialist

Office of Railroad Safety

Federal Railroad Administration

1200 New Jersey Avenue, SE

Washington, DC 20590

Telephone: (202) 236-7460

Email: Randy.Keltz@dot.gov

Regardless of any entity's compliance with this directive, FRA reserves the right to seek civil penalties or to take any other appropriate enforcement action for violations of the HMR that have occurred. FRA will be conducting an investigation to ensure that all tank cars equipped with the valves in question are identified and repaired consistent with the requirements of this Directive.

Issued in Washington, DC, on March 13, 2015.

Robert C. Lauby,
Associate Administrator for Railroad Safety,
Chief Safety Officer.

[FR Doc. 2015-06213 Filed: 3/17/2015 08:45 am; Publication Date: 3/18/2015]

Exhibit 3

To Respondent BNSF Railway Company's
Response To Bench Request No. 4

U.S. Department
of Transportation

Federal Railroad
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

MAY 12 2015

Mr. Thomas D. Simpson
President
Railway Supply Institute
425 Third Street SW, Suite 920
Washington, DC 20024

Dear Mr. Simpson:

Thank you for the Railway Supply Institute's (RSI) April 24, 2015, letter to the Federal Railroad Administration (FRA) requesting an extension of time to comply with the requirements of FRA's Railworthiness Directive (Directive) issued on March 13, 2015,[1] and seeking certain modifications of the Directive's requirements.

As issued, the Directive mandates the removal and replacement of certain valves sold by McKenzie Valve & Machining (McKenzie)[2] and installed on U.S. Department of Transportation (DOT) specification railroad tank cars. The Directive mandates the removal and replacement of certain identified valves by May 12, 2015, and others by June 11, 2015. RSI's letter indicates that industry is unable to comply with these deadlines, citing a lack of available replacement valves and inadequate capacity at tank car repair facilities available to perform such work.

FRA appreciates and understands the practical challenges industry faces to complete the valve replacements the Directive requires. FRA believes, however, that the amended deadlines RSI requests would not adequately address the concern posed by the continued long-term use of the identified unapproved valves. Thus, as described below, FRA is extending the deadlines of the Directive as originally issued, but not for the specific lengths of time RSI requested.

I. Background

As noted above, the Directive requires the identification, inspection, and replacement of certain ball valves marketed and sold by McKenzie and installed on railroad tank cars. The valves identified by the Directive include 1", 2", and 3" McKenzie UNNR threaded ball

[1] FRA published the Directive on March 18, 2015. See 80 FR 14027 (Mar. 18, 2015).
[2] McKenzie, formerly McKenzie Valve & Machining Company, is an affiliate company of Union Tank Car Company.

valves. As explained in the Directive, these valves are not approved by the Association of American Railroads (AAR), and the applicable Federal regulations do not permit the valves' use on DOT specification railroad tank cars. Further, as detailed in the Directive, FRA found that certain closure plugs installed on the 3" valves cause mechanical damage to the valves, leading to leaks of hazardous material. The Directive required tank car owners to identify, inspect, remove, and replace these valves with AAR-approved valves consistent with Federal regulations. The Directive established timelines of 60 days to remove and replace the 3" valves and 90 days to remove and replace the 1" and 2" valves, after which tank cars still equipped with such unapproved valves cannot be loaded and offered into transportation. The 60-day deadline applicable to the 3" valves occurs on May 12, 2015, and the 90-day deadline applicable to the 1" and 2" valves occurs on June 11, 2015.

II. RSI's Request

RSI asserts that the design and serviceability of only the 3" carbon steel McKenzie valves are in question. Further, RSI states that there are only two AAR-approved vendors of 1", 2", and 3" valves that can be used to replace the McKenzie valves affected by the Directive and the current supply of valves is not adequate to meet the Directive's deadlines. RSI also asserts that even if an adequate supply of replacement valves did exist, the capacity of the existing tank car repair facilities is not adequate to meet the deadlines of the Directive.

As a result of the above, RSI's letter requests extensions of the deadlines for replacement of the affected McKenzie valves. RSI requests an extension of up to 3 years for replacement of all 3" unapproved McKenzie valves used in hazardous materials service, and up to 5 years (or next service date) for 3" valves on cars used in nonhazardous materials service. RSI also proposes certain mitigation measures in the interim period before the valves' replacement depending, for example, on the type of service the valve is used for or the specific configuration of the valve. Further, RSI proposes the replacement of the 1" and 2" McKenzie valves at each car's next service equipment qualification date.

III. Discussion and Modification of Directive

RSI's request for relief applies to numbered paragraphs (4) and (5) of the Directive. The requirements in numbered paragraphs (1) and (2) of the Directive address the identification of tank cars containing the McKenzie valves in question, and the reporting of each such car's reporting mark and number and the type of affected McKenzie valve(s) the car is equipped with.

To date, FRA has received what it believes to be a significant percentage of that required information and these requirements remain in place. However, if any tank car owner has not yet reported the required information to FRA, FRA requests that they do so by June 1, 2015. Numbered paragraph (3) of the Directive required tank car owners to create and maintain a record of the inspection of each McKenzie valve for a minimum of 6 months from the Directive's effective date, and to make that record available to FRA upon request. In light of FRA's extension of the deadlines for replacing the identified valves (discussed below), FRA is revising this recordkeeping requirement to require that tank car owners maintain the

records of the inspection and replacement of the 3" McKenzie valves until at least June 30, 2016, and maintain the records of the inspection and replacement of the 1" and 2" McKenzie valves until the next service equipment qualification event.

Numbered paragraph (4) of the Directive requires tank car owners to immediately inspect the 3" McKenzie valves on each affected car and if any valve is configured with a 3" standalone plug, ensure that the car is not loaded and offered into transportation until that valve is replaced with an approved valve consistent with Title 49 Code of Federal Regulations (CFR) Part 179–Specifications for Tank Cars. That same paragraph further prohibits any tank car equipped with an unapproved 3" McKenzie valve from being offered into transportation (whether loaded or residue) after May 12, 2015.

RSI asserts that the design and serviceability of only the 3" carbon steel McKenzie valves are in question and that there are only approximately 600 cars with these types of valves. RSI requests an extension of the Directive's May 12, 2015, deadline to June 12, 2015, to replace the 3" carbon steel valves, but requested an extension until as late as May 2018, to replace the stainless steel 3" McKenzie valves. RSI did not, however, provide any evidence or explanation of how the difference in the valves' composition relates to the risk of damage to a valve's ball and seal integrity. Therefore, FRA has no basis to apply different timeframes based on the valves' composition.

As discussed in the Directive, FRA's field testing of a 3" valve with a 3" standalone plug showed damage to the valve's ball, and lack of seal integrity could occur as a result of normal use. However, since issuance of the Directive, FRA learned through the service history of these 3" valves that when properly configured, the valves can maintain their integrity (e.g., the valves may be configured with a 2" plug and reducer bushing, a 3" plug with joint lubricating and sealing material such as Teflon tape may be used and the plug not tightened to the point of contact with the ball). Thus, FRA finds a basis for extending the deadline for replacement of the 3" valves until December 31, 2015. Accordingly, tank car owners may continue in service a tank car equipped with a 3" McKenzie valve identified by the Directive until December 31, 2015. As applied to tank cars equipped with a 3" McKenzie valve configured with a 3" plug, this allowance for continued use in hazardous materials service is conditioned upon the performance of a visual inspection of the valve (including the ball of the valve) for evidence of damage prior to each time the car is offered for transportation (whether loaded or residue). If upon inspection, a valve shows any signs of damage, the affected car must not be offered into transportation until the valve is replaced consistent with the Directive. FRA will audit compliance with this letter periodically to ensure industry is making satisfactory progress.

As noted in the Directive, the 1" and 2" McKenzie valves do not appear to present similar safety concerns. FRA is not aware of any non-accident or other release involving the 1" or 2" McKenzie valves. However, as noted in the Directive, the valves are not approved for use on railroad tank cars and any tank car equipped with such valves is not "qualified" as 49 CFR Part 180–Continuing Qualification and Maintenance of Packagings requires. Nevertheless, in response to RSI's request, FRA is amending the requirements of the Directive to require that cars equipped with 1" or 2" McKenzie valves be inspected initially,

and that the valves be replaced: (1) at the time of the car's next shopping for any major repair; (2) during the next qualification event; or (3) at the time of retrofit consistent with HM-251, whichever occurs first. FRA will monitor the performance of the 1" and 2" valves. If we discover a safety issue with these valves, we will reconsider imposing compliance dates for removal and replacement of these valves.

Although not subject to the Directive as originally issued, RSI's letter states that DOT specification tank cars utilized in nonhazardous materials service are also equipped with these unapproved McKenzie valves. Recognizing the limited concern these cars present, FRA is requiring that any McKenzie 1", 2", or 3" valves subject to the Directive on any DOT specification tank car not used in hazardous materials service be replaced: (1) at the time of the car's next shopping for any major repair; (2) during the next qualification event; or (3) at the time of retrofit consistent with HM-251, whichever occurs first.

FRA believes its approach ensures safety, helps to facilitate compliance with the applicable Federal regulations governing the safe movement of hazardous materials by rail, and will restore the rail worthiness of all tank cars equipped with the above-described McKenzie valves as soon as practicable.

FRA notes that numbered paragraphs (6) and (7) of the Directive remain in effect as issued. FRA further notes that regardless of any entity's compliance with the requirements of the Directive as originally issued, or as amended by this letter, FRA reserves the right to seek civil penalties or to take any other appropriate enforcement action for violations of the Hazardous Materials Regulations that have occurred.

Sincerely,

Robert C. Lauby
Associate Administrator for Railroad Safety
Chief Safety Officer

cc: Mr. Ken Dorsey, Association of American Railroads
Mr. John R. Byrne, GE Railcar Services
Mr. David Eggermann, BASF Corporation
Mr. William Finn, RSI
Mr. Rich Gore, PE, VTG Rail
Mr. Mike Henderson, Greenbrier Management Services
Mr. Donald Langdale, ERCO Worldwide
Mr. Matthew Leshinskie, Chemours Sourcing and Logistics
Mr. Joe Perez, Union Tank Car
Mr. Tom Simpson, RSI
Mr. Kenneth E. Thurman II, Chevron Products Company

Exhibit 4

To Respondent BNSF Railway Company's
Response To Bench Request No. 4

QUESTIONS AND ANSWERS

Railworthiness Directive (RWD) for Railroad Tank Cars Equipped with Certain McKenzie Valve & Machining LLC Valves

Federal Railroad Administration

March 24, 2015

REVISED MAY 14, 2015 to reflect modification of the compliance schedules provided in May 12, 2015 letter from FRA to RSI

3" and 2" McKenzie UNNR Valves with Reducer Fittings and Plugs

Impact mark on internal ball of valve evident of contact w/plug

3" and 2" McKenzie UNNR Valves with Plugs

Q1) May I offer into transportation a tank car loaded with product and equipped with the 3" threaded by threaded McKenzie UNNR full port ball valve with a 3" standalone plug?

A1) Yes, a tank car with this valve configuration may continue in hazmat service until December 31, 2015 (May 12, 2015 letter from FRA to RSI) provided that prior to each time the car is offered for transportation, the valve, including the ball is visually inspected for damage and no damage is observed. After December 31, 2015, these cars may not be moved unless authorized by an approval (OTMA-1) issued in accordance with HMG-127.

Q2) May I offer into transportation a tank car containing residual product and equipped with the 3" threaded by threaded McKenzie UNNR full port ball valve with a 3" standalone plug?

A2) Yes, a tank car with this valve configuration may continue in hazmat service until December 31, 2015 (May 12, 2015 letter from FRA to RSI) provided that prior to each time the car is offered for transportation, the valve, including the ball is visually inspected for damage and no damage is observed. After December 31, 2015, the tank car must be moved in accordance with the procedural requirements for OTMA-3 specified in HMG-127, and the defect number on the OTMA-3 notification should be replaced with "RWD".

Q3) May I offer into transportation a tank car, loaded or residue, equipped with the 3" threaded by threaded McKenzie UNNR full port ball valve that is not equipped with a 3" plug (e.g., the valve outlet is otherwise equipped with a bushing or reducer and a 2" plug)?

A3) Yes, a tank car with this valve configuration may continue in hazmat service until December 31, 2015 (May 12, 2015 letter from FRA to RSI) provided that prior to each time the car is offered for transportation, the valve, including the ball is visually inspected for damage and no damage is observed. After December 31, 2015 the tank car must be moved in accordance with the procedural requirements for OTMA-3 specified in HMG-127, and the defect number on the OTMA-3 notification should be replaced with "RWD".

Q4) May I offer into transportation a tank car, loaded or residue, equipped with the 1” or 2” threaded by threaded McKenzie UNNR full port ball valve?

A4) Yes, if upon initial inspection of the valve there is no evidence of damage to the valve you can continue to operate this tank car until the time of the next shopping for major repair, the next required qualification event, or at the time of the next retrofit consistent with the HM-251 final rule, whichever occurs first.

Q5) Is this directive applicable to all McKenzie Valves? (e.g. pressure relief valves, vacuum relief valves, bottom outlet valves, etc.)

A5) No, this directive only applies to the 1”, 2”, and 3” McKenzie UNNR threaded by threaded full port ball valves.

Q6) May I utilize a tank car equipped with the McKenzie UNNR valve if I only ship non-regulated products?

A6) Yes, if upon inspection there is no evidence of damage to the valve you can continue to operate this tank car until the time of the next shopping for major repair, the next required qualification event, or at the time of the next retrofit consistent with the HM-251 final rule, whichever occurs first.