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4910-06-P

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

Safety Advisory 2023-01; Evaluation of Policies and Procedures Related to the Use and Maintenance of Hot Bearing Wayside Detectors (Second Supplement)

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

ACTION: Notice of Safety Advisory; Notice No. 3.

SUMMARY: FRA is issuing this Second Supplement to Safety Advisory 2023-01 to reiterate and expand upon the recommendations in its previously published Safety Advisories related to hot bearing wayside detectors (HBDs). This Safety Advisory reiterates FRA's previous recommendations in Safety Advisory 2023-01 and its June 14, 2023 Supplement, and expands on the recommendations to incorporate the findings of FRA's ongoing evaluations by emphasizing: the importance of trend analysis and the opportunity to integrate wayside detector data types to evaluate railcar health; the need to establish and follow appropriate processes in analyzing and responding to HBD data; the need for railroads to ensure that adequate staff are assigned to monitor and respond to wayside detector data; and the need for railroads to maximize the use of HBD data, including sharing wayside detector data between railroads, as a train travels from one railroad's tracks to another railroad's track.

FOR FURTHER INFORMATION CONTACT: For further information concerning this Safety Advisory, please contact Karl Alexy, Associate Administrator for Railroad Safety and Chief Safety Officer, Office of Railroad Safety, FRA, 1200 New Jersey Avenue, SE, Washington, DC 20590, (202) 493-6282. *Disclaimer:* This Safety

Advisory is considered guidance pursuant to DOT Order 2100.6A (June 7, 2021).

Except when referencing laws, regulations, policies, or orders, the information in this Safety Advisory does not have the force and effect of law and is not meant to bind the public in any way. This document revises and expands upon the previously issued guidance in Safety Advisory 2023-01 published on March 3, 2023 and the first supplement to that Safety Advisory published on June 14, 2023.

SUPPLEMENTARY INFORMATION:

Background

On February 21, 2023, in response to a series of rail accidents, including the February 3, 2023, Norfolk Southern Railway Company (NS) train derailment in East Palestine, Ohio, U.S. DOT Secretary Pete Buttigieg, while calling on the freight rail industry and Congress to take action to improve rail safety, reiterated the Department's commitment to enhancing rail safety through specific targeted actions.¹ In addition to various regulatory and other activities FRA already had underway at the time of Secretary Buttigieg's announcement, one of the actions announced included a focused inspection program of routes over which high-hazard flammable trains (HHFTs)² and other trains transporting large volumes of hazardous materials travel (Route Assessment). Subsequently, consistent with the commitments in the Secretary's call to action and in response to continued derailments and the death of an NS worker, FRA launched a supplemental safety assessment of NS and issued multiple safety advisories and safety bulletins,³ calling attention to the risks FRA identified in recent accidents.

On March 3, 2023, FRA published Safety Advisory 2023-01 (88 FR 13494) and on June 14,

¹ See <https://www.transportation.gov/briefing-room/us-department-transportation-fact-sheet-steps-forward-freight-rail-industry-safety>.

² An HHFT is "a single train transporting 20 or more loaded tank cars of a Class 3 flammable liquid in a continuous block or a single train carrying 35 or more loaded tank cars of a Class 3 flammable liquid throughout the train consist." 49 CFR 171.8.

³ <https://railroads.dot.gov/elibrary/safety-advisory-2023-01-evaluation-policies-and-procedures-related-use-and-maintenance-hot>; <https://railroads.dot.gov/elibrary/safety-advisory-2023-02-train-makeup-and-operational-safety-concerns>; <https://railroads.dot.gov/elibrary/safety-advisory-2023-03-accident-mitigation-and-train-length>; <https://railroads.dot.gov/elibrary/safety-bulletin-2023-01-switching-operation-accident>; <https://railroads.dot.gov/sites/fra.dot.gov/files/2023-03/Safety%20Bulletin%202023-02%20%28031623%29.pdf>.

2023, FRA published a Supplement to that Safety Advisory (88 FR 38933). Both Safety Advisory 2023-01 and the June 14, 2023, Supplement to that Safety Advisory recommended that railroads take certain actions relative to HBDs to enhance the mechanical reliability of their rolling stock and improve the overall safety of railroad operations. Since publication of those advisories, FRA has continued to evaluate railroads' use of HBDs and investigate accidents relating to journal bearings on railcars.

Additionally, FRA proposed a task statement to the Rail Safety Advisory Committee (RSAC) to lead the development of best practices in the use of wayside detectors that may include recommendations to update existing regulations and guidance, and/or develop new regulations and guidance regarding wayside detector equipment and operations.

HHFT Route Assessment

As noted above, in March 2023, FRA initiated the Route Assessment, a nationwide comprehensive assessment of the rail routes over which HHFTs and other trains carrying large volumes of hazardous materials are transported. The Route Assessment included all FRA technical safety disciplines (i.e., hazardous materials, track, signal and train control, mechanical, operating practices, and grade crossing). The Route Assessment was designed to evaluate the overall condition of the rail infrastructure (including, but not limited to, track, rolling stock, signal systems, and other equipment that affects or monitors the safety of rail operations) and railroads' compliance with both FRA safety regulations and the regulations of the Pipeline and Hazardous Materials Safety Administration.

FRA published the High-Hazard Flammable Train Route Assessment & Legacy Tank Car Focused Inspection Program Summary Report on January 2024 (Summary Report).⁴ This Summary Report identified areas where improvements are needed in railroads' practices, processes, and procedures relating to the use of wayside detector

⁴ Available at: https://railroads.dot.gov/sites/fra.dot.gov/files/2024-01/HRA%20Final%20Report_01.22.24.pdf.

technology to help ensure effective use of that technology. For example, FRA found inconsistencies in railroads' processes and procedures for handling wayside detector data and recommended railroads develop and share with industry best practices related to the inspection and maintenance policies and procedures relating to wayside detectors. Similarly, FRA found that the lack of detector data-sharing among railroads was preventing individual railroads from identifying trends in equipment condition as equipment is interchanged between railroads. The Summary Report also highlighted the need for railroads to ensure sufficient resources and infrastructure are in place to effectively process and communicate detector data and alerts to all those involved in the movement of trains.

Supplemental Safety Assessment of NS

On March 15, 2023, FRA initiated a supplemental safety assessment of NS (NS Assessment), with a specific focus on safety culture and training, as well as a deep dive into compliance with selected regulations and the status of NS's responses to FRA recommendations resulting from FRA's 2022 System Audit of the railroad.⁵ In August 2023, FRA published its findings resulting from the NS Assessment⁶ that included several areas of concern relating to NS's use of HBDs and included recommendations to improve the resiliency of NS's processes and procedures for monitoring and responding to bearing health information from the railroad's system of HBDs.⁷

RSAC Wayside Detector Working Group

On April 21, 2023, RSAC accepted FRA's proposed task statement related to wayside detectors (RSAC Task No. 2023-01).⁸ The RSAC working group charged with

⁵ FRA Audit No. 2022-NS Special Audit -01-1 available at <https://railroads.dot.gov/elibrary/fra-audit-report-norfolk-southern-railway-company>.

⁶ <https://railroads.dot.gov/about-fra/communications/newsroom/press-releases/supplemental-safety-assessment-norfolk-southern>.

⁷ https://railroads.dot.gov/sites/fra.dot.gov/files/2023-08/2023%20NS%20Safety%20Culture%20Assessment_08.09.23.pdf.

⁸<https://rsac.fra.dot.gov/tasks>.

carrying out this task includes representatives from railroads, suppliers, and labor organizations. The working group is analyzing current railroad processes and procedures, as well as current industry standards and historical safety data. This ongoing RSAC task is intended to lead to the development of best practices in the use of wayside detectors that may include recommendations to update existing regulations and guidance, and/or develop new regulations and guidance regarding wayside detector equipment and operations. FRA anticipates that the RSAC task will be completed by the end of 2024.

Analysis of Recent Accidents and Safety Trends

Since publication of the first supplement to Safety Advisory 2023-01 on June 14, 2023, five (5) FRA-reportable accidents suspected to be caused by or attributable to a burnt journal bearing(s) have occurred.⁹ Of these accidents, at least three might have been prevented by improved decision-making processes or analyses using the HBD data. Further, despite railroads reporting an increase in the use of HBDs in recent years, the rate of bearing related accidents (including reportable and non-reportable accidents) has remained relatively constant over the years and shows no sign of improvement.

Recommended Railroad Actions

In light of the above discussion and in response to FRA's ongoing investigation of the derailment in East Palestine, Ohio, FRA is supplementing the recommendations included in Safety Advisory 2023-01 and its June 14, 2023, Supplement to expand upon recommendations nos. 3 and 5 as well as adding two additional recommendations. For ease of reference, FRA's existing recommendations nos. 1 through 5 are reproduced below, with changes to recommendations no. 3 and no. 5 and including the new recommendations nos. 6 and 7. Accordingly, FRA recommends that railroads take the following actions:

⁹ The five derailments since publication of Safety Advisory 2023-01 Supplement on June 14, 2023, include the May 21, 2023, UP derailment in Mecca, CA; the July 6, 2023, NS derailment in Elliston, VA; the November 22, 2023, CSX derailment in Livingston, KY; the February 10, 2024, CSX derailment in Aurora, NC; and the February 17, 2024, CSX derailment in Pee Dee, SC.

1. Review existing HBD system inspection and maintenance policies and procedures for compliance with existing industry standards and manufacturer recommendations for HBDs.

2. Review existing procedures to train and qualify personnel responsible for installing, inspecting, and maintaining HBDs to ensure they have the appropriate knowledge and skills. Railroads should also develop and implement appropriate training on the inspection and maintenance requirements for HBDs and provide that training at appropriate intervals to ensure the required knowledge and skill of inspection and maintenance personnel. Further, railroads should evaluate their training content and training frequency to ensure any employee who may be called upon to evaluate a suspect bearing has the necessary training, experience, and qualifications. FRA also encourages railroads to ensure these individuals are available at all hours of operations across a railroad's network.

3. Review current HBD detector trending logic and thresholds considering recent derailments, and all other relevant available data (including data from any close calls or near misses), to determine the adequacy of the railroad's current trend analysis and thresholds levels. Thresholds should be established for single measurement as well as multiple measurements of individual bearings to enable temperature trend analysis. Railroads should maximize the opportunity for journal bearing trending and seek opportunities to integrate wayside detector data types to evaluate railcar health and action critical issues, including risks associated with burnt journal bearings.

4. Review current procedures governing actions responding to HBD alerts to ensure required actions are commensurate with the risk of the operation involved. With regard to trains transporting any quantity of hazardous materials, FRA recommends railroads adopt the procedures outlined in AAR's OT-55 for key trains as an initial measure.

5. Rigorously evaluate the resiliency and accuracy of the overall process used to monitor and act upon information from wayside detectors, with specific focus on steps and tasks that, if not performed or performed incorrectly, could mislead decision makers. The process of monitoring, reporting, inspecting, analyzing, and acting on information from detectors includes tasks that, if incorrectly executed, could introduce risk. Railroads should also evaluate each step and task performed by railroad personnel to pinpoint any HBD reporting failures to report potential problems and implement appropriate safeguards to minimize their impact when monitoring, analyzing, and responding to detector information. For example, relating to the May 10, 2023, NS derailment in New Castle, PA referenced in the June 14, 2023, Supplement to Safety Advisory 2023-01, although the investigation is still ongoing, FRA is probing the communication and timing of the alarm and alerts to both the locomotive, wayside detector desk and the dispatch center, and if there was a failure of the railroad's process that contributed to the accident.

6. Ensure that desks for monitoring wayside detector reports, advisories, and alerts are staffed during all hours of railroad operation, including back-up personnel to ensure coverage when personnel take breaks or step away from the desk to perform other duties. All personnel that monitor the desks should be trained and knowledgeable in railcar health and wayside detector capabilities, capable of reviewing alerts and trends and corresponding with train crews regarding potential unsafe conditions.

7. Maximize the use of HBD data, as well as data from other types of wayside detectors, sharing data between railroads as a train travels from one railroad's tracks to another railroad's track, s including advising a receiving railroad when a railcar has a trending journal bearing or other potentially unsafe conditions.

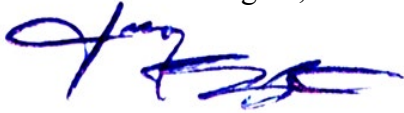
Conclusion

As noted in Safety Advisory 2023-01 and its June 14, 2023 Supplement, the

issues identified in this second supplement to Safety Advisory 2023-01 are indicators of a railroad's safety culture. Implementing procedures to ensure safety and adequately train personnel so that those procedures become second nature, is vital. Equally important is the commitment, throughout a railroad's organization, to safety and empowerment of personnel to live up to that commitment. Further, railroads must work together to maximize the use of wayside detector data and information, sharing this information openly to maximize safety.

FRA encourages railroads to take actions consistent with Safety Advisory 2023-01, as originally published, as supplemented, and as further amended in this second supplemental notice, as well as any other complementary actions, to ensure the safety of rail transportation. FRA may modify this notice, issue additional safety advisories, or take other actions necessary to ensure the highest level of safety on the Nation's railroads, including pursuing other corrective measures under its authority.

Issued in Washington, DC.



Amitabha Bose,
Administrator.