



National Transportation Safety Board

Washington, D.C. 20594

Office of Railroad, Pipeline and Hazardous Materials Investigations

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To: Larry W. Woolverton
Executive Staff Director
Federal Railroad Administration
Office of Railroad Safety
Office of Safety Analysis
1200 New Jersey Avenue SE
Washington DC, 20590

Subject: Accident # RRD18MR003
Railroad Signal Suspension Questions

Greetings Mr. Woolverton:

As part of the ongoing NTSB investigation into the head-on collision of Amtrak P91 and CSXT freight train F777 that occurred on February 4, 2018 near Cayce, SC, the NTSB would like to submit the questions below for the coordinated response of the FRA as part of the ongoing accident investigation.

Information developed during the investigation at this time shows that the signal system was in suspension in the accident area during the time this accident occurred. Please note that the NTSB is requesting all relevant documentation for the requests below that were permitted, granted, or acknowledged by the FRA for all regions from March 21, 2015 through the present date. The NTSB requests that the FRA respond within 30 days of the receipt of this letter due to the time sensitive nature of the ongoing investigation.

1. Does the FRA permit signal suspensions in relation to the installation of PTC? If so what type of risk assessment or risk mitigation is considered by the FRA before signal suspensions are granted.

Yes, FRA permits signal suspensions related to the installation of PTC.

FRA's regulations in 49 CFR part 235 require railroads to apply for FRA approval for certain discontinuances and modifications of signal systems. In the context of FRA's signal

regulations, “discontinuance” means “the cessation of an S&TC system on track that remains in service for any railroad operations” and “modification” means a material change to a signal system. *See* 43 Fed. Reg. 58100, 58102 (Dec. 12, 1978). *See also* 49 CFR 235.5. FRA’s regulations provide for both a formal approval process in 49 CFR 235.5 for a variety of signal system modifications and also an expedited approval process in 49 CFR 235.6 for certain modifications directly associated with the implementation of a PTC system. Although the safety of railroad operations during temporary signal suspensions may be addressed under these approval processes, part 235 also excludes various signal system changes from FRA approval (49 CFR § 235.7).

FRA does not require separate approval of temporary signal suspensions if they are a necessary component of a signal system modification. In addition, FRA does not require approval of temporary signal suspensions needed to perform required maintenance or repairs to the system – with the exception of signal systems temporarily removed from service for a significant period of time (i.e., over six months) in response to a catastrophic occurrence such as derailment, flood, fire, or hurricane (*see* 49 CFR § 235.7(a)(4)). During the course of routine rail operations, railroads may need to temporarily suspend operation of a signal system to perform required maintenance or needed repairs to the system. In these instances, railroads are not required to obtain FRA approval before they temporarily suspend the signal system. Similarly, a railroad may need to temporarily suspend its signal system to install new components for an existing signal system or to install a new signal system. Generally, railroads limit the duration and scope of temporary signal suspensions in these instances and have operating rules and practices in place governing rail operations when temporary signal suspensions are in effect.¹ In these situations, a railroad may be required to obtain prior FRA approval of the signal system modification under 49 CFR § 235.5(a)(3). However, FRA would not require the railroad to seek separate FRA approval of any temporary signal system suspension required to carry out the overall modification.

If a railroad seeks to discontinue a signal system or materially modify a signal system, 49 CFR part 235 prescribes the application process for obtaining FRA approval of such changes. In particular, §§ 235.10 and 235.12 specify the information a railroad’s application to discontinue or materially modify a signal system must contain. That information includes the applicant’s corporate name; the location of the project; the track(s) involved; a complete description of the proposed changes and reason for the changes; the approximate dates of beginning and completion of the project; any changes to operating practices (temporary or permanent); whether the safety of operations will be affected and, if so, how; and whether the proposed changes will conform to 49 CFR part 236 (Rules, Standards and Instructions Governing the Installation, Inspection, Maintenance, and Repair of Signal and Train Control

¹ On Monday April 23, 2018, FRA published a draft Safety Advisory addressing railroad operations under temporary signal suspensions. *See* <https://www.gpo.gov/fdsys/pkg/FR-2018-04-23/pdf/2018-08406.pdf>. The draft Safety Advisory identifies existing industry best practices railroads utilize when implementing temporary signal suspensions and recommends that railroads conducting rail operations under temporary signal suspensions develop and implement procedures and practices consistent with the identified best practices. The draft Safety Advisory also recommends that railroads take certain other actions to ensure the safety of railroad operations during temporary signal suspensions. FRA believes that actions consistent with the draft Safety Advisory will reduce the risk of serious injury or death both to railroad employees and members of the public.

Systems, Devices and Appliances). FRA reviews the application and determines if the application is consistent with railroad safety and in the public interest.

Under 49 CFR part 235, an expedited application for approval of certain changes specifically allows for an expedited application for the modification of a signal system directly associated with the implementation of a PTC system, if the modification does not include the discontinuance or decrease of limits of a signal or train control system. *See* 49 CFR § 235.6 noting 235.6 was effective October 21, 2014. For an expedited application, § 235.6 requires a railroad to provide for approval a notice and profile plan for the proposed modification to the FRA Regional Administrator with jurisdiction over the affected territory. Additionally, § 235.6 requires the railroad to provide the same notice and profile plan to representatives of employees responsible for the maintenance, inspection, and testing of the affected signal system and representatives of train and engine employees responsible for operating trains or locomotives in the affected area. Although the required notice and profile plan do not necessarily include details relating to any signal suspension involved (the profile plan generally details the change to the signaling assets through drawings with markings noting changes and the final signal design state), FRA's review of these applications, along with the sharing of the application with the appropriate labor organizations, ensures the railroad's plans are transparent and facilitates communication about any related safety concerns. Section 235.6 also authorizes the FRA Regional Administrator to impose conditions on any approval. For example, if the circumstances of the proposed changes necessitate it, the FRA Regional Administrator could, for example, require the railroad applicant to modify its operating rules and practices to specifically address safety concerns arising from the proposed modification.

Prior to 2014, four waivers were approved similar to 235.6, specifically FRA-2010-0159 for BNSF, FRA-2010-0160 for CSX, FRA-2012-0008 for PATH and FRA-2012-0049 for UP. These waivers provide relief from the requirements of 49 CFR § 235.5-Changes requiring the filing of an application. Specifically, when a railroad makes changes in relation to the implementation of PTC, the waiver permits the changes to be treated similar to those addressed in 49 CFR § 235.7(c)(24)(vi), which permits signal modifications associated with the conversion of pole line circuits to electronic (coded) track circuits with FRA regional oversight. The conditions for these waivers include that the railroad shall provide notice of the planned work, including a profile plan indicating existing conditions with the proposed changes clearly identified, to the FRA regional office (for approval) of the region in which the work is to be performed, at least 60 days prior to the planned work, as well as provide this information to representatives of employees responsible for maintenance, inspection and testing of the involved signal system. Of these waivers, the CSX waiver was extended in 2015. The other waivers have expired. The waivers are provided as an attachment to this letter for reference.

2. NTSB requests all correspondence, letters, e-mails, etc., regarding signal suspensions and signal modifications in relation to the installation of PTC by any FRA region.

A railroad may seek expedited approval from the appropriate FRA Regional Administrator of a signal system modification directly associated with the implementation of a PTC system under 49 CFR § 235.6. As discussed in our response to question 1 above, these applications are not specifically required to include details relating to temporary signal suspensions related to PTC installation and FRA does not individually approve or disapprove the details of any

planned temporary signal suspension that might be part of a railroad's overall signal system modification.

For context, however, FRA has received hundreds of requests for approval under 49 CFR § 235.5, 49 CFR § 235.6, and 49 CFR § 235.7 for changes in relation to the implementation of PTC. FRA is providing a copy of CSX Transportation, Inc.'s, application for approval of its planned signal system modifications in the vicinity of the Cayce, SC accident.

3. NTSB requests all docket numbers regarding signal suspensions and signal modifications in relation to the installation to PTC by any FRA region.

As discussed above, applications under § 235.6 are not specifically required to include details relating to temporary signal suspensions. Additionally, applications under § 235.6 are not subject to the Notice requirements in 49 CFR § 235.14 and are not published in the Federal Register. As noted in response to question 1, above, however, paragraph (b)(2) of § 235.6 requires railroads, simultaneously with filing an application under § 235.6 with the FRA Regional Administrator, to serve, either by hard copy or electronically, a copy of the notice and profile plan to representatives of employees responsible for maintenance, inspection, and testing of the affected signal system under part 236 of this chapter, as well as representatives of employees responsible for operating trains or locomotives in the affected territory.

FRA also notes that approved applications under § 235.6 are not waivers of FRA's regulations.

4. NTSB requests a legal interpretation of 49 CFR § 235.5(a)(1) as to why operating trains in manual block system during signal suspension of any length of time would not constitute a violation of 49 CFR § 235.5(a)(1) during signal modification in relation to the implementation of PTC without filing an application of discontinuance.

As noted above, in the context of part 235, "discontinuance" means "the cessation of an S&TC system on track that remains in service for any railroad operations." Temporary signal suspensions are often an essential component of routine signal system maintenance and signal system upgrades, so FRA does not consider a temporary signal suspension conducted as part of a signal system modification to be a separate discontinuance that requires prior FRA approval. Given the fact that signal system modifications involve material changes to the signal system, as opposed to routine signal system maintenance, railroads are generally required by 49 CFR § 235.5(a)(3) to seek prior FRA approval of a signal system modification. However, even if the proposed signal system modification fits within one of the specific exceptions set forth in 49 CFR § 235.7(c), and therefore would not require prior FRA approval, FRA would not require the railroad to treat the temporary signal suspension portion of the modification as a separate discontinuance requiring prior FRA approval. For example, the installation of a cab signal system in an existing automatic block or traffic control system, which is specifically addressed in 49 CFR § 235.7(c)(4), requires temporary suspension of the existing signal system. However, FRA would not consider that portion of the signal system modification which involves temporary suspension of the existing signal system to be a separate discontinuance requiring prior FRA approval.

5. NTSB requests the FRA provide their legal opinion as to what constitutes the difference between a signal system suspension and a discontinuance of a signal system.

FRA considers the permanent removal of an existing signal system (when conducted independent of a signal system modification) to be a discontinuance. FRA has defined the term “discontinuance” as “the cessation of an S&TC system on track that remains in service for any railroad operations.” *See* 43 Fed. Reg. 58100, 58102 (Dec. 12, 1978). Therefore, if a railroad intends to permanently remove its signal system, FRA would consider the permanent removal to be a discontinuance.

When the expedited application/approval process in 49 CFR § 235.6 was added to 49 CFR part 235, FRA received a comment from Amtrak requesting clarification on whether FRA intended to allow the removal of signal systems without approval under 49 CFR part 235. FRA responded by confirming “[t]he language of § 235.6 authorizes this expedited procedure only for modifications, and not for discontinuances or decreases of limits. Accordingly, a railroad may not use the process defined in [§ 235.6] for the removal of an entire signal system.” *See* 79 Fed. Reg. 49693, 49698 (Aug. 22, 2014).

49 CFR § 235.7(a)(4) contains an exception to the application requirements in 49 CFR § 235.5 for discontinuances that involve the temporary removal of a signal system from service, as opposed to the permanent removal of an entire signal system.² If a railroad intends to remove its signal system from service for a significant period of time (i.e., over six months) in response to a catastrophic occurrence such as derailment, flood, fire, or hurricane, FRA would consider the removal from service to be a discontinuance if the railroad does not intend to make a material modification to the signal system while the system is out of service.

However, if the railroad intends to temporarily remove a portion of its existing signal system from service, in conjunction with a signal system modification, FRA would consider the proposed signal system project to be a signal system modification. Unless the signal system modification fits within one of the exceptions set forth in 49 CFR § 235.7(c), the railroad would be required to obtain prior FRA approval of the proposed modification. In addition, the temporary removal of a portion of the existing signal system from service would be considered part of the proposed signal system modification. As such, FRA would deem the temporary removal of a portion of the existing signal system from service, when conducted as part of a signal system modification, to be a temporary signal suspension that does not require separate FRA approval.

6. NTSB requests FRA to provide their legal interpretation of 49 CFR § 235.6 as to why signal suspensions in relation to the implementation of PTC are in compliance with 49 CFR § 235.6(c). *See* 49 CFR 235.6 below.

§235.6 Expedited application for approval of certain changes.

(a) Qualifying changes. A railroad may seek approval under this section, instead of under §§235.5 and 235.9-235.20 of this chapter for the following changes:

²49 CFR § 235.7(a)(4) contains an exception to the requirement in 49 CFR § 235.5(a)(1) to obtain prior FRA approval for discontinuances that involve the removal from service for less than 6 months of a block signal system, interlocking, or traffic control system and are necessitated by catastrophic occurrence such as derailment, flood, fire, or hurricane.

(1) Modification of a signal system consisting of the installation, relocation, or removal of one or more signals, interlocked switches, derails, movable-point frogs, or electric locks in an existing system directly associated with the implementation of positive train control pursuant to subpart I of part 236 of this chapter; if the modification does not include the discontinuance or decrease of limits of a signal or train control system.

(2) [Reserved]

(b) Procedure of expedited application. (1) To seek approval under this section, a railroad shall provide a notice and profile plan for the proposed modification to the FRA Regional Administrator having jurisdiction over the affected territory.

(2) Simultaneously with its filing with the FRA Regional Administrator, the railroad shall serve, either by hard copy or electronically, a copy of the notice and profile plan to representatives of employees responsible for maintenance, inspection, and testing of the affected signal system under part 236 of this chapter, as well as representatives of employees responsible for operating trains or locomotives in the affected territory.

(3) The railroad shall include in its submission to the FRA Regional Administrator a statement affirming that the railroad has complied with the requirements of paragraph (b)(2) of this section, together with a list of the names and addresses of the persons served.

(4) In response to receipt of a notice and profile plan under paragraph (b)(1) of this section, the Regional Administrator shall in writing deny or approve, in full or in part, and with or without conditions, the request for signal system modification. For any portion of the request that is denied, the Regional Administrator shall refer the issue to the Railroad Safety Board as an application to modify the signal system.

(5) A railroad may rescind its application to the Regional Administrator and submit an application under §§235.5 and 235.9-235.20 of this chapter at any time prior to the decision of the Regional Administrator.

(c) The resultant arrangement of any change under this section shall comply with part 236 of this chapter.

Title 49 CFR § 235.6 provides a simplified process for railroads to obtain FRA approval to modify existing signal systems directly associated with PTC system implementation. When this provision was added to 49 CFR part 235, FRA explained that it was being added in recognition of the fact that, "... during the process of installing the wayside PTC equipment, the railroads may have the resources and time available to implement needed or desired wayside signal system upgrades." See 79 Fed. Reg. 49693, 49698 (Aug. 22, 2014).

Title 49 CFR § 235.6(c) requires that the resultant arrangement of any change or modification to an existing signal system approved under the section comply with FRA's signal regulations in 49 CFR part 236. In other words, when the modification to an existing signal system is complete, the modified signal system must comply with 49 CFR part 236. This provision does not, however, require that the signal system comply with the requirements set forth in 49 CFR part 236 while the signal system modification is being conducted.

Nonetheless, as noted above, 49 CFR § 235.6 authorizes the relevant FRA Regional Administrator to impose conditions on any approval under that section. Thus, as noted above, if the circumstances of the proposed changes necessitate it, the FRA Regional Administrator could, for example, require the railroad applicant to modify its operating rules and practices to specifically address safety concerns arising from the non-compliant condition of the signal system while the signal system modification is being conducted.

Thank you for your cooperation. I look forward to working with you and the FRA in connection with this accident. If you have any questions you may contact me at [REDACTED] or via phone at [REDACTED] or you may contact the IIC Richard Hipskind at [REDACTED]

Respectfully,
RE Page
RR Accident Investigator
NTSB