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U.S. DEPARTMENT OF TRANSPORTATION**

**BEFORE THE
UNITED STATES SENATE
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION**

“Next Steps for Positive Train Control Implementation”

July 31, 2019

Chairman Wicker, Ranking Member Cantwell, Members of the Committee,

Thank you for the opportunity to testify today about one of the Federal Railroad Administration’s (FRA) highest priorities—the railroad industry’s full implementation of FRA-certified and interoperable positive train control (PTC) systems on all required main lines as soon as possible, and not later than December 31, 2020.

First, FRA commends the railroad industry for its significant progress toward fully implementing PTC systems where required nationwide. As of June 30, 2019, PTC systems were in operation on approximately 50,300 (87%) of the nearly 58,000 route miles subject to the statutory mandate, based on certain preliminary reports about railroads’ progress as of Quarter 2 of 2019.¹ This represents a 4% increase in implementation since Quarter 1 of 2019. In addition, railroads are currently testing PTC systems in advanced field testing, known as revenue service demonstration (RSD), on at least 718 route miles as of June 30, 2019.² Nonetheless, railroads must still complete significant work to fully implement their PTC systems by December 31, 2020,

¹ Railroads’ Quarterly PTC Progress Reports for Quarter 2 of 2019 are due by **July 31, 2019**. See Form FRA F 6180.165, Office of Management and Budget Control No. 2130-0553. In August 2019, FRA expects to publish updated infographics on its website (<https://www.fra.dot.gov/ptc>), summarizing railroads’ progress toward fully implementing PTC systems as of Quarter 2 of 2019.

² RSD is the stage of implementation when FRA conditionally permits a railroad to operate PTC-equipped trains in revenue service with passengers or freight onboard under certain testing conditions, prior to obtaining certification of their PTC systems from FRA.

especially with respect to activating PTC systems on the remaining required main lines and achieving the necessary interoperability with their tenant railroads.

I. Overview of the Statutory Mandate

A. Background

As the Rail Safety Improvement Act of 2008 first mandated, each Class I railroad and each entity providing regularly scheduled intercity or commuter rail passenger transportation must implement an FRA-certified PTC system on: (1) its main lines over which poison- or toxic-by-inhalation hazardous materials are transported, if the line carries five million or more gross tons of any annual traffic; (2) its main lines over which intercity or commuter rail passenger transportation is regularly provided;³ and (3) any other tracks the Secretary of Transportation prescribes by regulation or order.⁴

By law, PTC systems must be designed to prevent certain accidents or incidents, including train-to-train collisions, over-speed derailments, incursions into established work zones, and movements of trains through switches left in the wrong position.⁵ Railroads are primarily implementing the following PTC systems in the United States: (1) the Interoperable Electronic Train Management System (I-ETMS), which Class I railroads and many commuter railroads are

³ In January 2010, FRA issued its first final PTC rule, defining the term “main line” for purposes of “intercity . . . or commuter rail passenger transportation routes or segments over which limited or no freight railroad operations occur,” which the statutory PTC mandate specifically required FRA to define by regulation. *See* Title 49 United States Code (U.S.C.) § 20157(i)(4)(B), as implemented by Title 49 Code of Federal Regulations (CFR) §§ 236.1003, 236.1019. Since January 2010, Amtrak and other railroads have requested “main line track exceptions” covering only 3.8% of the main lines otherwise subject to the statutory mandate. Despite any earlier requests for exceptions, railroads may still implement PTC systems on these track segments, and Amtrak recently committed to implementing a PTC system on its Post Road Branch in New York, potentially in addition to other lines for which Amtrak or its host railroads previously sought an exception by law.

⁴ Rail Safety Improvement Act of 2008, Pub. L. No. 110-432, § 104(a), 122 Stat. 4848 (Oct. 16, 2008), as amended by the Positive Train Control Enforcement and Implementation Act of 2015, Pub. L. No. 114-73, 129 Stat. 568, 576–82 (Oct. 29, 2015) and the Fixing America’s Surface Transportation Act, Pub. L. No. 114-94, § 11315(d), 129 Stat. 1312, 1675 (Dec. 4, 2015) (codified as amended at 49 U.S.C. § 20157). *See also* 49 CFR part 236, subpart I.

⁵ *See, e.g.*, 49 U.S.C. § 20157(g)(1), (i)(5); 49 CFR § 236.1005 (setting forth the technical specifications).

implementing; (2) the Advanced Civil Speed Enforcement System II (ACSES II), which most railroads operating on the Northeast Corridor (NEC) are implementing; (3) Enhanced Automatic Train Control (E-ATC), which six intercity passenger or commuter railroads are implementing; and (4) the Incremental Train Control System, which Amtrak is implementing in parts of Michigan.

B. The Statutory 2018 and 2020 Deadlines and the Requirements for Compliance

On October 29, 2015, the Positive Train Control Enforcement and Implementation Act of 2015 (PTCEI Act) extended the original statutory deadline for full implementation of PTC systems from December 31, 2015, to at least December 31, 2018.⁶ In addition, the PTCEI Act permits railroads to utilize an “alternative schedule and sequence” with a full implementation deadline beyond December 31, 2018, but not later than December 31, 2020.

Notably, four host railroads subject to the statutory mandate—North County Transit District, the Port Authority Trans-Hudson, Portland & Western Railroad (including its commuter tenant railroad, Tri-County Metropolitan Transportation District of Oregon), and the Southern California Regional Rail Authority (Metrolink)—reported that they fully implemented an FRA-certified and interoperable PTC system on all their required main lines by December 31, 2018.

The other 37 railroads that were directly subject to the statutory mandate in 2018 formally requested an alternative schedule and sequence (in some cases jointly with their host railroads), establishing a final deadline that they certified was as soon as practicable and not later than December 31, 2020. As background, the PTCEI Act *required* FRA to approve a railroad’s alternative schedule and sequence within 90 days of receipt of the railroad’s request, if the railroad

⁶ 49 U.S.C. § 20157(a). Please note that the PTCEI Act also required FRA to extend each deadline under 49 CFR § 236.1006(b)(4)(iii)(B) by three years, related to equipping certain Class II and Class III railroads’ locomotives that operate in PTC territory. *See* 49 U.S.C. § 20157(k); 81 Fed. Reg. 10126 (Feb. 29, 2016).

demonstrated it met the six statutory criteria necessary to qualify for an alternative schedule and sequence.⁷

As of March 5, 2019, FRA approved all applicable requests for an alternative schedule and sequence, as each railroad sufficiently demonstrated it, at a minimum, met the six statutory criteria necessary to qualify for an alternative schedule and sequence under the statutory mandate. FRA issued each decision in advance of the PTCEI Act's 90-day decision deadline and, on average, within 66 days of receipt of a railroad's request. The 33 requests encompassed supporting documentation submitted on behalf of 37 railroads, including certain tenant-only commuter railroads. Specifically, these 37 railroads sufficiently demonstrated that, as of December 2018, they each:

1. Installed all hardware that must be installed for PTC system implementation, consistent with the governing railroad's PTC Implementation Plan (PTCIP);
2. Acquired all spectrum necessary for implementation of a PTC system, if applicable, consistent with the governing railroad's PTCIP;
3. Completed the employee training required under FRA's PTC regulations for all applicable personnel in any territory, or segment thereof, where the PTC system was presently being field tested or operated in RSD or revenue service;
4. (A) For Class I railroads and Amtrak, implemented a PTC system or initiated RSD on most territories (e.g., subdivisions or districts) or route miles the railroad owns or controls that are required to have operations governed by a PTC system; or
(B) For other railroads subject to the statutory mandate, the railroad initiated RSD on at least one PTC-required territory, or met any substitute criteria established by FRA;
5. Included in the revised PTCIP an alternative schedule and sequence for fully implementing a PTC system as soon as practicable, but not later than December 31, 2020; and
6. Certified to FRA in writing that the railroad will be in full compliance with the requirements of the statutory mandate on or before the deadline in the proposed alternative schedule and sequence.

⁷ 49 U.S.C. § 20157(a)(3)(C) (using the term "shall").

With all necessary PTC system hardware installed, spectrum acquired, and testing having been initiated as of December 31, 2018, the key remaining steps for full implementation of PTC systems generally include conducting RSD of uncertified PTC systems on the general rail network or expanding RSD to additional required main lines, submitting a PTC Safety Plan and obtaining PTC System Certification from FRA (host railroads only), achieving interoperability between host railroads and tenant railroads, and activating the PTC system so it governs all operations on the required main lines.

II. The Railroad Industry's Progress Toward Full Implementation of PTC Systems

Railroads' mandatory Quarterly PTC Progress Reports for Quarter 2 of 2019 must be submitted to FRA by July 31, 2019. Information FRA preliminarily received indicates that approximately 87% of the required main lines (i.e., 50,300 of the nearly 58,000 required route miles) were governed by a PTC system as of June 30, 2019.

Specifically, Class I railroads recently informed FRA that PTC systems were in operation on approximately 91% of their required main lines as of June 2019—that is, on 48,945 of the 53,756 required route miles that are owned or controlled by Class I railroads—representing a 4% increase since Quarter 1 of 2019.

As of June 2019, host commuter railroads were reportedly operating PTC systems in revenue service on 443 route miles and in RSD testing on approximately 718 route miles, which, in total, is 37% of the host commuter railroads' 3,111 required route miles and a 12% increase since Quarter 1 of 2019. Amtrak, as a host railroad on and near the NEC and other parts of the country (including Chicago and Michigan), reports that approximately 899 of Amtrak's 900 required route miles are governed by a PTC system as of June 2019. In addition, Amtrak has stated that its operations are currently governed by a PTC system on approximately 16,032 of the 19,119

route miles (84%) where Amtrak operates as a tenant railroad on other railroads' PTC-equipped main lines.

Also, pursuant to the statutory mandate, six Class II or III, short line, or terminal railroads must implement PTC systems on their own main lines that provide or host regularly scheduled intercity or commuter rail passenger transportation. One of these six railroads has been operating its FRA-certified and interoperable PTC system in revenue service since 2018, and the other five railroads are currently conducting FRA-approved field testing of their PTC systems on the general rail network and largely planning to commence RSD during Quarter 3 of 2019.

In terms of railroads' progress toward achieving PTC system interoperability, host railroads reported that 17% of the tenant railroads that operate on their PTC-required main lines had achieved interoperability as of March 31, 2019. In addition, host railroads also specifically reported that 33% of their applicable tenant railroads were currently installing necessary PTC system hardware (e.g., on the tenant railroads' controlling locomotives), and 38% had advanced to the interoperability testing stage, as of March 31st.

III. FRA's Initiatives to Assist with Major Remaining Challenges

With approximately 17 months remaining until the statutory deadline, FRA will continue to perform comprehensive oversight, provide extensive technical assistance to all applicable host railroads and tenant railroads, and hold each railroad accountable for the timely implementation of an interoperable PTC system on all main lines subject to the statutory mandate.

FRA is currently directing its focus and resources to the PTC-mandated main lines that have a high concentration of host railroads and tenant railroads, including commuter railroads with significant remaining work, such as the PTC-mandated main lines in the Northeast, Chicago area, Florida, and Texas. For example, on July 12, 2019, I initiated a series of not-less-than monthly

meetings with the executive leadership of Amtrak and each commuter railroad that operates on or near Amtrak's NEC and/or the commuter railroad's own PTC-mandated main lines in the Northeast. FRA is committed to continuing to help facilitate railroads' collaboration, expeditious resolution of remaining issues, and full implementation of interoperable PTC systems on all required main lines throughout the country.

A. Achieving Interoperability Among Required Railroads

Under the statutory mandate, "interoperability" is the requirement that the controlling locomotives and cab cars of any host railroad *and* tenant railroad operating on the same main line will communicate with and respond to the PTC system, including uninterrupted movements over property boundaries.⁸

Interoperability, given its scope and complexity, remains one of the primary challenges to railroads' full implementation of PTC systems by December 31, 2020. Approximately 101 distinct tenant railroads operate on PTC-mandated main lines, according to host railroads' current PTCIPs. Because many railroads operate on multiple host railroads subject to the statutory mandate, there are approximately 227 host-tenant railroad relationships in which PTC system interoperability must be achieved by December 31, 2020. As noted above, 17% of the applicable tenant railroads have already achieved PTC system interoperability (as 38 tenant railroads were reported as PTC-operational by March 31, 2019), and an additional 38% (87 tenant railroads) were reportedly conducting interoperability testing as of Quarter 1 of 2019. FRA is optimistic that railroads' Quarterly PTC Progress Reports for Quarter 2 of 2019, due today, July 31st, will show continued advancement toward interoperability.

⁸ Except a railroad's controlling locomotives or cab cars that are subject to either a temporary or permanent exception under 49 U.S.C. § 20157(k) or 49 CFR § 236.1006, consistent with the applicable host railroad's PTC Implementation Plan. See 49 U.S.C. § 20157(a)(2)(A)(i)(I), (a)(2)(D), (i)(3); 49 CFR §§ 236.1003, 236.1006, 236.1011(a)(3).

As support, during FRA's June and July 2018 PTC Symposia, FRA provided technical assistance to all host railroads about the statutory and regulatory interoperability requirements, including any exceptions, and best practices for interoperability testing between host railroads and tenant railroads. In July 2018, FRA also issued a revised and simplified guidance document that addresses interoperability testing and the responsibilities of a host railroad and its tenant railroads with respect to a host railroad's PTC Safety Plan and FRA's certification of PTC systems.⁹

In terms of ongoing assistance during 2019, FRA recently engaged with each Class I railroad and several NEC railroads to help validate the list of PTC-required tenant railroads. To help ensure that tenant railroads also understand the statutory and regulatory requirements, FRA commenced a significant interoperability initiative in April 2019 by sending a letter to each freight, non-Class I tenant railroad¹⁰ that operates on at least one main line that is subject to the statutory PTC mandate, according to their host railroads' current PTCIPs. FRA's letters to these tenant railroads provided an overview of the interoperability requirements, emphasized the importance of timely PTC system implementation, and invited them to meet with FRA in Washington, DC, this summer.

From late May to early August of 2019, I, as the FRA Administrator, and FRA's PTC subject matter experts have been meeting individually with each tenant railroad's executive leadership and PTC program manager to offer technical assistance and discuss any challenges the tenant railroad might currently be experiencing with respect to PTC system implementation. In addition, FRA will host the remaining four of six PTC Collaboration Sessions over the next 17

⁹ FEDERAL RAILROAD ADMINISTRATION, Revised PTC Guidance Regarding Interoperability Testing, Operations and Maintenance Manuals, and Certification Responsibilities (July 24, 2018), *available at* https://www.fra.dot.gov/eLib/details/L19583#p1_z5_gD_IPO.

¹⁰ This encompasses Class II, Class III, short line, switching, terminal, and regional tenant railroads that operate on PTC-mandated main lines.

months to further support all railroads subject to the statutory mandate and to convene the industry's technical experts to share best practices and jointly resolve common technical problems.

B. PTC System Vendors and Suppliers

Another predominant challenge that railroads commonly convey is that the limited number of PTC system vendors and suppliers are significantly resource-constrained, as they are serving all 42 railroads¹¹ subject to the statutory mandate and all their tenant railroads. For example, several railroads specifically cited vendors' or suppliers' schedule delays and technical issues as a reason initiation of RSD was infeasible by December 31, 2018, and utilizing substitute criteria (often an earlier phase of field testing) was therefore necessary to qualify for an alternative schedule by law.¹²

In March 2018, FRA sent a letter to each of the 10 major PTC system vendors and suppliers to underscore the critical role they play in ensuring that railroads fully implement FRA-certified and interoperable PTC systems in a timely manner. In addition, during the spring of 2018, FRA's PTC subject matter experts and I met individually with each of these PTC system vendors and suppliers. These meetings covered challenges they are experiencing; risks they foresee with respect to railroads' timely implementation of PTC systems; and their plans to expedite delivery of PTC system products, components, and other services to ensure railroads' compliance with both the 2018 requirements under the PTCEI Act and the final statutory December 31, 2020, deadline for full PTC system implementation.

¹¹ A 42nd railroad, TEXRail, is now subject to the statutory mandate given its commencement of commuter rail operations during 2019. TEXRail's FRA-approved PTCIP, dated February 13, 2019, provides that it shall implement a PTC system by December 31, 2020, on its applicable main lines.

¹² FRA generally meets with the 13 railroads that utilized substitute criteria monthly, if not weekly, to discuss testing progress and actively address any challenges or technical issues they have encountered. Such regular meetings help facilitate these railroads' advancement toward RSD. Also, 6 of the 13 railroads that utilized substitute criteria have since initiated FRA-approved RSD on at least one main line subject to the statutory mandate as of June 2019.

Based on information FRA learned during its meetings with the 10 major PTC system vendors and suppliers during 2018, FRA found that approximately 10 percent of the contracts between railroads and the major PTC system vendors and suppliers were initiated before the 2008 enactment of the statutory mandate; approximately 48 percent of contracts were initiated from 2008 to 2014; and approximately 42 percent were initiated from 2015 to 2018. Accordingly, over time and under constricted deadlines, PTC system vendors and suppliers have experienced increased demand for the services they offer, which are essential to the railroad industry's full implementation of PTC systems.

In October 2018, FRA also held a second series of one-on-one meetings with the vendors and suppliers that mainly support the host railroads that had made less progress toward implementing their PTC systems as of that point. The vendors and suppliers stressed that they prioritize railroads' compliance with the statutory mandate, including interim requirements, and they direct additional resources to railroads that are at risk of noncompliance.

FRA continues to actively engage and meet with the major PTC system vendors and suppliers. For example, in March 2019, I sent letters to two PTC system suppliers to underscore issues that require their immediate attention. These letters stressed the importance of: (1) a supplier's prompt resolution of certain capacity limitations hindering several I-ETMS railroads from conducting robust interoperability testing and achieving interoperability; and (2) another supplier's full and complete resolution of issues surrounding a major recall of certain ACSES II equipment, due to certain manufacturing defects and ongoing quality concerns.

IV. Industry Cost Estimates and the Department's Grants and Financial Assistance

In addition to providing technical assistance and oversight, the Department of Transportation (the Department)—including FRA, the Federal Transit Administration, and the

Build America Bureau—supports railroads’ implementation of PTC systems by providing financial assistance. The railroad industry has estimated that initial costs associated with fully implementing PTC systems will exceed \$14.7 billion in total, including approximately \$4.1 billion in implementation costs for commuter railroads, according to the American Public Transportation Association (APTA).¹³ The industry also estimates that ongoing operations and maintenance costs post-full implementation will likely be substantial, with APTA citing an estimated “\$80 to \$130 million a year in maintenance and operation costs,”¹⁴ and the Association of American Railroads reporting in 2017 that “hundreds of millions of additional dollars [will be] needed each year . . . to maintain the system.”¹⁵

Since 2008, through FRA, the Department has awarded over \$2.5 billion in grant funding and loan financing to support railroads’ implementation of PTC systems, which amounts to nearly 18% of the industry’s estimates for initial PTC system implementation costs. Also, more specifically, through FRA, the Department has awarded commuter railroads PTC grant funding and loan financing for approximately 42% of APTA’s estimated \$4.1 billion in initial implementation costs. The Department appreciates Congress’s prioritization of rail safety and the continued funding it provides to support railroads’ implementation of PTC systems.

V. Enforcement of the Statutory Mandate

As I previously committed to this Committee in 2018, FRA will continue to hold railroads accountable for timely implementation of PTC systems and will enforce the statutory mandate, including interim requirements and the December 31, 2020, deadline.

¹³ See AMERICAN PUBLIC TRANSPORTATION ASSOCIATION, *Commuter Rail and Positive Train Control: Fact Sheet*, at 2, http://ptcfacts.com/wp-content/uploads/2019/03/PTC_FactSheet_2019Update_v3.pdf.

¹⁴ See *id.*

¹⁵ See ASSOCIATION OF AMERICAN RAILROADS, *Positive Train Control*, at 2 (March 2017).

The three acts of federal legislation governing railroads' implementation of PTC systems specifically authorize FRA, by delegation, to assess civil penalties for any violations of the statutory mandate. Consistent with FRA's commitment to helping ensure railroads comply with the statutory mandate, FRA continues to monitor railroads' compliance with the implementation schedules in their PTCIPs, and FRA has assessed nearly \$400,000 in civil penalties since 2017 to railroads that failed to meet interim implementation requirements in a timely manner.¹⁶

As FRA Administrator, I have stated that if any required railroad fails to fully implement an FRA-certified and interoperable PTC system on its required main lines by the applicable statutory deadline (in most cases, December 31, 2020), I will recommend that FRA assess the ordinary statutory maximum civil penalty against the railroad, which is currently \$28,474 per day. FRA also continues to reserve the right to initiate any other type of enforcement action within its authority, if necessary to compel a railroad's compliance, in addition to the assessment of civil penalties.

FRA also acknowledges, however, that the statutory mandate generally prohibits FRA from imposing or enforcing the operational restrictions (e.g., speed restrictions) under FRA's current regulations against *any* railroad until approximately January 1, 2022.¹⁷

FRA will continue to work diligently and collaboratively with all stakeholders, including railroads, railroad associations, and PTC system vendors and suppliers, to help ensure all railroads subject to the mandate fully implement FRA-certified and interoperable PTC systems as expeditiously and safely as possible.

I appreciate the Committee's interest in promoting safe, reliable, and efficient rail transportation in the United States and, particularly, your assistance in helping ensure that railroads

¹⁶ See 49 U.S.C. § 20157(a)(2)(D), (e).

¹⁷ See 49 U.S.C. § 20157(j).

fully implement this rail-safety technology in a timely manner. Thank you, Mr. Chairman, for the opportunity to testify. I am happy to answer any questions.