

IMPLEMENTATION OF POSITIVE TRAIN CONTROL

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

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OCTOBER 3, 2018
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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

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IMPLEMENTATION OF POSITIVE TRAIN CONTROL

WEDNESDAY, OCTOBER 3, 2018

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 10:08 a.m., in room SR-253, Russell Senate Office Building, Hon. John Thune, Chairman of the Committee, presiding.

Present: Senators Thune [presiding], Blunt, Fischer, Moran, Inhofe, Sullivan, Capito, Gardner, Young, Nelson, Cantwell, Klobuchar, Blumenthal, Markey, Udall, Duckworth, Hassan, Tester, and Cortez Masto.

OPENING STATEMENT OF HON. JOHN THUNE, U.S. SENATOR FROM SOUTH DAKOTA

The CHAIRMAN. Good morning. We convene today's hearing at a critical time for Positive Train Control, or PTC implementation. We're approximately three months away from the December 31, 2018, statutory deadline for implementation. The recent report suggests some railroads may not meet their legal obligations by the end of the year. Specifically, according to the Federal Railroad Administration's most recent quarterly progress report, nine commuter railroads were at risk of not meeting the minimum statutory criteria required to qualify for an extension by the end of the year.

The Positive Train Control Enforcement and Implementation Act, passed by Congress and signed into law by President Obama in October 2015, extended the original deadline of December 31, 2015, amid reports that no railroad could meet the deadline and many railroads were contemplating halting passenger rail service or shipments of essential supplies for agricultural production and water purification. This committee, on a bipartisan basis, took action to avert a rail shutdown and set a realistic framework for implementation.

The law now requires railroads to implement PTC by December 31, 2018, but it allows a railroad to apply for an extension of up to 24 months to ensure PTC works as intended if, and only if, that railroad meets important milestones, like full PTC hardware installation, spectrum acquisition, and employee training, and meets other milestones, such as implementing PTC on a specific territory or initiating revenue service demonstration. For Class 1 freight railroads and Amtrak, the bar is higher. PTC must be implemented or in revenue service demonstration on a majority of the required territories or route miles.

Since March 2018, under Administrator Batory's leadership, railroads have made significant progress in PTC implementation, which is an enormously complex undertaking. As of June 30, the end date for the most recent progress report, freight railroads had 93 percent of locomotives equipped and PTC-operable, and passenger railroads had completed 73 percent of their locomotive installation.

With respect to radio towers, freight railroads have installed 99 percent of necessary radio towers, and passenger railroads have installed 91 percent, an increase of nearly 20 percent for passenger railroads in just the last quarter. Overall, 66 percent of freight route miles were in PTC operation as of June 30, and 24 percent of passenger route miles were in PTC operation.

There's clearly more work to do, but Administrator Batory has been instrumental in stepping up FRA's oversight of PTC implementation. Since the beginning of the year, FRA has met individually with executives from each of the 41 railroads required to implement PTC, applying direct oversight, railroad by railroad. FRA also has met individually with the major PTC system component suppliers, has held three symposia to share best practices and expectations with regulated entities, and awarded over \$200 million in grant funding for PTC implementation, pushing the total Federal support to well over \$3 billion.

As I stated in February, FRA should have had a confirmed Administrator, especially one as qualified as Mr. Batory, much sooner. We owed it to the traveling public to do everything we could to help eliminate future collisions. However, I am pleased to say that Administrator Batory was confirmed, despite over 6 months of obstruction, and his leadership has made a difference for successful implementation.

With that said, there continue to be railroads at risk of not qualifying for an extension at the end of the year, and that is a major focus of today's hearing. If commuter railroads do not meet the requirements of the law by the end of the year, we must understand any effects this may have on the many riders who rely on rail service to commute to work, see family members, or visit a doctor. We also need to have a clear picture of FRA's enforcement strategy for entities that may not comply with the law.

Finally, this hearing will provide an opportunity to examine the path to full implementation, whether it is working through complex interoperability challenges between railroads or FRA's reviewing final safety plans.

This morning, we will be hearing from a panel of witnesses that have great expertise in Positive Train Control and who can provide useful insight into the end-of-year deadline as well as full implementation. So, I want to welcome you, look forward to all of your testimonies.

And we'll now turn to Ranking Member Nelson for any opening remarks that he'd like to make.

Senator Nelson.

**STATEMENT OF HON. BILL NELSON,
U.S. SENATOR FROM FLORIDA**

Senator NELSON. Mr. Chairman, first of all, I'd like to congratulate you on a significant achievement. Today, we will pass the FAA bill. I will have the privilege of speaking just before the vote. Congratulations to your leadership. This is the first 5-year FAA bill since the 1980s, and it will give the certainty to the aviation industry of the policy as set forth specifically by this committee. So, I congratulate you, as well as the Committee, and thank you for having this hearing on Positive Train Control.

Railroads simply must complete the installation of Positive Train Control. Without these safety systems in place, we will continue to see the tragic accidents that could have been avoided. And one such crash occurred in my state. An Amtrak, just this year, traveling to Florida was in a head-on collision with a CSX freight train. That resulted in the death of an engineer and a train conductor from Florida, and more than 100 injured.

Implementing PTC can be expensive and complicated, and there are serious technical challenges involved. But, I also know that many railroads have overcome these challenges. Other railroads continue to struggle, including some in Florida. We, to that end, provided nearly a quarter of a billion dollars in grant funding, in addition to the more than \$2 billion in Federal support that had previously been provided. And that effort was supposed to ensure that PTC would be quickly implemented. But, it's still not the case. Many of us remain concerned that some railroads haven't lived up to their end of the bargain to meet the 2018 deadline. And the Department of Transportation must also be a strong partner in the process. Unnecessary delays of grant funding or agency approval should not be a hurdle to those getting the technology in place. We have a responsibility to learn from the tragedies of past rail accidents and to improve the safety of our rail lines.

I look forward to the hearing.

The CHAIRMAN. Thank you, Senator Nelson. And congratulations, to you and your staff and members on both sides, for getting this FAA bill across the finish line today. That was terrific bipartisan cooperation. And so, thank you, to you and your team and our teams, for getting that done. It's got a lot of very important policy in it, and something that many of us believe is long overdue.

So, we're going to talk about railroads today. So, I want to start by welcoming our panel. And, of course, The Honorable Ronald Batory, who's the Administrator of the Federal Railroad Administration, will lead off, followed by Ms. Susan Fleming, Director of Physical Infrastructure at the Government Accountability Office; Mr. Kevin Corbett, who's Executive Director of NJ Transit; and Mr. Scot Naparstek, Executive Vice President and Chief Operating Officer of Amtrak.

So, we appreciate you being here. We look forward to hearing what you have to say and to interacting with you during question-answers, and would ask you, if you can, to confine your oral statements to as close to 5 minutes as possible, and we'll make sure that any—your entire statements are included in the permanent hearing record.

So, Mr. Batory, welcome. Please proceed.

**STATEMENT OF RONALD L. BATORY, ADMINISTRATOR,
FEDERAL RAILROAD ADMINISTRATION,
U.S. DEPARTMENT OF TRANSPORTATION**

Mr. BATORY. Good morning, everyone. Chairman Thune, Ranking Member Nelson, members of the Committee, thank you for the opportunity to testify today to discuss Positive Train Control, PTC systems.

Secretary Chao and myself have made railroads implementation FRA's top priority. While railroads are making progress, FRA expects that most railroads will need to request an alternative schedule to complete testing, obtain system certification, activate PTC on all required route miles, and meet interoperability requirements.

Since April 2016, FRA has tracked individual railroad self-report implementation on a quarterly basis. Based on railroads' most recent reports as of June 30, PTC systems are in operation on 66 percent of the freight railroads required route miles. Passenger railroads have made less progress, with PTC systems in operation on 24 percent of what is required. Also, as of June 30, PTC systems are in revenue service demonstration on 1,103 freight railroad route miles and 140 commuter railroad route miles.

The most recent data also showed a reduction in the number of railroads FRA considers to be at risk of not qualifying for an alternative schedule from 12 railroads in April 2018 to nine railroads in August of this year. FRA currently considers any railroad that has installed less than 90 percent of its system hardware as of June 30 to be at most risk of failing to qualify for an alternative schedule.

It is important to note that installation of all PTC system hardware is only one of the six criteria required to qualify for an alternative schedule to complete full PTC system implementation after December 31, 2018. FRA is in frequent communication and providing additional onsite technical assistance to further assist these railroads. This summer, and for the first time in agency history, FRA hosted three symposia for the to-be-compliant railroads. Each of the daylong sessions brought together railroad safety officials and FRA's PTC experts to ensure that each railroad subject to the mandate is aware of its obligations and is equipped to meet the deadlines. These meetings discussed industry questions and lessons learned, requirements for the December 31, 2018 deadline, best practices for testing and safety plans.

PTC is designed to provide important risk-reduction protocols to enhance existing safety, but these systems come with significant costs. Since 2008, FRA has awarded approximately \$961 million in grant funds to support railroads implementation. More recently, on August 24, FRA selected 28 PTC projects, including 13 commuter railroads, to receive over \$203 million of the Consolidated Rail Infrastructure and Safety Improvements, CRISI, grant program. Of the \$203.7 million announced, \$80 million in grants, or 39 percent, was announced for at-risk railroads. Since 2008, a total of \$2.5 billion in grants and loans has been allocated to the railroads to assist with PTC implementation.

In an effort to show FRA's continued commitment to PTC implementation, we reissued a Notice of Funding Opportunity for the remaining \$46 million in grants on September 12. Similar to pre-

viously issued NOFO, this is an expedited solicitation, with only a 30-day application period. Applications are due October 12.

Looking forward to the rest of the year and into 2019, FRA will continue to support and facilitate railroads' implementation of PTC, utilizing the tools afforded by Congress and providing extensive technical assistance.

I appreciate the Committee's support for our programs and look forward to your safety-oriented questions.

[The prepared statement of Mr. Batory follows:]

PREPARED STATEMENT OF RONALD L. BATORY, ADMINISTRATOR, FEDERAL RAILROAD
ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION

Chairman Thune, Ranking Member Nelson, and Members of the Committee:

Thank you for the opportunity to testify today and provide the Committee with an update on railroads' implementation of positive train control (PTC) systems.

As we approach critical deadlines for railroads' implementation of PTC systems, myself, and the men and women that serve at FRA remain committed to working with the railroads and its supply industry to ensure the full implementation of this important rail-safety technology in a timely manner.

I. PTC Mandate

Railroads' implementation of PTC systems has been, and remains, at the top of our agenda. PTC systems represent the most fundamental change in rail safety technology since the introduction of Automatic Train Control in the 1920s. As mandated by the Rail Safety Improvement Act of 2008 (RSIA), each Class I railroad and entity providing regularly scheduled intercity or commuter rail passenger service must implement an FRA-certified PTC system on (1) its main lines over which 5 million or more gross tons of annual traffic are transported if the main line carries poison- or toxic-by-inhalation hazardous materials, and (2) its main lines over which intercity or commuter rail passenger transportation is regularly provided. Under RSIA, railroads were originally required to complete implementation by December 31, 2015. Approximately two months before that deadline, the House and Senate overwhelmingly passed, and the President signed, the Positive Train Control Enforcement and Implementation Act of 2015 (PTCEI Act), extending the deadline for full PTC system implementation to December 31, 2018.

In addition, under the PTCEI Act, Congress permits a railroad to request FRA's approval of an "alternative schedule" with a deadline extending beyond December 31, 2018, but no later than December 31, 2020, for full PTC system implementation. The law requires FRA to approve a railroad's alternative schedule with a deadline that is as soon as practicable, but not later than December 31, 2020, if a railroad submits a written request to FRA that demonstrates it has met the statutory criteria to qualify for such an alternative schedule. Currently, 41 railroads are required by statute to implement PTC systems: all 7 Class I freight railroads; 30 commuter and intercity passenger railroads, including the National Railroad Passenger Corporation (Amtrak); and 4 short line and terminal railroads. The technology is required to be implemented on approximately 58,000 route miles of the 140,000-mile railroad network.

While railroads are making progress, FRA expects that most railroads will need to request an alternative schedule to complete testing, obtain PTC System Certification, meet the statutory interoperability requirements, and fully implement PTC systems on all main lines required to be governed by PTC systems. FRA continues to take a proactive approach to help railroads acquire, install, test, and fully implement certified PTC systems as soon as possible.

At the direction of Secretary Elaine L. Chao, FRA senior leadership met individually with executives from each of the 41 railroads in January and February of this year. In May and June, we also held follow-up meetings with the twelve railroads identified as at risk, as of Quarter 1 of 2018, of not meeting the statutory criteria necessary to qualify for FRA's approval of an alternative schedule. Railroads have generally been candid in detailing the challenges and obstacles confronting their properties. During the meetings, we sought to objectively evaluate each railroad's PTC deployment status, and learn what remaining steps each railroad needs to take to meet the deadline or satisfy the statutory criteria necessary to qualify for an alternative schedule.

During these meetings and throughout our conversations with the railroads, they commonly conveyed the following ongoing challenges:

- There is a competitive yet limited number of PTC system vendors and suppliers. Unusually weighted demand and supply has constrained the timely serving of all 41 railroads and their tenant railroads;
- As reliability and stability of PTC systems is still immature, railroads are experiencing significant technical issues with both PTC system hardware and PTC system software that often take considerable time to diagnose and resolve, impacting current operations;
- Host railroads (totaling 36) noted that many tenant railroads (estimated at 250+) that operate on main lines requiring PTC system implementation have made variable, and often unknown, progress equipping locomotives with operational PTC technology, while some tenant railroads report that their host railroads are not providing opportunity for testing. FRA is initiating efforts to synchronize the coordination among the host and tenant railroads;
- Railroads have only recently begun testing PTC systems for interoperability;
- Many commuter railroads stated that negotiating legal agreements with certain vendors and suppliers often took time to complete, given various insurance, liability, and State law issues;
- Absence of consistent leadership at several railroads, regardless of leadership quality, weakened the “sense of urgency” and the focus on PTC system implementation at some entities subject to the statutory mandate; and
- Railroads noted concern about FRA’s review and approval cycle, given the surge in submissions requiring FRA approval in 2018–2020.

By law, it is the railroads’ responsibility to implement PTC systems, but FRA is facilitating railroad and supplier collaboration to hasten, and urge, implementation. We have also met individually with PTC system component suppliers to learn more about their capacity to meet the high demand of railroads to achieve timely implementation.

This summer FRA hosted three PTC symposia for the 41 railroads mandated to implement PTC systems. Each of the day-long sessions brought together railroad safety officials and FRA’s PTC experts to ensure that each and every railroad subject to the mandate is aware of its obligations and is equipped to meet the Congressionally mandated deadline. The first symposium discussed industry questions and focused on requirements for the December 31, 2018 statutory deadline. The second focused on best practices for testing PTC systems on the general rail system, including field testing, revenue service demonstration (RSD), and interoperability testing. The third focused on lessons learned and best practices for PTC Safety Plans, which are required for host railroads to obtain PTC System Certification and achieve full system implementation. As FRA tracks railroads’ progress, additional symposia on PTC may be offered, as new challenges arise.

II. PTC Status Update

Since April 1, 2016, FRA has been closely tracking and displaying on its website individual railroads’ self-reported PTC system implementation status. FRA’s PTC Dashboard tracks railroads’ progress toward full implementation on a quarterly basis, including the number and percentage of locomotives equipped and PTC operable, track segments completed, radio towers installed, training completed, spectrum acquisition, route miles in RSD, whether the railroad has obtained PTC System Certification, route miles in PTC operation, and more recently, interoperability between host railroads and tenant railroads. In addition, FRA tracks, on a quarterly basis, the progress each railroad has made toward meeting the statutory criteria necessary to qualify for FRA’s approval of an alternative schedule.

Based on railroads’ most recent Quarter 2 reports (with data current as of June 30, 2018), PTC systems are in operation on 35,487 route miles, which is approximately 66 percent of the freight railroads’ route miles that are required to be governed by a PTC system. Passenger railroads have made less progress, with PTC systems in operation on 975 route miles, which is approximately 24 percent of the required route miles. Notably, PTC systems are being operated in RSD on an additional 1,103 freight railroad route miles and an additional 140 commuter railroad route miles, as of Quarter 2. Fifteen railroads report they have completed installation of all hardware necessary for PTC system implementation, and twelve other railroads have installed between 95 and 99 percent of the PTC system hardware identified in their PTC Implementation Plans, as of June 30, 2018. All but one railroad, whose PTC systems use spectrum, reported they have acquired sufficient spectrum. In addition, 14 railroads have initiated sufficient RSD or met substitute cri-

teria, which is also one of the six statutory criteria needed to qualify for an alternative schedule.

The most recent data also shows a reduction in the number of railroads at risk of not qualifying for an alternative schedule, from twelve railroads as of Quarter 1 of 2018, to nine railroads as of Quarter 2. FRA generally considers any railroad that had installed less than 90 percent of its PTC system hardware as of June 30, 2018, to be most at risk of failing to qualify for an alternative schedule. Installation of all PTC system hardware is only an initial phase of implementing a PTC system and only one of the six statutory criteria required to qualify for an alternative schedule to complete full PTC system implementation after December 31, 2018.

In addition to the letters of concern from April and June 2018, on approximately August 24th, I sent letters to the following nine railroads that were at risk, as of Quarter 2 of 2018, of both missing the statutory implementation deadline, and failing to qualify for an alternative schedule: Altamont Corridor Express, Capital Metropolitan Transportation Authority, Central Florida Rail Corridor (SunRail), Maryland Area Regional Commuter (MARC), New Jersey Transit, New Mexico Rail Runner Express, Peninsula Corridor Joint Powers Board (Caltrain), South Florida Regional Transportation Authority (Tri-Rail), and Trinity Railway Express. This assessment was based on railroads' self-reported progress as of June 30, 2018 (Quarterly PTC Progress Reports for Quarter 2 of 2018). In September, I also sent similar letters expressing concern to the relevant state departments of transportation and governors.

FRA is working closely with all 41 railroads subject to the PTC mandate, and FRA is actively engaging in frequent communication and providing additional on-site technical assistance to the at-risk railroads. Of course, all railroads subject to the mandate must pay careful attention to the requirements for an alternative schedule if they will not achieve full PTC system implementation by December 31, 2018, and must continue vigilantly working toward prompt PTC system implementation.

As of September 25, 2018, three Class I railroads and one commuter railroad have submitted formal written notifications requesting FRA's approval of an alternative schedule, pursuant to the PTCEI Act's procedural requirements. On September 5, 2018, FRA approved BNSF Railway's request for an alternative schedule, based on its supporting documentation related to the six statutory criteria necessary to qualify for an alternative schedule. FRA is committed to complying with the PTCEI Act's mandated review and decision period, requiring FRA to issue a decision not later than 90 days from receipt of a railroad's written request for FRA's approval of an alternative schedule. In addition, in the interim, within 45 days of receipt of a railroad's written request, the PTCEI Act requires FRA to provide the railroad, if applicable, with: (1) a written notification of any deficiencies that would prevent approval of the railroad's alternative schedule and (2) an opportunity to correct the deficiencies before the 90-day period expires. If a railroad demonstrates it has met all six applicable statutory criteria, under the PTCEI Act, FRA shall approve the railroad's alternative schedule for fully implementing a PTC system as soon as practicable, but no later than December 31, 2020.

FRA has encouraged railroads to submit any formal requests for FRA's approval of an alternative schedule, with the required supporting documentation, as soon as they meet the six statutory criteria and are eligible to submit the formal request required under the PTCEI Act.

III. Grant Funding and Financial Assistance

PTC technology is designed to provide important safety improvements, but these systems come with significant costs, both in terms of immediate acquisition and increased operations and maintenance costs. Industry estimates PTC acquisition will exceed \$14 billion, and maintenance will cost 10 to 20 percent of annual capital costs. Since 2008, FRA has awarded approximately \$961 million in grant funding to support railroads' implementation of PTC systems. FRA also supported the Federal Transit Administration (FTA) with its evaluation and selection of approximately \$197 million in grant funding awarded to 17 commuter and intercity passenger railroads and state and local governments for installation of PTC systems, which were announced on May 31, 2017. More recently, on August 24, FRA selected 28 PTC projects, including 13 commuter rail projects not usually eligible for FRA funding, to receive \$203.7 million under the Fiscal Year 2018 Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant program. Given that applications for this funding were due July 2, I would note that FRA worked tremendously hard to evaluate the applications and make selections. Our hard work allowed us to make the grant announcements two months after receipt of the applications. This process can typically take up to six months or longer to complete.

Currently, FRA has two open funding opportunities that can further aid railroads, states, and other stakeholders with implementing PTC as well as other important safety and infrastructure needs: \$318.4 million under the broader Fiscal Year 2018 CRISI program, and \$46.3 million for the remaining funding under the PTC-specific Fiscal Year 2018 CRISI program, applications for both funding opportunities are due October 12, 2018. And finally, FRA is evaluating applications submitted under the \$65.2 million Fiscal Year 2017 CRISI and \$4.8 million Fiscal Year 2017 Restoration & Enhancements grant programs, and will be making selection announcements in the near future.

In total, the sources of the approximately \$1.16 billion in FRA and FTA grant funding for PTC are:

- \$475 million from FRA's High-Speed Intercity Passenger Rail Grant Program;
- \$197 million in Section 3028 of the Fixing America's Surface Transportation Act (FAST Act) funding;
- \$204 million in CRISI grant funding;
- \$0.3 million in a Special Transportation Circumstances Grant;
- \$142 million in annual capital grant funding to Amtrak;
- \$86 million from FRA's Railroad Safety Technology Grant Program;
- \$52 million in American Recovery and Reinvestment Act grant funding to Amtrak; and
- \$2 million in Research and Development grants.

Additionally, in May 2015, FRA issued a \$967.1 million loan to Metropolitan Transportation Authority for Long Island Rail Road's and Metro-North Railroad's implementation of PTC systems. And on December 8, 2017, the Build America Bureau closed on a \$162 million Transportation and Infrastructure Finance and Innovation Act loan and a \$220 million Railroad Rehabilitation and Improvement Financing loan to be issued to the Massachusetts Bay Transportation Authority for PTC system implementation.

In sum, thanks to the funding provided by Congress, the Department has made available over \$2.5 billion in grants and loans since 2008. This amounts to nearly 20 percent of industry estimates for PTC implementation costs.

IV. Enforcement of the PTC Implementation Mandate

FRA is committed to helping ensure that railroads implement PTC systems as safely and expeditiously as possible, in accordance with the congressional mandate. FRA is authorized to assess monetary civil penalties against any railroad that fails to implement a PTC system by the applicable statutory deadline (either December 31, 2018, or, if a railroad has an approved alternative schedule, the applicable date not later than December 31, 2020). FRA's civil penalty schedule recommends, as guidance, a \$16,000 civil penalty for a failure to timely complete PTC implementation on a track segment where it is required. For any violation of a Federal rail safety statute, regulation, or order, however, the current statutory minimum civil penalty FRA may assess is \$853, and the ordinary statutory maximum is \$27,904. FRA may assess a civil penalty for each day the non-compliance continues, but FRA may elect to take enforcement action on a one-time basis or each month, quarter, year, or other interval of time during which the noncompliance continues. FRA is currently considering all options, within the framework established by law, to determine what type of enforcement action will be most effective and appropriate under the circumstances. Our goal is to ensure any enforcement action compels a railroad to fully implement its PTC system as efficiently and safely as possible.

Also, I would like to note that in June and July 2018, FRA initiated enforcement action against each of the 13 railroads that failed to complete one or more of the end-of-2017 hardware installation milestones and/or spectrum acquisition milestones the railroad established in its PTC Implementation Plan. Consistent with FRA's commitment to ensuring railroads comply with the statutory mandate, including interim requirements, FRA's Notice of Probable Violation to each of the 13 railroads proposed the maximum civil penalty for this type of interim violation—i.e., a one-time civil penalty of \$27,904.

Since this Administration took office, railroads have made significant progress toward installing and implementing PTC systems. From Quarter 1 of 2017 to Quarter 2 of 2018, railroads increased the total amount of installed PTC system hardware from 77 percent to 97 percent. As of June 30, 2018, PTC systems are either in RSD or in operation on approximately 37,705 route miles (i.e., 65 percent) of the nearly 58,000 route miles that are subject to the statutory mandate.

Moving forward, FRA will continue to support and facilitate railroads' implementation of PTC technology by utilizing the tools afforded by Congress and providing extensive technical assistance and guidance to railroads and suppliers. We remain vigilant in harnessing and leveraging all the personnel, financial, and other resources available to help expedite railroads' implementation efforts. We appreciate the Committee's support for our critical programs, and we welcome your continued partnership to advance rail safety and service. I look forward to your questions.

The CHAIRMAN. Thank you, Mr. Batory.
Next up is Ms. Fleming.

**STATEMENT OF SUSAN FLEMING, DIRECTOR,
PHYSICAL INFRASTRUCTURE ISSUES,
UNITED STATES GOVERNMENT ACCOUNTABILITY OFFICE**

Ms. FLEMING. Chairman Thune, Ranking Member Nelson, and members of the Committee, thank you for the opportunity to provide an update on passenger railroads' implementation, and FRA's oversight, of PTC.

As you know, PTC is one of the most promising technological advances in rail safety in decades, and GAO has been closely tracking and reporting on railroads and FRA's PTC efforts since 2010. As I testified in March, our work has shown that progress toward full PTC implementation has been slow. This is particularly true for most of the passenger railroads required to implement PTC, which includes 28 commuter railroads and Amtrak. In light of the many challenges, we have consistently cautioned that some railroads may not meet required deadlines. We are now fast approaching the revised deadline of December 2018 for railroads to either fully implement PTC or seek a maximum extension of up to 2 years. Today, I will focus on passenger railroads' implementation progress and FRA's efforts to assist them, and how passenger railroads and FRA plan to approach PTC implementation to meet the December 2018 and 2020 deadlines.

With respect to railroads' progress, we've found that, while some passenger railroads continue to meet progress, many remained in the implementation stages, meaning equipment installation and initial field testing. As of June, roughly two-thirds of passenger railroads required having installed more than 90 percent of equipment on trains or alongside tracks. FRA uses equipment implementation status to identify railroads at risk of not meeting the 2018 deadline and not qualifying for an extension. Nine railroads still remain on the list.

Regarding testing, since I last testified, Amtrak reported that it has initiated both field testing and the latter stage of testing known as revenue service demonstration, or RSD. Some of the 28 commuter railroads showed progress initiating field testing, with six joining the 13 that already had done so, but only two additional commuter railroads reported initiating RSD, bringing that total to eight.

Initiating RSD is important, for several reasons. First, it allows railroads to test trains operating PTC as part of their regular options. Second, unless commuter railroads receive FRA approval to use substitute criteria, they must initiate RSD by year-end to qualify for an extension. In this regard, FRA's recent clarification about substitute criteria may lessen concerns, at least in the near term, about the 20 passenger railroads that had yet to initiate RSD. Con-

sistent with our March recommendation, FRA held three symposia to discuss its planned approach to extensions. There, FRA officials explained that initiating field testing could potentially qualify as substitute criteria. Railroad representatives we interviewed welcomed this information, as well as FRA's willingness to share lessons learned and provide informal feedback on draft documentation. A few, however, wish FRA had shared this information much sooner.

Turning to this year's deadline, we heard, from most passenger railroads and FRA officials that the focus will be on extensions. Eight passenger railroads anticipate reaching full implementation by December. FRA has already conditionally certified safety plans for most of these railroads. However, even these railroads may or may not achieve full implementation in all route miles by year's end. The remaining 21 railroads told us that they or their hosts plan to apply for an extension. As of September, only one had done so. Of the 12 commuter railroads that said they intend to use substitute criteria, six already had requested and received FRA approval.

For those railroads that fail to meet either year-end requirement, FRA officials said that the levying of potential fines is a yet-to-be-made policy decision and will take into account specific circumstances. Given that applying for an extension appears to be the general approach rather than the exception to the upcoming deadline, much work will need to be accomplished to achieve full PTC implementation in the final two-year window. Many railroads, for example, will need to either initiate or complete field testing. To date, moving from field testing to RSD has taken railroads an average of two years to complete, and about a quarter told us that they had encountered software bugs or other challenges related to the maturity of the system.

Moreover, interoperability remains a great unknown. Almost all railroads share track and, therefore, must ensure PTC interoperability with at least one other railroad. Amtrak shares track with 21. A number of passenger railroads anticipate interoperability challenges, particularly in dense urban areas, where railroads are at—or where railroads are at different stages of implementation.

In turn, the upcoming surge of the submissions will increase FRA's already substantial workload. In anticipation, FRA has already allocated some internal-external resources, but the challenges FRA faces will likely extend throughout the final implementation period. FRA, itself, estimates that each safety plan, alone, can take 6 months to 1 year to review. As such, it will be important for FRA to prioritize resources based on risk, as we recommended.

In conclusion, a decade after the tragic rail accident in Chatsworth, California, it remains an open question whether railroads and FRA are poised to complete the remaining work and overcome the ongoing challenges facing them to achieve full implementation by 2020.

Mr. Chairman, this concludes my statement, and I'd be pleased to answer questions you or others may have.

[The prepared statement of Ms. Fleming follows:]

PREPARED STATEMENT OF SUSAN FLEMING, DIRECTOR, PHYSICAL INFRASTRUCTURE,
UNITED STATES GOVERNMENT ACCOUNTABILITY OFFICE

Highlights of GAO

Why GAO Did This Study

Forty railroads are currently required by statute to implement PTC, a communications-based system designed to slow or stop a train that is not being operated safely. Of these, 29 passenger railroads collectively provide over 500 million passenger trips annually. Although the deadline for PTC implementation is December 31, 2018, railroads may receive a maximum 2-year extension to December 31, 2020, if they meet certain statutory criteria.

GAO was asked to review passenger railroads' progress toward PTC implementation. This statement discusses (1) passenger railroads' PTC progress and FRA's steps to assist them, and (2) how passenger railroads and FRA plan to approach the 2018 and 2020 deadlines. GAO analyzed railroads' most recent quarterly reports covering activities through June 30, 2018; sent a brief questionnaire to all 40 railroads; and interviewed officials from FRA and 16 railroads, selected in part based on those identified as at-risk by FRA.

What GAO Recommends

In March 2018, GAO recommended FRA take steps to systematically communicate extension information to railroads and to use a risk-based approach to prioritize agency resources and workload. FRA has taken some steps to address these recommendations, such as recently communicating and clarifying extension requirements to all railroads during three symposiums. GAO will continue to monitor FRA's progress. View GAO-19-135T. For more information, contact Susan Fleming at (202) 512-2834 or flemings@gao.gov.

POSITIVE TRAIN CONTROL

Most Passenger Railroads Expect to Request an Extension, and Substantial Work Remains Beyond 2018

What GAO Found

As of June 30, 2018, passenger railroads (28 commuter railroads and Amtrak) generally remained in the early stages of positive train control (PTC) implementation—including equipment installation and early field testing. However, many passenger railroads are nearing completion of the equipment installation stage. For example, two-thirds of passenger railroads reported being more than 90 percent complete with equipment installation. With regard to testing, Amtrak has reported that it has initiated both field testing and revenue service demonstration (RSD), an advanced form of field testing that is required to fully implement PTC. However, most commuter railroads reported slower progress with testing. Of the 28 commuter railroads required to implement PTC, 19 reported initiating field testing, but only eight reported initiating RSD. The Federal Railroad Administration (FRA) recently clarified the criteria railroads must meet to qualify for a 2-year extension past the December 31, 2018, PTC implementation deadline. To receive an extension, railroads must meet six statutory criteria. For the sixth criterion, commuter railroads are authorized to either initiate RSD on at least one track segment or use FRA-approved substitute criteria. FRA clarified these and other requirements at three PTC symposiums hosted for railroads in summer 2018. For example, FRA officials said that initiating field testing instead of RSD was one approach that commuter railroads could potentially take to receive FRA's approval of substitute criteria. FRA's actions are consistent with GAO's March 2018 recommendation that the agency communicate to railroads the requirements and process for an extension.

Challenges related to PTC implementation and FRA's resources raise questions as to the extent FRA and the passenger railroad industry are poised for full PTC implementation by December 31, 2020. Most passenger railroads anticipate needing an extension, leaving substantial work for both railroads and FRA to complete before the end of 2020. Almost three-quarters of passenger railroads (21 of 29) reported that they, or the railroad which owns the track on which they operate, will apply for an extension. More than half of these railroads reported planning to apply for an extension using substitute criteria, and of these, eight intend to apply for substitute criteria based on field testing. Though use of substitute criteria is authorized in law, this approach defers time-intensive RSD testing into 2019 and beyond. In addition, passenger railroads reported that they continue to face many of the same challenges GAO previously identified, such as software defects and limited industry-wide availability of vendors. Further, passenger railroads expressed concern that

FRA’s workload will markedly increase as railroads submit requests for extension approvals. FRA has acknowledged concerns about the pending surge of submissions and agency officials said they have taken recent steps to help manage the forthcoming influx of documentation, such as reallocating resources. However, as of September 21, 2018, only one passenger railroad had applied for an extension. It remains unclear how many extension requests FRA will receive or what FRA’s enforcement strategy will be for noncompliance with the statute, such as for railroads that fail to apply for an extension by the deadline.

Chairman Thune, Ranking Member Nelson, and Members of the Committee:

Thank you for the opportunity to discuss our work in reviewing efforts by passenger railroads and the Federal Railroad Administration (FRA) to implement positive train control (PTC). In September 2008—10 years ago last month—a commuter train and freight train collided in the Chatsworth neighborhood of Los Angeles, California, resulting in 25 deaths and over 100 injuries. In the wake of this accident, legislation was enacted requiring certain railroads to implement PTC—a communications-based system designed to slow or stop a train that is not being operated safely.¹ Forty railroads are required to implement PTC.² These railroads include 28 commuter railroads and Amtrak, which collectively provide over 500-million passenger trips annually. Railroads that play a key role in our Nation’s freight network must also implement PTC, including the seven largest Class I and four Class II and III freight railroads.³

As we have previously reported, PTC implementation is a complex and lengthy process, which touches almost every part of major rail lines and almost every aspect of railroads’ train operations.⁴ Each implementing railroad must install more than 20 major components that will ultimately communicate trains’ locations, movements, and speed, and then slow or stop a train that is not being operated safely. Full implementation of PTC involves a number of steps, including but not limited to: planning and system development, equipment installation, testing, system certification, and achieving interoperability. Since U.S. railroads often operate some or all of their trains as “tenants” on the track of another railroad, known as the “host,” interoperability is intended to enable trains that operate on the same track to be governed by the PTC system and to move seamlessly across track owned by different railroads.

When PTC implementation was mandated in 2008, the statutory deadline for railroads’ implementation was December 31, 2015. We reported in September 2015 that nearly all railroads did not expect to meet this deadline.⁵ In October 2015, Congress extended the deadline to December 31, 2018, and established criteria that would enable FRA, the agency responsible for overseeing PTC implementation, to grant railroads meeting certain requirements an alternative schedule up to year-end 2020.⁶ Throughout this statement we refer to the alternative schedule as the “extension.” My testimony today discusses the efforts of FRA and passenger railroads—which include commuter railroads and Amtrak, an intercity passenger railroad—to implement PTC as the December 31, 2018, deadline approaches and since we testified on PTC in March 2018.⁷ My statement today will address (1) passenger railroads’ implementation progress and the steps that FRA has taken to assist these railroads and (2) how passenger railroads and FRA plan to approach PTC implementation to meet the December 2018 and December 2020 deadlines.

To describe passenger railroads’ progress, we analyzed the most recent available quarterly PTC implementation reports that railroads submitted to FRA, reports that reflected the progress as of June 30, 2018. We analyzed the reports to determine

¹The Rail Safety Improvement Act of 2008, Pub. L. No. 110–432, div. A, 112 Stat. 4848 (2008).

²Specifically, these 40 railroads are currently subject to the statutory mandate that requires the implementation of a PTC system on certain main lines.

³Freight railroads are classified by operating revenues. As of 2017, Class I railroads are those carriers with annual operating revenues of \$447.6 million or more. Class II railroads are carriers with annual operating revenues of less than \$447.6 million but in excess of \$35.8 million, and Class III railroads have annual carrier operating revenues of \$35.8 million or less.

⁴See GAO, *Positive Train Control: Additional Authorities Could Benefit Implementation*, GAO–13–720 (Washington, D.C., Aug. 16, 2013).

⁵See GAO, *Positive Train Control: Additional Oversight Needed As Most Railroads Do Not Expect to Meet 2015 Implementation Deadline*, GAO–15–739 (Washington, D.C., Sept. 4, 2015).

⁶The Positive Train Control Enforcement and Implementation Act of 2015, Pub. L. No. 114–73, § 1302, 129 Stat. 568, 576–582 (2015), codified at 49 U.S.C. § 20157.

⁷GAO, *Positive Train Control: Many Commuter Railroads Still Have Significant Additional Implementation Work and Opportunities Exist to Provide Federal Assistance*, GAO–18–367T (Washington, D.C., Mar. 1, 2018).

the extent that each railroad has installed PTC hardware and initiated testing. Based on our review of these data for anomalies, outliers, or missing information and our previous assessment of such quarterly reports for our March 2018 testimony, we determined that these data were sufficiently reliable for our purposes of describing railroads' progress in PTC implementation. To describe passenger railroads' and FRA's progress and approaches, we interviewed representatives from 16 railroads, including the 12 railroads (11 commuter railroads and one Class III freight railroad) that FRA identified in June 2018 as at risk of not having implemented PTC or qualifying for an extension by December 31, 2018. The remaining four railroads we interviewed were: Amtrak, which provides intercity passenger rail service; two Class I freight railroads, which were selected based on their relationships with tenant railroads and substantial progress toward PTC implementation; and a commuter railroad that received approval from FRA in March 2018 for an exception from PTC system implementation.⁸ To describe how railroads and FRA plan to approach PTC implementation for the December 2018 and 2020 deadlines, we sent 41 railroads a semi-structured questionnaire.⁹ The questions we asked were based on the data collection efforts from our March 2018 testimony. We analyzed railroads' responses and summarized their plans and challenges into common categories. To determine the stage of PTC implementation railroads expected to reach by December 31, 2018, we considered railroads' responses to our questionnaire, information provided in interviews, and documents submitted to FRA regarding railroads' planned implementation approaches, among other information. To describe railroads' progress and FRA's actions to assist railroads, we interviewed the industry associations for commuter (American Public Transportation Association) and freight (Association of American Railroads) railroads, and two PTC vendors. We also reviewed applicable laws and FRA regulations, presentations, reports, and guidance and interviewed FRA officials. While our audit work included Class I, II, and III freight railroads, commuter railroads, and intercity passenger rail, this statement is focused on passenger railroads'—commuter and intercity—progress and approaches to meet the December 2018 and December 2020 deadlines.

We conducted this performance audit from June 2018 to October 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

PTC systems are required by law to prevent certain types of accidents or incidents. In particular, a PTC system must be designed to prevent train-to-train collisions, derailments due to excessive speed, incursions into work zone limits, and the movement of a train through a switch left in the wrong position.¹⁰ While railroads may implement any PTC system that meets these requirements, the majority of passenger railroads are implementing one of four types of systems.¹¹ PTC's intended safety benefits can be fully achieved nationwide when all required railroads have successfully installed PTC components, tested that these components work together and the systems function as designed, and are interoperable with other host and tenant railroads' PTC systems that share track. Interoperability means the locomotives of any host railroad and tenant railroad operating over the same track segment will communicate with and respond to the PTC system, allowing uninter-

⁸In March 2018, we reported that 41 railroads were required to implement PTC. However, since then one commuter railroad received approval from FRA for a main line track exception, meaning it is no longer required to implement PTC. FRA can grant main line track exceptions under certain conditions, such as through limited operations. 49 C.F.R. §236.1019(c). In this case, a commuter railroad reduced its regularly scheduled service by one train on one day of the week to 12 regularly scheduled one-way trains per day. Additionally, in September 2018, FRA approved a temporary main line track exception for another commuter railroad. However, because this exception is temporary and the railroad is still required to implement PTC by December 31, 2020, we consider this railroad as one of the 29 passenger railroads required to install PTC.

⁹We sent the questionnaire to all 40 railroads that are currently required to install PTC and one commuter railroad that was granted a main line track exception in March 2018.

¹⁰The Rail Safety Improvement Act of 2008, Pub. L. No. 110-432, div. A, 122 Stat. 4848 (2008).

¹¹The four primary types of PTC systems are the Interoperable Electronic Train Management System (I-ETMS); the Advanced Civil Speed Enforcement System II; the Enhanced Automated Train Control (E-ATC); and the Incremental Train Control System (ITCS).

rupted movements over property boundaries.¹² Interoperability is critical to PTC functioning properly given the complexity of the rail network in the United States. In much of the country, Class I freight railroads function as hosts for Amtrak and commuter railroads. For example, one of the seven major Class I freight railroads reports that 24 tenant railroads operate over its PTC-equipped tracks, including freight, Amtrak, and commuter railroads. A notable exception to this is the Northeast Corridor, which runs from Washington, D.C., to Boston, Massachusetts, which Amtrak predominantly owns and over which six freight and seven commuter railroads operate as tenants.

PTC implementation involves multiple stages to achieve full implementation, including planning and system development, equipment installation and testing, system certification, and full deployment, including interoperability. Each railroad must develop an FRA-approved PTC implementation plan that includes project schedules and milestones for certain activities, such as equipment installation.¹³ The equipment installation stage involves many components, including communication systems; hardware on locomotives and along the side of the track (called “wayside equipment”); and software in centralized office locations as well as onboard the train and along the track.¹⁴ Each railroad is required to report quarterly and annually to FRA on its PTC implementation status relative to its implementation plan.¹⁵ A railroad can also revise its implementation plan to reflect changes to the project, which then must be reviewed and approved by FRA.

In addition, railroads must demonstrate that the PTC systems are deployed safely and meet functional requirements through multiple stages of testing. Before initiating testing on the general rail system, railroads must submit a formal test request for FRA approval that includes, among other things, the specific test procedures, dates and locations for testing, and the effect the tests will have on current operations. The multiple stages of PTC testing include:

- *Laboratory testing*: locomotive and wayside equipment testing in a lab environment to verify that individual components function as designed.
- *Field testing*: includes several different tests of individual components and the overall system, such as testing of each locomotive type to verify that it meets functional requirements and field integration testing—a key implementation milestone to verify that each PTC component is integrated and functioning safely as designed.
- *Revenue service demonstration (RSD)*: an advanced form of field testing in which the railroad operates PTC-equipped trains in regular service under specific conditions.¹⁶ RSD is intended to validate the performance of the PTC system as a whole and to test the system under normal, real-world operations.
- *Interoperability testing*: host and tenant railroads that operate on the same track must work together to test interoperability to ensure each railroad can operate seamlessly across property boundaries. Almost all of the 40 railroads currently required to implement PTC must demonstrate interoperability with at least one other railroad’s PTC system.

¹²See 49 U.S.C. § 20157. With certain exceptions, full implementation requires all controlling locomotives to be equipped with a fully operative and functioning onboard PTC apparatus, including the controlling locomotives for each host railroad and each tenant railroad operating on a PTC-equipped track segment. 49 C.F.R. § 236.1006.

¹³The Rail Safety Improvement Act of 2008 required that railroads submit an implementation plan by April 16, 2010. When the PTC implementation deadline was extended to 2018 under the PTC Enforcement and Implementation Act of 2015, railroads were required to submit a revised implementation plan by January 27, 2016, to outline how and when each railroad plans to achieve full PTC implementation.

¹⁴See GAO–18–367T and GAO–15–739. In this statement, we use the term locomotive generally to refer to any of the variety of vehicles, such as cab cars and electric multiple unit trains, that commuter railroads may need to equip. Wayside equipment includes items such as communication towers or poles, switch position monitors, wayside radios, wayside interface units, and base station radios.

¹⁵To effectively monitor each railroad’s progress implementing PTC, FRA requires the submission of quarterly progress reports under its investigative authorities, *See, e.g.*, 49 U.S.C. §§ 20107, 20902, 20157(c)(2); 49 C.F.R. § 236.1009(h). In addition, each railroad is required to annually report to FRA on PTC implementation progress in areas such as spectrum acquisition, installation progress, and the total number of route miles where revenue service demonstration has been initiated or PTC is in operation. *See* 49 U.S.C. § 20157(c) (1); 49 C.F.R. § 236.1009(a)(5).

¹⁶Results and data from RSD testing are also used to support the safety case outlined in each host railroad’s safety plan.

Using results from field and RSD testing, combined with other information, host railroads must then submit a safety plan to FRA for approval.¹⁷ We have previously reported that these safety plans are about 5,000 pages in length.¹⁸ Once FRA approves a safety plan, the railroad receives PTC system certification, which is required for full implementation, and is authorized to operate the PTC system in revenue service. According to FRA officials, the FRA may impose conditions to the PTC safety plan approval as necessary to ensure safety, resulting in a conditional certification.

Railroads may receive a maximum 2-year extension from FRA past the December 31, 2018, deadline if they meet six criteria set forth in statute. Specifically, railroads must demonstrate, to the satisfaction of FRA, that they have: (1) installed all PTC system hardware consistent with the total amounts identified in the railroad's implementation plan; (2) acquired all necessary spectrum consistent with the implementation plan;¹⁹ (3) completed required employee training; (4) included in a revised implementation plan an alternative schedule and sequence for implementing the PTC system as soon as practicable but no later than December 31, 2020; (5) certified to FRA that they will be in full compliance with PTC statutory requirements by the date provided in the alternative schedule and sequence; and (6) for Class I railroads and Amtrak, initiated RSD or implemented a PTC system on more than 50 percent of the track they own or control that is required to have PTC. For commuter and Class II and III railroads, the sixth statutory criterion is to have either initiated RSD on at least one territory required to have operations governed by a PTC system or "met any other criteria established by the Secretary," which FRA refers to as "substitute" criteria.²⁰

FRA is responsible for overseeing railroads' implementation of PTC, and the agency monitors progress and provides direct assistance to railroads implementing PTC. For example, FRA officials provide technical assistance to railroads, address questions, and review railroad-submitted documentation. FRA has a PTC Staff Director, designated PTC specialists in the eight FRA regions, and additional engineers and test monitors responsible for overseeing technical and engineering aspects of implementation and reviewing railroads' submissions and requests, as well as programmatic support staff. In anticipation of the upcoming implementation deadline, in May 2017, FRA began to send notification letters to railroads it determined were at risk of both not meeting the December 31, 2018, implementation deadline and not completing the requirements necessary to qualify for an extension. FRA identified "at-risk" railroads by comparing a railroad's hardware installation status to the total hardware required for PTC implementation, according to the railroad's implementation plan. FRA has increased the "at-risk" threshold percentage over time as the deadline approaches. (See Table 1).

Table 1: Installation Thresholds Used over Time by the Federal Railroad Administration (FRA) to Determine Railroads At-Risk for Missing Positive Train Control (PTC) Implementation Deadlines

Date of railroad's progress from quarterly reports used to determine whether at-risk	Threshold of percentage of hardware installed relative to railroad's implementation plan—below which railroads considered "at-risk"	Date of FRA at-risk letters sent to railroads	Number of at-risk railroads identified by FRA
December 31, 2016	50	May 2017	17
December 31, 2017	80	April 2018	15
March 31, 2018	85	June 2018	12
June 30, 2018	90	August 2018	9

Source: GAO presentation of Federal Railroad Administration information. / GAO-19-135T.

FRA has additional oversight tools, which include use of its general civil penalty enforcement authority for failure to meet certain statutory PTC requirements.²¹ FRA has used this authority in 2017 and 2018 to assess civil penalties, primarily against passenger railroads that failed to comply with the equipment installation

¹⁷ 49 C.F.R. § 236.1015.

¹⁸ GAO-18-367T.

¹⁹ PTC uses radio spectrum to communicate a train's location, speed restrictions, and movements. Radio frequency spectrum is the medium for wireless communications and supports a vast array of commercial and governmental services. Commercial entities also use radio frequency spectrum to provide a variety of wireless services, including mobile voice and data.

²⁰ 49 U.S.C. § 20157(a)(3)(B). FRA defines a "territory" as an entire installation/ track segment as identified in a railroad's PTC implementation plan (e.g., a track segment, territory, subdivision, district, etc.).

²¹ 49 U.S.C. § 20157(e).

milestones, the spectrum acquisition milestones, or both, that the railroads had established in their implementation plans for the end of 2016 and 2017.

As part of our body of work on PTC, we found that railroads face numerous PTC implementation challenges and made recommendations to FRA to improve its oversight of implementation. Specifically, in 2013 and 2015 we found that many railroads were struggling to make progress due to a number of complex and inter-related challenges, such as developing system components and identifying and correcting issues discovered during testing. For example, we found in March 2018 that FRA had not systematically communicated information or used a risk-based approach to help commuter railroads prepare for the 2018 deadline or to qualify for an extension.²² We also found that many railroads were concerned about FRA's ability to review submitted documentation in a timely manner, particularly given the length of some required documentation such as safety plans and FRA's limited resources for document review. In March 2018, we recommended FRA identify and adopt a method for systematically communicating information to railroads and use a risk-based approach to prioritize its resources and workload.

FRA agreed with our recommendations. Most recently, in September 2018, we testified on the status of railroads' implementation of PTC.²³

Many Passenger Railroads Remain in Early Stages of PTC Implementation and FRA Has Clarified Extension Requirements

Passenger Railroads Continue to Install and to Test PTC Systems, and Report Previously Identified Implementation Challenges

As of June 30, 2018, many passenger railroads reported that they remain in the equipment installation and field-testing stages, which are early stages of PTC implementation. However, since we testified in March 2018, railroads have made progress on equipment installation. Based on our analysis of the 40 railroads' reported status as of June 30, 2018, about half of the railroads have completed equipment installation, and many others are nearing completion of this stage. Specifically, 20 of the 29 passenger railroads reported being more than 90 percent complete with locomotive equipment installation. Nearly two-thirds of passenger railroads that must install wayside equipment reported being more than 90 percent complete.²⁴ One-third of passenger railroads are among those designated by FRA as at-risk of both not meeting the end of 2018 implementation deadline and not completing the requirements necessary to qualify for an extension. Specifically, in August 2018, FRA identified nine railroads—all commuter railroads—as at-risk, fewer than the 12 railroads FRA had previously designated as at-risk in its June 2018 letters to railroads.

Since we reported in March 2018, Amtrak reported that it has initiated both field testing and RSD, but most commuter railroads reported slower progress with testing, especially with RSD. For example:

- *Laboratory and initial field testing:* 19 of 28 commuter railroads reported having initiated this testing as of June 30, 2018; this number represents six more commuter railroads than the 13 we previously reported as having initiated field testing as of September 30, 2017.²⁵
- *RSD testing:* Eight of 28 commuter railroads reported initiating RSD testing as of June 30, 2018; this number represents two more commuter railroads than the six we previously reported as having entered RSD testing as of September 30, 2017. As noted earlier, unless a commuter railroad receives approval for using substitute criteria, the railroad must initiate RSD, a final stage of PTC testing, on at least one territory by December 31, 2018, to qualify for an extension.

Passenger railroad representatives reported that they continued to face many of the same challenges we have previously identified, including limited industry-wide availability of vendors and expertise and software defects. For example, in response

²² GAO-18-367T.

²³ See GAO, *Positive Train Control: Most Railroads Expect to Request an Extension, and Substantial Work Remains Beyond 2018*, GAO-18-692T (Washington, D.C., Sept. 13, 2018).

²⁴ As of June 30, 2018, seven passenger railroads reported that they were not required to install wayside equipment because either their hosts were responsible for installation of wayside equipment, or the PTC system being installed did not require it. We did not include these railroads when we analyzed railroads' progress in wayside equipment installation.

²⁵ See GAO-18-367T. We determined a railroad to have initiated testing if it met one of the following criteria: (1) at least one track segment reported as "testing;" (2) at least one track segment reported as "operational/complete;" or (3) at least one route mile reported as in testing. Accordingly, "testing" in this context includes a range of testing activities from laboratory testing to on-track field integration testing. Additionally, because field testing is a prerequisite for RSD, these counts include some railroads that may have also initiated RSD.

to our questionnaire, 12 of 29 passenger railroads reported challenges with PTC vendors and contractors. One passenger railroad noted that because its contractor manages PTC projects across the country with the same deadline and requirements, it can be difficult for all railroads to get the resources they need from their contractor. We previously reported that there are a limited number of vendors available to design PTC systems, provide software and hardware, and conduct testing. For example, we reported in 2015 that, according to railroad industry representatives, there were two vendors for the onboard train management computer and three vendors for the wayside equipment.²⁶ One small passenger railroad recently testified that, because a single manufacturer was providing PTC equipment and software to many railroads across the country, it had to wait over a year for PTC equipment to be delivered and installed. We also previously reported that railroads face software challenges, and noted that railroads had concerns with the number of defects identified during software testing, since these take time to address. In response to our questionnaire, nine passenger railroads reported encountering challenges related to maturity of the PTC software systems, such as working through software bugs or defects during testing.

As passenger railroads work to complete PTC implementation activities, some have made service or schedule adjustments to accommodate the need to install equipment or perform testing. Moreover, several passenger railroads told us that as PTC implementation schedules become more compressed, avoiding effects on passengers becomes more difficult. We identified 10 passenger railroads that have made changes to their operations due, in part, to PTC implementation, including the six largest commuter railroads in the country, which collectively reported over 400 million passenger trips in 2017. These changes had effects such as reduced service or longer travel times.²⁷ For example, one of the largest passenger railroads in the country reduced service on certain routes and eliminated some express trains to accommodate schedules enabling them to complete PTC equipment installation prior to the December 2018 deadline. Another large passenger railroad has shutdown weekend service—providing bus service to transport passengers between stations—for PTC testing. Several passenger railroads had to reduce service for equipment or track installation or testing, resulting in fewer locomotives or less track available for service.

FRA Has Recently Clarified Extension Requirements

In June, July, and August 2018, FRA held three PTC symposiums that were attended by representatives from all 40 railroads and that focused on the extension process and substitute criteria, PTC testing, and safety plans, respectively. FRA's June 2018 symposium covered information consistent with our March 2018 recommendation that the agency adopt a method for systematically communicating information related to the requirements and process for an extension to railroads.²⁸ Specifically, FRA presented information on the procedures for requesting and obtaining FRA's approval for an extension to implement PTC beyond the December 2018 deadline including FRA's review process.²⁹ FRA also clarified that for commuter railroads, initiating field testing was one approach that could potentially qualify as substitute criteria, rather than initiating RSD.³⁰

Representatives we interviewed from the passenger railroads that participated in the symposiums found them to be helpful, and some passenger railroads reported that the information presented led them to adjust their approach to meeting the December 2018 deadline. For example, one passenger railroad representative we spoke to said that until the symposium, he was unaware that using field testing as substitute criteria was a potential option. Some passenger railroads we met with also told us they are re-evaluating what activities and documentation need to be revised and submitted to FRA before the December 2018 deadline based on the information presented at the symposiums. For example, representatives from one passenger railroad we met with said that FRA officials encouraged them to update their PTC implementation plan right away with current equipment installation totals, to ensure

²⁶ GAO-15-739.

²⁷ We identified these service changes based on railroads' responses to our questionnaire and in interviews and public statements made by railroad officials.

²⁸ GAO-18-367T.

²⁹ FRA has 90 days to approve a railroad's alternative schedule and sequence plan and provide notification to the railroad of its decision. See 49 U.S.C. §20157(a)(3)(C); 49 C.F.R. §236.1011(a), (c). Within 45 days of receiving notification of a railroad's alternative schedule and sequence plans, FRA must provide to the railroad notification of any deficiencies that would prevent FRA approval and provide an opportunity to correct the deficiencies. 30

³⁰ FRA officials note that each application for substitute criteria is different, with different circumstances, and that applications are evaluated individually on a case-by-case basis by FRA.

consistency across all required documentation by the end of 2018. A couple of passenger railroads noted that the information presented at the symposiums clarified many questions and would have been beneficial to know a year or two earlier in the implementation process.

In addition, in recent months FRA has continued to provide assistance to railroads and has taken a series of steps to better prepare railroads for the 2018 deadline. These steps include meeting regularly with individual railroads and developing approaches intended to help many railroads meet the requirements necessary for a deadline extension. For example, representatives from one commuter railroad said agency officials have been willing to share lessons learned, clarify requirements, and review draft documentation to provide informal feedback.

Passenger Railroads and FRA Are Working toward Extensions, Leaving Substantial Work to Be Completed Beyond 2018

Most Passenger Railroads Anticipate Needing an Extension, and Many Plan to Start RSD Testing Beyond 2018

Almost three-quarters of passenger railroads (21 of 29) reported to us that they plan to apply for an extension.³¹ Five passenger railroads reported to us that they planned to submit their extension request by the end of September 2018, but as of September 21, 2018, only one had submitted the request and required documentation. However, FRA officials noted that with the exception of possibly one or two railroads, they anticipate that all passenger and freight railroads will likely need an extension, and that railroads must submit their requests by the end of the year to be considered in compliance with PTC requirements. A railroad must demonstrate that it has met all of the statutory criteria necessary to qualify before, or when, it formally requests an extension. And as previously discussed, many railroads remain in the early stages of PTC implementation. Of the eight passenger railroads that anticipate reaching full implementation by December 31, 2018, six are already operating under conditionally certified safety plans; one has submitted its safety plan for review; one plans to submit its safety plan to FRA in fall 2018 for certification.³² FRA officials stated that it is unclear whether the passenger railroads that have obtained conditional PTC System Certification will have achieved full implementation on all route miles by December 31, 2018.

Of the 21 passenger railroads that intend to apply for an extension, more than half—all commuters—reported that they plan to use substitute criteria to qualify.³³ Moreover, two-thirds of the commuter railroads (8 of 12) that plan to use substitute criteria intend to apply to use their initiation of field integration or functional testing as substitute criteria, and many of these will apply to begin field testing on only a portion of their track.

Figure 1 depicts the stage of PTC implementation that passenger railroads at least expect to reach by December 31, 2018, in order to be in compliance with the deadline, based on railroads' responses to our July/August 2018 questionnaire.

³¹According to FRA officials, tenant-only railroads are not required to apply for an extension but are covered under extensions applied for and granted to their host railroad(s). Therefore, we considered tenant railroads that told us that their hosts would be applying for an extension on their behalf as part of the 21 railroads cited here. This total includes two total tenant railroads that told us that they would require an extension because one or more of their hosts would not reach full implementation.

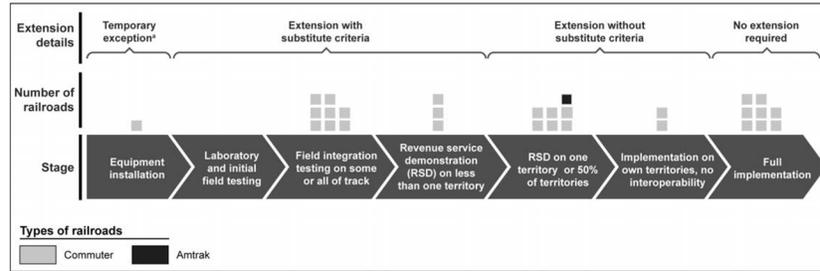
³²This includes some tenant railroads that are included in their hosts' conditionally-certified safety plans and that have achieved, or expect to achieve, full interoperability with those host(s).

Note: This graphic is based on railroads' self-reported expectations and approaches to be in compliance by December 31, 2018. Railroads may make more or less progress than expected. For tenant-only railroads—railroads that only run on hosted track—we considered both the tenant and the host railroads' reported expectations, including for extensions, which, according to FRA, are generally applied for and granted to host railroads but which also cover tenants.

^aRailroads that were granted a temporary mainline track exception may remain in the installation stage. FRA can grant main line exceptions under certain conditions, such as through limited operations. 49 C.F.R. § 236.1019(c).

³³As previously mentioned, only commuter and Class II and III freight railroads may apply for substitute criteria. Class I freight railroads and Amtrak are not authorized to receive an extension using substitute criteria. According to publicly available documents and FRA, as of September 21, 2018, eight commuter railroads had submitted substitute criteria applications to FRA for approval, and FRA had approved seven.

Figure 1: Number of Passenger Railroads Expected in Each Positive Train Control (PTC) Implementation Stage by December 31, 2018



Source: GAO. | GAO-19-135T

Although FRA has recently made clear that it is authorized to grant extensions based on initiating field testing or other FRA-approved substitute criteria, this approach defers time-intensive RSD testing into 2019 and beyond. For example, one commuter railroad we met with has applied for, and was granted approval by FRA to use, the initiation of field testing on a 16.5-mile segment of track as substitute criteria to qualify for an extension. That railroad must ultimately implement PTC over 321 miles of track that it owns and operates over, meaning that it will need to complete field testing, RSD, and interoperability testing on the remaining 95 percent of its track and achieve system certification prior to the 2020 deadline. In March 2018, we testified that FRA officials told us that moving from the start of field testing to the start of RSD can take between 1 and 3 years, and has averaged about 2 years for those railroads that have completed that stage. We also reported that FRA officials believe that most railroads underestimate the amount of time needed for testing.³⁴ FRA officials told us that they do not consider railroads that are approved for an extension under substitute criteria to be necessarily at a higher risk of not completing PTC implementation by 2020. However, in light of these time estimates and the unknown challenges that railroads may face during testing, railroads that are in the early field-testing stage moving into 2019 could face challenges completing PTC implementation by the extended December 2020 deadline.

Railroads further behind in PTC implementation may need to apply for an extension due to factors such as compressed implementation schedules, as well as the time needed for FRA approvals. For example, representatives from one commuter railroad said that they hope to reach RSD before the December 31, 2018, deadline, but that it would be difficult to meet the extension requirements, apply for, and receive an extension given the volume of paperwork FRA will be receiving at the end of the year. Instead, the railroad plans to submit an extension request using substitute criteria consisting of field testing in order to be in compliance at the end of the year. Such an approach involves first applying for and receiving approval for substitute criteria and then formally requesting an extension and submitting supporting documentation to FRA before the end of the year. Entering RSD prior to the deadline could be difficult given that FRA officials told us they have advised railroads to allow at least a month for FRA’s review of test requests, which must be approved prior to initiating field testing and RSD.

Some passenger railroads also reported challenges regarding host and tenant responsibilities, including coordination and interoperability—which are likely to continue beyond 2018. Some passenger railroads told us that coordinating with host or tenant railroads that are in different implementation stages as the 2018 deadline approaches poses several challenges. For example, a few passenger railroads told us that they are unable to conduct interoperability testing because their host or tenant railroad has not yet reached that stage of implementation. Additionally, officials from Amtrak—which interoperates with 21 other railroads—noted that the host-tenant relationship can be complicated and requires a high level of coordination to resolve issues between railroads. Amtrak officials also told us they were conducting risk assessments to determine whether and how to continue service in situations where their host or tenant railroad has not completed PTC implementation or met the requirements necessary for an extension. While few passenger railroads have reached the interoperability stage, one railroad association stated that interoperability is, and will continue to be, a substantial challenge for metropolitan areas

³⁴ GAO-18-367T.

with dense and complex rail networks with several host-tenant relationships. For example, according to one passenger railroad, 14 different freight and passenger railroads will need to interoperate in the Chicago area.

FRA's Substantial Workload Remains a Concern

FRA's already substantial workload is expected to increase as railroads continue to submit documentation necessary for extensions and continue PTC implementation activities. FRA is focused on ensuring railroads are in compliance by the December 2018 deadline—whether via an extension or by completing implementation. While FRA officials report that they anticipate almost all railroads will likely request an extension, only one passenger railroad had submitted an application for an extension as of September 21, 2018.³⁵ FRA will need to review and approve all related documentation associated with each extension request and make a determination within 90 days, meaning if a railroad were to submit its extension request on December 31, 2018, FRA would have until the end of March 2019 to approve or deny the railroad's extension request.³⁶ In addition to extension requests and supporting documentation, many passenger railroads will also be submitting to FRA: requests for substitute criteria, test requests to initiate field testing or RSD, revisions to PTC implementation plans, and PTC safety plans. Some of these documents can be lengthy and require back and forth between FRA and railroads before approval. For example, we previously reported that PTC safety plans are about 5,000 pages in length and take between 6 and 12 months for FRA to review.

To help manage the forthcoming influx of documentation, FRA officials have offered to review draft documentation, such as substitute criteria requests and test requests, and have advised railroads to take FRA's review times into account prior to submitting required documentation. FRA officials told us that in trying to manage their workload, they initially told railroads they did not have time to review draft submittals. However, they found that taking the time to conduct draft reviews ultimately led to higher quality formal submittals and accelerated the overall review process. In addition, FRA officials said that their goal is to not delay any railroad that is ready to move into testing, and that they advised railroads to build 30 to 45 days for test request reviews into their project schedules.

Despite these efforts, some passenger railroads remain concerned about the agency's ability to manage the PTC workload in the coming months and beyond 2018. For example, seven of 29 passenger railroads identified FRA's resources and review times as a challenge leading up to the December 2018 deadline. In addition, three passenger railroads reported that they would complete all the requirements for full PTC implementation by the December 31, 2018, deadline, but planned to apply for an extension due to concerns that FRA would not be able to review and certify their safety plans to enable them to reach full implementation prior to the deadline. Based on similar concerns, in March 2018, we recommended FRA develop an approach to prioritize the allocation of resources to address areas of greatest risk as railroads work to complete PTC implementation.³⁷ FRA has acknowledged the railroads' concern given the surge of submissions requiring FRA approval in 2018 and has reported the agency is reallocating existing expertise and expanding the PTC workforce through training, expanding contracts with existing support contractors, and initiating one additional contract to provide technical support. For example, FRA officials told us that they reallocated resources to shift PTC specialists' responsibilities to focus exclusively on testing-related activities because their involvement is critical for the testing stage. Taking steps to prioritize limited resources will only increase in importance as the amount of documentation needing FRA review continues to grow in 2019 and 2020, as railroads move through testing and submit complex and lengthy safety plans.

Although FRA has taken steps to provide key extension information to railroads and to help ensure railroads' compliance with PTC deadlines, uncertainty remains, particularly in regard to FRA's enforcement strategy if railroads are noncompliant with the PTC implementation requirements, such as if railroads were to fail to

³⁵Three railroads—two Class I freight railroads and one passenger railroad—had submitted an application for an extension as of September 21, 2018. FRA has approved only one railroad's revised PTC implementation plan and alternative schedule and sequence as of September 21, 2018.

³⁶FRA officials noted that FRA's decision is based on whether the railroad has met the statutory criteria for an alternative schedule, and that if the requesting railroad meets all applicable statutory criteria, FRA must approve the alternative schedule. 49 U.S.C. §20157(a)(3)(C). According to FRA officials, if FRA's review and decision regarding a railroad's request for an alternative schedule is pending on or after January 1, 2019, the statute extends the December 31, 2018, deadline until the date of FRA's decision.

³⁷GAO-18-367T.

apply for an extension by the deadline. Representatives from all railroads implementing PTC with whom we met told us that FRA's planned enforcement approach for any railroad that fails to meet the requirements for an extension beyond 2018 is unclear. FRA officials told us they have shared the range of applicable civil penalties with railroads for years,³⁸ but that any policy decision about how potential fines will be levied for non-compliant railroads has not yet been made. In addition, it is also unclear how the agency would approach enforcement for railroads that have a host or tenant operating on their tracks that has not completed implementation or met the requirements necessary for an extension. Ten of the 13 passenger railroads we met with told us they do not currently have or see a need to develop contingency plans. For example, representatives from one passenger railroad said they did not have a contingency plan because FRA has made clear they are committed to helping railroads comply with the 2018 deadline. FRA officials said that the goal of enforcement is to help bring all railroads into compliance and that they would look at the specific circumstances for any host-tenant issues before assessing a fine.

In conclusion, almost all passenger railroads will likely request an extension beyond 2018, which will require FRA approval. Many commuter railroads plan to request substitute criteria which may result in those railroads remaining in the early stages of PTC implementation at the start of 2019. However, given that only one passenger railroad has submitted an extension request, it is unlikely we will know how many railroads will be granted an extension by the December 31, 2018 deadline. While few passenger railroads had developed contingency plans when we met with them, as December nears and schedules become further compressed, additional railroads may have to make service or schedule adjustments to help them reach compliance with the deadline. Although FRA has reported taking some actions in response to our March 2018 recommendation that they better prioritize resources, FRA resources and review times remain a significant concern—both for near-term efforts such as extension requests and for the safety plans that need to be reviewed and certified prior to the end of 2020. These issues—combined with the ongoing implementation, testing, and interoperability challenges that a number of railroads reported to us—raise questions as to the extent FRA and the Nation's passenger railroads are poised for full PTC implementation by December 31, 2020.

Chairman Thune, Ranking Member Nelson, and Members of the Committee, this concludes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

The CHAIRMAN. Thank you, Ms. Fleming.
Mr. Corbett.

**STATEMENT OF KEVIN CORBETT, EXECUTIVE DIRECTOR,
NJ TRANSIT**

Mr. CORBETT. Thank you. Good morning, Chairman Thune and Ranking Member Nelson and members of the Committee. Thank you for providing this opportunity to speak on the important safety enhancement of Positive Train Control and NJ TRANSIT's PTC implementation program.

NJ Transit is the Nation's largest statewide public transportation system. We provide more than 944,000 weekday trips on 251 bus routes, three lite rail lines, 12 commuter rail lines, and through Access Link paratransit service.

The Positive Train Control challenges that NJ TRANSIT faces today were years in the making. To be blunt, they reflect years of inattentiveness to implementing PTC. Let me be clear. The single most critical mission we have at NJ Transit today is to complete the installation of Positive Train Control and to meet our Federal requirements by December 31. We are fully and absolutely committed to doing everything possible in order to meet that deadline.

³⁸FRA officials noted that the schedule of civil penalties is provided for in governing regulations. See 49 C.F.R. pt. 236, App. A.

What I found when I arrived in February was that seven years had elapsed since NJ Transit awarded a contract to install PTC. NJ Transit entered into a contract in 2011 with our vendor for vehicle equipment installation to be completed by 2015. Yet, by the end of 2017, the contractor had finished equipping only 35 locomotives and cab control cars. Up until 2014, NJ TRANSIT had just a single full-time employee assigned to PTC. From 2014 to 2016, there were only four employees assigned full-time to the project. This was not nearly enough to meet a mission-critical Federal deadline. So, when I came to NJ TRANSIT, the program was just at 12 percent completion.

I am pleased to report that, in the past 7 months, we have turned that around and achieved very real progress. We're now over 70 percent complete toward meeting the December 31, 2018, requirements to qualify for an alternative schedule under the PTC law. And, for that, I would also want to thank Mr. Batory and his staff for—at the Federal Railway Administration for their technical help and guidance.

That said, we are still fighting a legacy of starting out the year being far behind in the implementation of PTC. Meanwhile, we also face the challenges of contractor capacity and availability of materials and supplies, challenges that we have heard also affect many other railroads across the country. And we are challenged, simultaneously, by a shortage of locomotive engineers. This situation was allowed to develop over the same period at NJ TRANSIT, from 2011 through 2017. Engineers are critical to making the equipment moves needed to accomplish the PTC mission while we also run nearly 700 trains each weekday.

But, I believe times of great challenge are also times of great opportunity. Although NJ Transit will not receive full PT certification until the end of 2020, we're working diligently to qualify for the alternative schedule. We are working to achieve this by installing all necessary PTC equipment by the end of this year, training all necessary employees this year, and continuing substantial field and other testing. These tasks are laying the groundwork for beginning revenue service demonstration.

As of Sunday, September 30, we now have 160 locomotives and cab cars PTC-equipped. We have 82 percent of all required wayside antennas, radio, and other equipment installed on the railroad's right-of-ways, and we've trained 99 percent of all engineers, signal technicians, and others who need to be PTC-trained.

Achieving this progress has required a number of significant actions, from increasing the labor force at our installation facilities to making difficult rail service adjustments so that locomotives and cab cars are available for PTC equipment installation. The results have been, we've accomplished more in the last 7 months than in the previous 7 years. There is much, much more to do. Failure to meet our required number by December 31 is simply not an option.

Make no mistake, we are all aware of the serious consequences to NJ Transit if we do not achieve these goals, including possible FRA fines and restrictions on our ability to operate on Amtrak's Northeast Corridor. We have made, and continue to make, significant changes to service to allow us to meet our Federal requirements by the year-end despite the very real disruption to the lives

of our customers and commuters. So far, we have reduced rail service twice, including the temporary suspension on—of service on the entire Atlantic City rail line. And we'll have further service reductions going into effect on October 14. Making these kinds of service adjustments is not a decision I take lightly, but they have been amongst those necessary steps we've had to take to ensure we'd meet our PTC milestones.

To sum up, we have made significant progress since the start of the year, and we continue working to meet the milestones still in front of us in order to reach our December 31 requirements and the 2020 schedule.

Chairman Thune and members of the Committee, thank you for providing the opportunity to discuss these matters with you today, and I'll be happy to take your questions.

[The prepared statement of Mr. Corbett follows:]

PREPARED STATEMENT OF KEVIN CORBETT, EXECUTIVE DIRECTOR, NJ TRANSIT

Good morning, Chairman Thune and members of the Committee. Thank you for providing this opportunity to speak on the important safety enhancement of Positive Train Control and NJ TRANSIT's PTC implementation program.

NJ TRANSIT is the Nation's largest statewide public transportation system. We provide more than 944,000 weekday trips on 251 bus routes, three light rail lines, 12 commuter rail lines, and through Access Link paratransit service.

We are the third largest transit system in the country with 165 rail stations, 62 light rail stations, and more than 18,000 bus stops linking major points in New Jersey, New York, and Philadelphia.

The Positive Train Control challenges that NJ TRANSIT faces today were years in the making—to be blunt, they reflect years of inattentiveness to implementing PTC.

But let me be clear—the single, most critical mission we have at NJ TRANSIT is to complete the installation of Positive Train Control and to meet our Federal requirements by December 31. We are fully and absolutely committed to doing everything possible in order to meet the deadline.

What I found when I arrived in February was that seven years had elapsed since NJ TRANSIT awarded a contract to install PTC.

NJ TRANSIT entered into a contract in 2011 with our vendor for vehicle equipment installation to be complete by 2015.

Yet—by the end of 2017—the contractor had finished equipping only 35 locomotives and cab cars.

Just 35 in all those years.

Up until 2014—NJ TRANSIT had just a single full-time employee assigned to PTC. From 2014 to 2016, there were only four employees assigned full time to the project.

This was not nearly enough to meet a mission critical Federal deadline.

So when I came to NJ TRANSIT the program was at just 12 percent completion.

I am pleased to report that in the past seven months we have turned that around and achieved very real progress.

We're now over 70 percent complete toward meeting the December 31, 2018 requirements to qualify for an alternative schedule under the PTC law.

And for that, I also want to thank Mr. Batory and his staff at the Federal Railroad Administration for their technical help and guidance.

That said, we are still fighting that legacy of starting out the year being far behind in the implementation of PTC.

Meanwhile, we also face the challenges of contractor capacity and availability of materials and supplies, challenges that we have heard also affect many other railroads across the country.

And we are challenged simultaneously by a shortage of locomotive engineers. This situation was allowed to develop over that same period at NJ TRANSIT from 2011 through 2017. Engineers are critical to making the equipment moves needed to accomplish the PTC mission, while also running our nearly 700 trains each weekday.

The confluence of these challenges—complex PTC installation, contractor and supply constraints, and a depleted locomotive engineering bench—has resulted in a

large number of train cancellations in recent months, and I know these have had a significant impact on our customers.

But I believe that times of great challenge are also times of great opportunity. Although NJ TRANSIT will not receive full PTC certification until the end of 2020, we are working diligently to qualify for an alternative schedule.

We are working to achieve this by:

- Installing all necessary PTC equipment by the end of this year;
- Training all necessary employees this year; and
- Continuing substantial field and other testing.
- These tests are laying the groundwork for beginning Revenue Service Demonstration.

As of Sunday, September 30, we have gotten 160 locomotives and cab cars PTC-equipped.

We have 82 percent of all required wayside antennas, radios, and other equipment installed on the railroad rights-of-way.

And we've trained 99 percent of all the engineers, signal technicians and others who need to be PTC-trained.

Progress Toward Key Year-End Targets

Program Area		Target by Dec. 31, 2018	Realized Quantities		Remaining Quantities
			Mar. 31, 2018	Sept. 30, 2018	
Vehicle Installations		282	35	160	122
Wayside Installation	Wayside interface units	119	54	108	11
	Poles	111	43	103	8
	Antennas	111	37	93	18
Aggregate Training		823	172	1,394	8*

* Although we've exceeded our target of 823 employees trained, there are still 8 dispatchers that must be trained by year end.

Achieving this progress has required a number of significant actions, from increasing the labor forces at our installation facilities to making difficult rail service adjustments so that locomotives and cab control cars are available for PTC equipment installation.

The result has been that we've accomplished more in the last seven months, than in the previous seven years.

There is much, much more to do. Failure to meet our required numbers by December 31st is NOT an option.

Make no mistake; we are all aware of the serious consequences to NJ TRANSIT if we do not achieve these goals—including FRA daily fines, and restrictions on our ability to operate on Amtrak's Northeast Corridor.

I should note, we are working closely with Amtrak to ensure NEC operations continue while NJ TRANSIT moves toward full system certification to be completed by the end of 2020. In fact, in partnership with Amtrak, we will begin testing our systems on the NEC this month.

We have made and continue to make significant changes to service to allow us to meet our Federal requirements by the end of the year—despite their very real disruption to the lives of our customers.

So far we have reduced rail service twice, including the temporary suspension of service on the entire Atlantic City Rail Line.

And—we have further service reductions going into effect on October 14th.

Making these types of service adjustments is not a decision I take lightly—but they have been among those steps we've had to take to meet our PTC milestones.

These service changes allow for the cycling of locomotives and cab control cars throughout the system to our three installation facilities, then on to testing at other locations, and then back into service.

This is a complex logistical ballet, and it significantly reduces the rail vehicles available for daily service. And it means some of the already-depleted locomotive engineering force must be diverted to complete PTC car movements.

I want to stress to our customers that when we complete our PTC installations we will begin to reintroduce these regular rail services.

To sum up, we have made significant progress since the start of the year, and we continue working to meet the milestones still in front of us in order to reach our December 31st requirements and the 2020 schedule.

Chairman Thune and members of the Committee, thank you for providing me the opportunity to discuss these matters with you today.

Now I am happy to take your questions.

The CHAIRMAN. Thank you, Mr. Corbett.
Mr. Naparstek.

**STATEMENT OF SCOT NAPARSTEK, EXECUTIVE VICE
PRESIDENT AND CHIEF OPERATING OFFICER, AMTRAK**

Mr. NAPARSTEK. Good morning. I wish to thank Chairman Thune and Ranking Member Nelson for hosting this important discussion on Positive Train Control.

My name is Scot Naparstek, and I am Amtrak's Chief Operating Officer. I joined Amtrak in 2012 and oversee 17,000 hard-working employees of Amtrak's operating departments. Our workforce does a great job, and I am proud to represent them at this hearing.

Today, I will provide an update on PTC, including its operation on Amtrak-owned infrastructure, on other host infrastructure, and our tenants' PTC operations on our infrastructure. Amtrak has long been a leader in the installation of PTC, having already deployed systems where we control the tracks. We have been operating PTC on the Northeast Corridor since December 31, 2015, and added the Harrisburg line on March 2016. Amtrak is committed to running the safest intercity passenger rail system we can for our customers and employees, which requires PTC or PTC equivalency.

First, let me discuss the most straightforward scenario: Amtrak trains operating over Amtrak infrastructure. In this case, Amtrak plans to be fully PTC-ready and compliant by the end of the year. We developed a detailed plan for every portion of our network, and we are executing an aggressive yet realistic plan which will enable the remaining third of the route miles to be complete by December 31, 2018.

Second, I would like to discuss those places where Amtrak is a tenant on other hosts' infrastructure. Fact, 96 percent of our route miles are over tracks owned and maintained by other railroads. For those tracks, we are cooperating with our partner freight and commuter host railroads as they work to complete PTC installations. We are currently interoperable with five hosts. We anticipate several more before the deadline, although this is dependent on host readiness. We expect there will be 42 segments across our network where the host PTC system is not ready for service by year's end. And if they meet specific criteria, they will be able to apply for an alternative schedule. This includes all the portions where PTC is mandated by law but not ready by the deadline.

Additionally, the FRA permits railroads to seek mainline track exclusion addendums if the operation meets certain criteria. Consistent with our safety management system methodology, we are conducting detailed risk assessments, developed risk-mitigation measures addressing those areas without a functional PTC system.

While this risk assessment mitigation plan development is still underway, let me be clear that Amtrak's goal is to continue to operate all of our services over all of our current routes on January 1, 2019. How we accomplish this will vary across their network, based on specifics of each route. At this time, we believe we will have strategies in place that will permit continued operations until PTC or PTC equivalency is achieved everywhere.

Third, there are several freight and commuter railroads that operate over Amtrak's infrastructure. For those railroads that require an alternative schedule, Amtrak will work with FRA and each railroad on a case-by-case basis, ensuring their continued safe operations. Amtrak's goal is for all our tenants to have operational PTC as soon as possible. However, we are aware that disruption of commuter service when tenants are not PTC-ready also has potential safety consequences. Amtrak is working closely with these tenants to explore risk-mitigation strategies that could be applied until they are fully operable.

Amtrak has worked for years to be ready for the upcoming PTC deadline. When 2019 arrives, we will have our track, computer, training, and locomotive work complete and operating PTC across all the tracks we control. On January 1, 2019, we anticipate that 90 percent of our trains across the entire network will operate with PTC protection along some or all of their routes. We expect the FRA to grant the remaining portions an alternative schedule or an MTEA.

FRA informed Amtrak that we are required to apply for an alternative schedule, since some of our tenants will not be operational. Full implementation status cannot be achieved until all tenants operating on Amtrak's PTC-equipped lines are also PTC-compliant. This alternative schedule will enable us to continue operating with compliant tenants while the finalized testing of our systems with the systems of our hosts and tenants.

PTC is not a silver bullet, and railroads alone cannot solve all the safety issues, such as grade crossing and trespasser accidents, which require efforts from local, State, and Federal stakeholders. Still, we are confident that achieving PTC or PTC-equivalent levels of safety across our network will be a major safety achievement. It is our goal to be the safest passenger railroad in North America.

Thank you for the opportunity to appear before you today, and I welcome your questions.

[The prepared statement of Mr. Naparstek follows:]

PREPARED STATEMENT OF SCOT NAPARSTEK, CHIEF OPERATING OFFICER,
NATIONAL RAILROAD PASSENGER CORPORATION

Introduction

Good morning. I wish to thank Chairman Thune and Ranking Member Nelson for hosting this important discussion on Positive Train Control (PTC). My name is Scot Naparstek, and I am Amtrak's Chief Operating Officer. I joined Amtrak in 2012, and currently oversee Amtrak's operations, including the Transportation, Engineering, and Mechanical departments, and their nearly 17,000 hardworking operating

employees. Our workforce does a great job and I am proud to represent them here today, on behalf of our President and Chief Executive Officer Richard Anderson, who previously testified before this Subcommittee in March of this year.

PTC represents an essential next step for the rail industry to improve safety of train operations, and it will make the entire U.S. rail network safer for passengers, railroad employees, and the cities and towns through which the national rail network traverses. Thus, we have developed a policy of network-wide PTC or PTC-equivalency at Amtrak. Simply stated, we believe that all of our trains and routes should eventually be equipped with PTC or employ some other equivalent suite of technology and operating practices that addresses the safety risks that PTC helps to mitigate. Given the tragic incidents Amtrak has experienced since the PTC mandate was enacted in 2008, particularly relating to over-speed situations which are a risk regardless of the amounts or types of traffic using a specific route, we think this is the safest course and the right standard for the Nation's intercity passenger rail carrier.

Amtrak has long been a leader in the installation of PTC, having deployed systems where we control the tracks. We have been operating on the Northeast Corridor (NEC) since December 31, 2015 and on the Harrisburg line since March 2016. Amtrak is committed to running the safest intercity passenger rail system we can for our customers and employees.

Overview

Today, I will provide an update on PTC, including its operation on Amtrak-owned infrastructure, Amtrak's PTC operation on other hosts' infrastructure, and other tenants' PTC operations on Amtrak-owned infrastructure.

As we have discussed with you before, PTC systems are designed to provide protection from the following conditions: train-to-train collisions; operating over misaligned switches; over-speed events; and work zone incursions. While we acknowledge that PTC is complicated and difficult to implement, Amtrak has made significant progress implementing PTC across the routes and equipment we control. As of September 24, 2018:

- 91 percent of the minimum number of Amtrak-owned locomotives required for revenue service are fully equipped and PTC operable,
- 126 of 142 installations on 114 state-owned locomotives and cab cars that Amtrak operates or maintains are complete, and 57 are also tested, and PTC operable,
- 8 of 11 installation/track segments completed,
- 132 of 140 radio towers fully installed and equipped,
- 100 percent of employees trained as required per the PTC Implementation Plan to run in revenue service,
- 607 of 901 route-miles in PTC operation, and
- 480 route-miles in testing.

We are proud of the work we have accomplished thus far and remain focused on the work ahead to advance PTC as soon as possible.

Amtrak's Operations Are Unique

In many ways, the installation and deployment of PTC reflects the complicated nature of railway operations in the United States. Multiple companies and agencies must cooperate closely to ensure the safe, reliable, timely operation of various types of trains across differing networks. To integrate PTC into this complex environment has been a significant undertaking for the industry and its suppliers. Amtrak and its industry partners remain eager to bring this technology online, but there is no way around the fact that it is a difficult process and has required the dedication of significant resources, both in terms of funding and of our personnel. Over the last few years Amtrak and many other railroads have worked to develop complicated deployment plans, and then rethink them, as various limitations became apparent.

At a scale unlike any other carrier in North America, Amtrak operates over a large and complex network of various host railroads and is also a host itself to numerous tenants. Our unusual role within the industry reflects our unique origins, and while this presents a wide range of challenges, it also creates opportunities for us to serve as a leader in a number of important ways. For example, earlier this year Amtrak organized and hosted PTC summits in Seattle, Washington and Chicago, Illinois, which brought together freight railroads, commuter railroads, government agencies, and vendors to focus on the challenges of PTC implementation in those regions. These events have been followed by an ongoing series of regular calls that have allowed the participants to learn from one another, to share their latest

developments, to coordinate testing schedules, and to work through all sorts of unexpected issues.

Amtrak has also worked hard to share our PTC expertise with our partners. We have done this in ways both large and small, but two quick examples include: preparing to install and commission PTC equipment on thirteen locomotives for the North Carolina Department of Transportation, ensuring those units will be ready in time for the deadline; and conducting an engineering survey of the new Siemens Charger locomotives that belong to the Illinois Department of Transportation, so that they could fully understand what they need to do to equip that fleet to become PTC-ready.

Our work across all these fronts and with so many partners has enabled us to make significant progress, but it has also revealed a number of limitations and bottlenecks. System federation and the subsequent interoperability testing of the Interoperable Electronic Train Management System (I-ETMS) PTC system are complicated tasks. By definition, they depend on coordinating with external partners who are facing their own time and resource constraints. As we have worked through these issues, we have learned much that we expect will streamline the work involved in the remaining portions.

Another issue that was raised in March's hearing that has continued to present challenges is the limited number of vendors available to support the industry. While Amtrak has developed significant PTC expertise in the last few years, there are still times when we would appreciate the ability to better utilize additional vendors to expedite the installation, configuration, and testing of various PTC components. There is simply not a deep reservoir of relevant expertise available to the rail industry, which has resulted in all of the railroads turning to the same small number of vendors seeking the same resources. To work around this, we have worked hard to foster the necessary skills inside of Amtrak, and we will continue to do so, but that is a slow and expensive process.

Looking ahead to the upcoming December 31 deadline, let me address three important environments so that you can fully understand where Amtrak stands with its PTC deployment.

Amtrak PTC Operation on Amtrak-Owned Infrastructure

First, the most straightforward scenario Amtrak faces is when Amtrak trains operate over Amtrak infrastructure. In this case, Amtrak plans to be fully PTC ready and compliant by the end of this year.

Where Amtrak owns or operates the infrastructure, Amtrak is responsible for all elements of the PTC system. These rail lines include the following: 397 miles of the 457-mile Northeast Corridor mainline between Washington and Boston; 105 miles between Philadelphia and Harrisburg, Pennsylvania; 232 miles between Porter, Indiana and Dearborn, Michigan; 94 miles between Schenectady and Poughkeepsie, New York; and 61 miles between New Haven, Connecticut and Springfield, Massachusetts. We also own or operate another 12 miles of track near our terminals, for example, in Chicago and New York. These segments total 901 route-miles. Currently 605 of them have at least one wayside PTC system installed and operational. We have developed a detailed plan for every portion of our network, and we are executing an aggressive yet realistic plan which will enable the remaining third of the route-miles to be complete by December 31.

In some places where we host tenant operations over our tracks, at the freight railroads' request, we are installing the freights' standard I-ETMS PTC system on our infrastructure in parallel with either our Advanced Civil Speed Enforcement System (ACSES) or ITCS system, which will eliminate the requirement for them to install either ACSES or the Incremental Train Control System (ITCS) PTC equipment on their locomotives. Locations where this occurs include along the NEC between Washington and Philadelphia, along the Keystone Line between Frazer and Harrisburg, Pennsylvania, and the eastern, Michigan-owned portion of the Michigan Line between Kalamazoo and Dearborn. 345 miles, or roughly two-fifths, of our 901 route-miles will be equipped with dual PTC systems.

Amtrak is dedicating significant attention to the segments where PTC installation is not yet complete, such as the Springfield and Hudson Lines. We hold regular cross-department meetings to ensure rapid coordination in our efforts, as we are giving this work the highest priority. While the timeline for these segments is indeed tight, we are planning to complete these projects by the December 31 deadline.

For Amtrak locomotives, the process starts with installing the necessary equipment for one or, in some cases, two different PTC systems, and then running each unit through the necessary tests to ensure the proper functioning and integration of the various elements, which we call "commissioning." Given the need for multiple PTC systems in individual locomotives, we have added 535 systems to 443 units,

and have completed commissioning on 459 of them. Again, we have developed detailed plans and are confident we will have the commissioning work done in time for the December 31 deadline.

So much of the discussion around PTC relates to the hardware, that sometimes we do not properly convey how important training is to the successful rollout of PTC across our operations. To ensure our workforce is ready, we will need to provide training to, and ensure the successful completion of, 5,142 qualifications. All of those qualifications are complete. As some employees will need to be trained on multiple systems, the number of qualifications is higher than the specific number of people being trained. Of the overall total, 70 percent are for the train and engine crews who operate the trains, with dispatchers, maintenance of way, and mechanical forces making up the remainder.

Amtrak PTC Operation on Other Hosts' Infrastructure

The second operating environment I would like to cover is where Amtrak is a tenant on other entities' infrastructure. Since Amtrak runs 96 percent of its route-miles over tracks owned and maintained by other railroads, we have spent a great deal of time and effort preparing for PTC operations on such areas. For the tracks we use but do not own or control, we are cooperating with our freight and commuter host railroads as they advance their obligations to complete PTC installations. In these models, Amtrak is responsible for the locomotive portion of the PTC system, which I have already addressed. We are currently interoperable with five hosts and we anticipate several more before the year-end deadline, although this is dependent on each host railroad's readiness.

In places where the host's PTC system is not anticipated to be ready for service by year's end, if they have made sufficient progress with installation, they will be able to apply for an alternative schedule. We anticipate this being the case on 42 segments across our route network.

We have stayed in close contact with the various hosts to keep apprised of the status of their PTC installation work, and the best information we have now suggests that approved alternative schedules will be in place for all of the portions of the network where PTC is mandated by law and is not available on January 1, 2019. Additionally, the FRA permits railroads to seek Mainline Track Exclusion Addendums (MTEAs) if the operation meets certain criteria. An MTEA waives the requirement for a railroad to install PTC.

To prepare for operations where PTC is not in service, we have been conducting detailed risk assessments to enable us to develop an appropriate array of risk mitigation measures to address those areas that are not mitigated by a functional PTC system, consistent with our Safety Management System methodology. Starting in late spring, our safety team began a detailed, cross-departmental process of reviewing every portion of our network falling in one of two categories: places where an MTEA is present or places where we had reason to believe PTC is mandated but the railroads will qualify for an alternative schedule. Ten members of the safety team lead these assessments.

They work with their Engineering and Transportation colleagues to develop detailed profiles of each location under review, covering at least 4,200 miles of track. Each assessment defines the segment under review, with an emphasis on the physical characteristics of the territory, including elements such as curves and speed restrictions. In these instances, our Engineering department is performing analyses of the sections of routes that have an approved MTEA using data acquired from specialized train cars that take curvature and super-elevation measurements of the track geometry. We then review the results of this analysis to determine if there are any curves or other locations where additional mitigations may be warranted to ensure that trains are operated in accordance with Maximum Authorized Speeds. We also review facing point switches as part of an inventory of the switches traversed in each direction on each route. In the course of this inventory, we identify the means by which the switch is controlled and what, if any, safeguards are already in place to warn dispatchers and approaching trains of a misaligned switch.

The assessments also address operational factors and local traffic volumes and traffic mixes. As the assessment is conducted, the team quantifies potential risks both in terms of likelihood of occurrence and the potential severity. This methodology is based on the means of assessing risk contained in the Department of Defense Standard Practice for System Safety contained in MIL-STD-882E, which is widely known and referenced by Safety Professionals. The assessment team then develops operational and technological recommendations to reduce risk in the near-, middle-, and long-term, and works with Amtrak leadership to ensure there is a clear, organization-wide understanding of the results before any approvals are sought to adopt the recommendations. These assessments are being worked through

as quickly as possible while ensuring the quality of the work, and those covering MTEA territory are slated to be complete by the end of October, with the rest by the end of the year. As this work is all above and beyond statutory requirements, the timing is driven by our own Safety Management System approach.

The central value of these assessments will be their role in determining what mitigations will be necessary to adopt for a given location over a given period to ensure Amtrak has a high degree of confidence in our ability to operate the safest possible railroad, short of the installation of PTC. We envision these potential mitigations in three tiers or layers.

The first is made up of changes to our operations, which may go beyond compliance with the host railroads' rulebooks to create a greater safety margin for our operations. These changes, most of which could be implemented almost immediately, could include reducing the maximum speed of our trains, further reducing speed when we approach facing point switches, or even changing the composition of our crews. In some cases, these changes may impose delays on our trains, but we believe that the additional level of safety is justified.

The second level of potential mitigations would be technological in nature but would take the form of relatively simple infrastructural changes that could be installed fairly quickly to add additional safety measures. Examples of such mitigations include warning signs for the crews, or new switch position indicators, both of which would provide additional situational awareness for our employees. The idea is to add these additional layers of mitigation to the system, which may then allow us to remove or minimize some of the more inconvenient operational mitigations we initially put in place.

The third and final layer of mitigations consists of more elaborate technological solutions that would take more time to develop and deploy. In many cases, we may determine that a full PTC system is the best long-term solution to strengthening safety on a given route. In other cases, we believe there may be various technologies, that when coupled with the other mitigations I have mentioned, could offer what we term "PTC equivalency" once they were ready. Many of the ideas in this category are in early stages, and still have significant operational and procedural issues that will need to be resolved. Nonetheless, we are determined to be open to innovative approaches to obtaining the benefits of PTC across all of our network.

While this risk analysis process and mitigation plan development is still underway, let me be clear that Amtrak's goal is to continue to operate all of our services over all of our current routes come January 1, 2019. Exactly how we accomplish this will vary across our network, based on the specifics of each route, but I want to assure the Committee that, at this time, we believe we will have strategies in place that will permit us to continue operations until operational PTC or PTC-equivalency is achieved for all of our network.

Other Tenants' PTC Operations on Amtrak-Owned Infrastructure

Third, there are several freight and commuter railroads that operate over Amtrak's infrastructure, and for those railroads who may require an extension from the FRA, Amtrak is prepared to work collaboratively with the FRA and each railroad on a case-by-case basis with the aim of ensuring their continued, safe operations.

Since the passage of the Rail Safety Improvement Act of 2008, Amtrak has worked closely with all NEC commuters to define the ACSES design requirements. As the pioneer, Amtrak has led the way with designing, testing, and implementing this system. We regularly share the lessons we have learned with the commuter railroads. Additionally, we share all of our documentation, including hardware and software variance approvals, FCC license approvals, our PTC ACSES Implementation Plan, and our PTC ACSES Safety Plan. We have provided all of our testing information and documentation to the commuters to help them develop their own test plans. We work carefully at the boundary locations between our systems and those of the commuters. Amtrak has set the standards for all ACSES PTC on the NEC.

These various freight and commuter railroads that operate over our infrastructure must equip their rolling stock with PTC for use on our railroad and we are working cooperatively with them to advance these tasks. This cooperation, where applicable, primarily takes the form of linking our server system with the server systems of each tenant. Additionally, we then conduct interoperability field testing to verify the proper functioning of all the elements to enable both Amtrak and the tenant to develop confidence that the systems are working as intended.

Along the NEC, we have ten tenants that will use Amtrak's ACSES PTC system, and another two tenants that will use the freights' I-ETMS system. This is another example of how the PTC tasks facing Amtrak are complicated by the wide range of rail partners with whom we interface. Off the corridor, we also have one freight

railroad that will operate over our tracks using both I-ETMS and ITCS, and three freight railroads and one commuter railroad that we host that will use I-ETMS only, so there are many different integrations that all must be verified for the whole network to be ready. Presently on the NEC, our tenants Connecticut DOT, CSX, MBTA, SEPTA, and the Providence & Worcester Railroad have completed implementation and are currently operating with fully functioning PTC on our routes. MARC and Norfolk Southern will both be I-ETMS ready, but it is not clear yet if everything for PTC operation will be in place before the deadline. Our sense is that NJ Transit has significant work facing it before it will be PTC operational.

Amtrak believes strongly in the value and importance of PTC and our aim is to ensure that all of our tenants have an operational system as soon as possible. Having said this, we are mindful of the impacts that any disruption of commuter service may have on the regions we serve and the potential safety consequences that could follow. Thus, Amtrak is continuing to work with the FRA and any tenants who believe they may be at risk of not having fully completed the installation and commissioning of PTC equipment on their trains for use on our tracks. We will work with these carriers and the FRA to explore, through our Safety Management System process, the potential of risk mitigation strategies that could be applied in such situations until full installation and commissioning is achieved.

Next Steps

Amtrak has worked for years to be ready for the upcoming PTC deadline. When 2019 arrives, we will have our track, computer, training, and locomotive PTC work complete and we will be operating PTC across all of the tracks we control and across much of the host railroad network. Already 222 of our 315 daily trains currently operate with PTC protection along some or all of their routes. On January 1, 2019, we anticipate that this number will climb to 283, or 90 percent, with only those portions of the network which have been granted an alternative schedule or an exemption by the FRA being without the protection of this system for our trains.

Having said that, given the difficulty of completing testing with so many freight and commuter partners and the potential for some limited technical issues to arise during testing of the sort that often accompany the initial operation of any complex technology, Amtrak will be required to submit an application to the FRA for an alternative schedule to enable us to continue operating while we finalize testing of our system and the systems of our hosts and tenants. This alternative schedule is required due to the FRA's interpretation of the law that full implementation status cannot be achieved until all non-Amtrak trains operating on Amtrak's PTC-equipped lines are also PTC-compliant. However, to be considered fully implemented requires that all other railroads operating across any of Amtrak's PTC-equipped lines must be capable of operating with Amtrak's PTC system. This interoperability of PTC systems between railroads remains a work in progress and we are currently working with each railroad to assess this work, so we can determine the appropriate alternative schedule durations. In addition, as I mentioned, we will implement mitigation measures that we develop for all those areas which will not have operational PTC due to a host's alternative schedule of PTC exemption.

Strengthening safety is a continuous process. Amtrak's responsibility is to lead safety across our industry and serve as good stewards of the vital resources that we receive from Congress and the Administration to help us implement these advancements. Likewise, PTC is not a silver bullet and railroads alone cannot solve all of the safety issues that face us, such as grade crossing and trespasser accidents, which require a broader effort of local, state, and Federal stakeholders to educate motorists and pedestrians, better equip vulnerable crossings, limit public access to rights of way, and strengthen enforcement. Still, we are confident that achieving PTC or PTC-equivalent levels of safety across our network will be a major achievement in the safety performance of intercity passenger rail. One need look no further than our accident history to see the universal benefits that PTC can bring to Amtrak and our industry. We look forward to continuing to work with all of our partners to improve safety across the rail network.

Conclusion

I have the highest confidence in Amtrak's dedicated workforce and the commitment I see across our company to become the safest passenger railroad in North America. While the challenges described today are difficult, they can, and will, be overcome. At Amtrak, we owe our customers, and your constituents, nothing less.

Thank you for the opportunity to appear before you today, and I welcome your questions.

The CHAIRMAN. Thank you, Mr. Naparstek.

We'll get right into it.

Ms. Fleming, as you and Mr. Batory testified, FRA's last quarterly report identified nine railroads most at risk of not qualifying for an extension by December 31. Based on GAO's review of those nine railroads, could you speak to which railroads are most at risk of not qualifying for an extension, and whose failure to qualify would have the largest impact on commuters?

Ms. FLEMING. Mr. Chairman, as you mentioned, there are nine commuter railroads that FRA has identified at risk because they have installed less than 90 percent of their equipment. Six of those have installed less than 75. So, they obviously have a lot of work to do to meet the December deadline. However, the size and complexity of the railroads vary. ACE, for instant, is a tenant-only railroad, so it only has a few locomotives to equip, where my colleague, NJ TRANSIT, here, has a lot more to do. They are obviously the largest railroad on the list. They are the third-largest railroad in the country, based on ridership. So, they have about 122 more locomotives to equip. And if you do the math, they've been able to do about 30 a month, with a very accelerated pace, so I think it's going to be really challenging for them to meet the December deadline. And, as schedules get more and more compressed, more impact to service is likely.

The CHAIRMAN. And based on all the information you've seen, are you expecting these railroads ultimately to fail to qualify for an extension?

Ms. FLEMING. You know, that's hard to say, because some folks can meet their time-frame in an accelerated pace. However, they're all vying for the same vendors. There are a limited number of vendors. And they have certain criteria to meet in order to qualify for the extension. Again, not all railroads on the list are as large as New Jersey. Most of them have just a—more equipment or installation along tracks. New Jersey, I think, has the biggest mountain to climb.

The CHAIRMAN. Mr. Corbett, I understand that NJ TRANSIT is making progress toward PTC implementation every week, as you pointed out in your remarks. Do you expect NJ TRANSIT to fully install all PTC hardware on the remaining 122 vehicles by the 2018 deadline and qualify for an extension?

Mr. CORBETT. Yes, I do. At least that number.

The CHAIRMAN. OK.

Ms. Fleming, based on GAO's review of PTC implementation, do you have thoughts or further insight you could provide on the feasibility of NJ TRANSIT's plan to complete its vehicle installation and qualify for an extension?

Ms. FLEMING. You know, again, I think, in the past 6 months, they deserve credit because they've had a fairly accelerated pace. But, again, they've only been able to do 30 locomotives. They have 122 more to do. They're having to deal with vendor and even engineer shortages. And, at the same time, they have to balance ongoing operations while trying to get all this done. So, with compressed timeframes, I think the likelihood of further service reductions, and even cuts, is likely. And NJ, like other railroads, does not currently have a contingency plan. So, I think that leaves that as a question: If they don't meet the December deadline, what does

that mean? And I asked my colleague, FRA, because I think we've been trying to get clarity about what is FRA's game plan if a railroad like NJ does not meet the December deadline.

The CHAIRMAN. Yes.

And, Mr. Corbett, if you fail to qualify for an extension, what extent do you expect further service disruptions?

Mr. CORBETT. I think the service disruptions that I alluded to, critically, that we've had already and that we'll be implementing on October 14. They are painful for our customers, no doubt about it. As a regular commuter myself, I certainly can relate to that. But, the—it's an existential threat. We take it that way. And we fully expect to be able to make that—make the deadline. And those service cuts are, indeed, painful, but necessary.

The CHAIRMAN. Mr. Naparstek, where NJ Transit operates over Amtrak-owned track, does Amtrak have any specific mitigation or contingency plans in place as it relates to NJT's qualifying for a PTC extension beyond the end of the year?

Mr. NAPARSTEK. So, you look at where NJ Transit runs on Amtrak—they're our tenant, and us being the host—we will apply for an alternative schedule that, by what we've been informed with the FRA, will also qualify NJ Transit. We have been encouraged by the progress we've seen over the last 6 months. However, we've also began to work with NJ Transit on risk mitigation, so we've had several meetings, and we'll continue. Our plan is to run NJ Transit as safely as possible, come January 1, 2019, on our territory.

The CHAIRMAN. Mr. Batory, could you speak to what would happen, this was mentioned earlier by Ms. Fleming, from a service perspective, if a railroad fails to qualify for an extension? For example, would service be expected to cease for the noncompliant railroad? And how would FRA be enforcing any such requirements?

Mr. BATORY. Thank you, Chairman.

First, let me make this statement. It's a statement of fact. America's railroads are safe today. We have a quarter of a million Americans that operate and maintain today's railroads. We dispatch nearly 30,000 train and engine assignments every 24 hours. Now, that represents over 10 million assignments a year. And if you put it in context to the airline industry that flies 16 to 17 million flights, the railroad industry is very safe.

Now, after I make that statement, one accident is one accident too many. And the railroads that are operating today are required to have PTC in place, will continue to operate in accordance with the rules and regulations set forth before them, as well as their timetables, their operating rules, and their bulletins, and their special instructions. There will not be any cessation of service unless that carrier elects to do it, itself. But, the FRA will not, and does not, have the ability to impose that type of action after 12/31/18.

The CHAIRMAN. How about assessment of penalties, though?

Mr. BATORY. When it comes to penalties, you know, this has been a 10-year journey. It has been like a soap opera. And we need to bring a conclusion to it and get PTC 1.0 behind us. And when I look at the regulatory fine schedule, it's hard for me to rationalize anything less than the maximum fine, which is, roughly, about \$27,000 a day. So, if you were to extrapolate that on an annualized basis, it would represent about 9 to 10 million dollars. Now, hope-

fully, nobody's going to run the clock out that far. And hopefully, nobody's even going to get past 12/31/18. But, if they do, I would recommend nothing less than what I've sometimes referred to as full retail.

The CHAIRMAN. OK.

Senator Nelson.

Senator NELSON. Mr. Batory, I think trains are safe, just like I think airplanes are safe. And I ride on both, a lot. But, since Positive Train Control has been such an agonizing thing for us to get the railroads to complete, have we not seen accidents that would have been prevented, had there been PTC?

Mr. BATORY. Yes, Senator Nelson, there have been some accidents that could have been PTC-preventable. That is correct. The one that, unfortunately, involved the train between your home state and New York City, that happened in Cayce, South Carolina, was, by the strictest interpretation—and it's hard for me to say this, but it was not PTC-preventable, because the system—the signal system that was in place was approved to be temporarily abandoned rather than installing a signal suspension system. And that set up the stage for a human error that allowed a head-on collision.

Senator NELSON. Had PTC been in effect on that or on the one that happened between here and New York, would that have saved that collision?

Mr. BATORY. It definitely would have. Yes, sir.

Senator NELSON. Mr. Naparstek, what is the status of PTC implementation of Amtrak in Florida?

Mr. NAPARSTEK. At this point, in Florida, we are working with our hosts. We will be PTC-ready. We believe our hosts will be granted an alternative schedule. And then, when they are ready for interoperability testing, as soon as they are ready, we'll be ready to test with them.

Senator NELSON. So, that means there will be a delay?

Mr. NAPARSTEK. Likely be under an alternative schedule for much of the track in Florida.

Senator NELSON. Is that what "alternative schedule" means?

Mr. NAPARSTEK. Yes.

Senator NELSON. It's a delay past the deadline of December 2018.

Mr. NAPARSTEK. Yes.

Senator NELSON. Do you think that's acceptable for Amtrak?

Mr. NAPARSTEK. It is not our preferred, which is why what we will be doing—anywhere that we will be running, on January 1, 2019, that is—either been provided an exemption under the MTA provisions of the FRA or an alternative schedule, we will be doing, through our own safety management system risk-assessment process—we are doing risk assessments today, and we want to level—we want to raise the bar on safety for those routes.

Our goal at Amtrak will be, over time that we will have PTC or an equivalent PTC technology system in place across all our route miles. That will take us more time, but our goal is, even where we have exemptions or we have alternative schedules, to eventually fill all PTC to make sure all our routes have PTC.

Senator NELSON. OK. You have just described what seems to me like some breaking news, that, since a lot of people ride Amtrak in

Florida, that it's going to be beyond December 2018. So, would you give us a date when PTC is going to be implemented?

Mr. NAPARSTEK. I would have to get back to you, Senator. I really need to check with the host railroads as to when they would be ready.

[The information referred to can be found in the Appendix.]

Senator NELSON. Well, you called it an alternative schedule. What is that schedule?

Mr. NAPARSTEK. It's unfortunately, the host railroad for us. The host railroad applies for the alternative schedule in Florida, and we then go under that.

Senator NELSON. So, is it their fault? Is Amtrak held hostage to the host railroad? And, in this case, who is the host railroad?

Mr. NAPARSTEK. There are at least two different Florida railroads involved.

Senator NELSON. Name them.

Mr. NAPARSTEK. One would be SunRail, and I'd have to get back to you with the second, to be honest.

[The information referred to can be found in the Appendix.]

It escapes me at the moment. But, essentially, when they are ready to—when they have installed the wayside, and when they are ready to test it with us and our locomotives—so, essentially, our role for being able to run on another railroad's PTC system is to have our locomotives ready. And we will have our locomotive ready. We have to wait for their system to be able to communicate with our locomotives.

Mr. BATORY. Senator Nelson, those railroads that you wanted—SunRail is the southernmost piece, going into Miami. You have CSX, and you have Norfolk Southern. Those are the three.

Senator NELSON. OK.

Mr. NAPARSTEK. There's Tri-Rail, as well.

Senator NELSON. Tri-Rail. So, Tri-Rail's in south Florida. Tri-Rail runs between West Palm and Miami. SunRail runs to Orlando, north and south of Orlando. And also, you said CSX, and who was the fourth one?

Mr. BATORY. Norfolk Southern.

Senator NELSON. Norfolk.

Mr. NAPARSTEK. Yes. To clarify, Senator, as well, CSX will actually be ready in two weeks for us to begin testing with them. So, we should have no problem on CSX territory. It's really SunRail and Tri-Rail, for us that we would be running under alternative schedule.

Senator NELSON. So, I would like, if you would submit for the record, please, the number of passengers that travel daily on Tri-Rail and SunRail.

[The information referred to can be found in the Appendix.]

Senator NELSON. And I think those passengers should be fully aware that PTC has not been implemented. And also, I think that they need to have an idea of your, quote, "alternative schedule" of when it is going to be implemented. I think that's the least that we can do to inform the citizens. And I'm just talking about my state. I'm sure other Senators have got situation, particular Senator Blumenthal, in the very heavy traveled Northeast Corridor.

Mr. Corbett, in your testimony, you stated that 7 years had elapsed since NJ Transit awarded a contract. And then, up until 2014, the agency had only one full-time person assigned to PTC. Now, I know you said you started later, but give me your opinion. How is this possible?

Mr. CORBETT. Senator, I don't like to speculate on what motivated people or contractors to do work or not do work. All I can say is that, you know, I assume that they did not take the existential threat that I took, in coming in on end of February, as seriously. Maybe they thought the deadline would move. Whatever. But, I have not—it is not for me—I don't look back on what made their decisions. I've looked to the situation that I arrived in, and what I needed to do to fix it.

Senator NELSON. I think what you're saying is, if it had been a higher priority in New Jersey, that it would have gotten completed quicker.

Mr. CORBETT. Absolutely.

Senator NELSON. OK.

Thanks.

The CHAIRMAN. Thank you, Senator Nelson.

Senator Blumenthal.

**STATEMENT OF HON. RICHARD BLUMENTHAL,
U.S. SENATOR FROM CONNECTICUT**

Senator BLUMENTHAL. Thank you, Mr. Chairman.

A number of us on this side, and others on the Republican side, as well, have been staunch advocates over many years for PTC. And I particularly want to commend my colleagues, Senators Nelson and Klobuchar. Obviously, PTC technology is not a cure-all, it's not a panacea. We've also worked on issues like rail crossings, an area that Senator Klobuchar, in particular, has worked on. And there's still a lot more work to do on all of these areas of rail safety.

Before I ask about PTC, I want to focus, Mr. Batory, on Gateway, which, in many respects, is as important to rail safety as any other issue facing us. There is still no final EIS and record of decision for the Gateway Tunnel Project. Can you commit to us when they will be done?

Mr. BATORY. Thank you for that question, Senator. And being nearly a 20-year resident of New Jersey, I am very familiar with the Northeast Corridor and many of the projects termed "Gateway."

Naturally, when I was confirmed, my interest was stimulated to learn more about where we were with Gateway; in particular, the more profiled infrastructure subjects of Portal Bridge and then the Hudson Tunnel. In—through my learning experience of the facts that I asked for—and I just want to characterize it—when it's the—the Portal Bridge, which is a \$1.6 billion project, from the time the EIS was announced until it was finalized took two and a half years. There was a modification—

Senator BLUMENTHAL. Mr. Batory, I want to apologize to you, because I only have five minutes.

Mr. BATORY. Yes, sir.

Senator BLUMENTHAL. I would like a commitment as to when the final EIS and record of decision for the Gateway Project may be done. This is an issue of national importance. I'm the only member of the Northeast region here. I appreciate that you're a resident of New Jersey. If you can't commit to me now, I would like to ask you to put it in writing to us.

Mr. BATORY. OK. We've currently consumed 28 months. Legal sufficiency is behind us. And we're in the final chapters of reaching final EIS.

Senator BLUMENTHAL. Does that mean it will be done by the end of the year?

Mr. BATORY. I think that you would—could see something probably coming forth—forthcoming during, maybe, first or second quarter of next year, based on what?

Senator BLUMENTHAL. Well, that's a long time and a very vague answer. And, with all due respect, I'd like a more definite answer, if that's possible, from you, in writing. The second quarter of next year is a long time away. Again, very respectfully, I realize that you, personally, can't produce it alone, but it is an issue of vital national importance.

Mr. BATORY. I respect that question, and we will get you an answer.

[The information referred to can be found in the Appendix.]

Senator BLUMENTHAL. Thank you.

I'd like to ask you—Ms. Fleming, you said that you're still awaiting, in your words, "clarity" from the FRA as to what they will do if the deadlines are not met. Mr. Batory said that he would impose the maximum fine, I think, or was inclined to impose the maximum fine of \$27,000 a day. Does that provide clarity? What else would you like to know?

Ms. FLEMING. No, there are obviously advantages and disadvantages to instituting fines, and that's within FRA's purview.

Senator BLUMENTHAL. If you'd turn on your mic.

Ms. FLEMING. Oh, I'm sorry.

You know, I think the railroads are looking for clarity about host/tenant relationships, you know, because, obviously, we heard that that's a big issue for Amtrak and others. What will happen if a rail doesn't meet the deadline or qualify? They're also looking for some understanding about how FRA and we are—we made a recommendation—how they will handle their workload. I mean, there's a lot of things that will be coming to them in the near months for—to meet the deadline: extension substitute criteria testing. The next couple of years, they're going to be getting safety plans. And, quite frankly, they're stretched, like everybody else. And so, I think folks—some railroads said that, "We're pretty far along, but we're going to apply for an extension, because we feel that there's going to be some back-and-forth with FRA, and some delay, because everything they have to do." They have to work with the railroads that are still pretty far in the early stages, trying to get them to move the pendulum, and while they're also reviewing all these documents. Some of these documents are 5,000 pages. It's taken FRA 6 months to a year to review the safety plan. So, we think they should kind of hit a pause button and really put down pen to paper and think about some way to try to target their re-

sources and what are their highest risk, highest priorities? So, I think those are the types of things that we're looking for clarity.

Senator BLUMENTHAL. I think that the Nation deserves clarity. And I appreciate your hard work and the hard work of the railroads that are meeting the deadlines and who are devoting the resources and attention necessary to meet this December 2018 deadline, which, itself, is an extension of past deadlines. So, any further delay seems unacceptable.

Thanks, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Blumenthal.
Senator Fischer.

**STATEMENT OF HON. DEB FISCHER,
U.S. SENATOR FROM NEBRASKA**

Senator FISCHER. Thank you, Mr. Chairman.

Administrator Batory, earlier this year the FRA considered 12 railroads to be at risk of not meeting the PTC requirements for that extension. In August, the FRA lowered the number of at-risk railroads to nine. What changes took place at those three railroads that moved them out of that at-risk category? And are there any lessons to be learned from those three railroads that could now be applied to the other nine?

Mr. BATORY. The primary contributor to getting the three railroads off were centered around equipment installation, both way-side as well as onboard locomotive equipment, where they were behind the curve. Part of this was contributed, as far as the network of to-be-compliant railroads, having a small boutique supply community to draw from. And, as a result, when you find out that nearly 50 percent of the to-be-compliant railroads did not engage a supplier until 2015, you can imagine the demand that they put on that boutique supply industry. So, that's how I would categorize the three that got eradicated.

I know we're pressed for time, but I'll share with you: the remaining nine that we do have are, basically, in California, Texas, Florida, and the Northeast Corridor. And one is already getting a temporary exception. And then, you know, based on what we're learning daily from these railroads, I'm of the belief that we should see further decrease of railroads at risk after third-quarter results come out.

Senator FISCHER. When you say "what we're learning from these railroads," are you encouraging railroads to try and innovate? Is the FRA supportive of railroads so that they can seek to develop their PTC systems for further safety and operational benefits?

Mr. BATORY. We are definitely an advocate insofar as further innovation and building upon and exploiting the value of PTC 1.0. But, we've got to get the first platform in place. There's a lot of enthusiasm, energy to take this technology even further, but, before we take that second step, we have to finish the first steps that we've initiated.

Senator FISCHER. Do you see opportunities for the second step for railroads to be able to innovate new ideas on their own, as long as the FRA is able to validate that those ideas do conform to the regulations?

Mr. BATORY. Yes. And—

Senator FISCHER. So, it's not a cookie-cutter existence, going forward, maybe?

Mr. BATORY. It's not a cookie-cutter. And the other thing that we're very cautious about is giving guidance and input from the collaboration of all of us—the railroads, government, as well as the supply industry—so that we can exploit the benefits of PTC, and keeping in mind that one concern is that technology moves faster than the ink will dry. So, the last thing we need to do is start regulatory proceedings on technology, as far as advancement, because otherwise we're going to suffocate technology in the railroad industry.

Senator FISCHER. The FRA has to review and also issue a decision on the railroads' request for an alternative schedule within 90 days. How does the FRA plan to review and make decisions on the alternative schedule applications that are received either close to or on the December 31 deadline?

Mr. BATORY. Right now, we have an inventory that we're maintaining with all the to-be-compliant railroads. And the alternative schedules, at this juncture, we have eight already in our possession. We expect probably somewhere in the vicinity of four to five this month. November, I can't recall the exact number, but we have commitment, through December, that we're going to have 32. And we're seeking commitment from the balance, and talking to them. Now, as far as the process, we have 90 days from the time in which we receive them. And we're encouraging nothing—we—or, we're encouraging not to receive everything on December 31, because this has a 90-day clock to it and we have a—45 days in which to respond to the applicant, and then 45 days after that to get resolution. So, that's why we're trying to create a queuing, if you will, among all the PTC-compliant railroads so that we don't have an undue burden of workload on ourselves. And, regardless of what we have—and I say this personally, with my own involvement—if you come by the DOT buildings this winter, the lights will be on late.

Senator FISCHER. OK. Thank you, Administrator.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Fischer.

Senator Udall.

**STATEMENT OF HON. TOM UDALL,
U.S. SENATOR FROM NEW MEXICO**

Senator UDALL. Thank you, Chairman Thune, and thank you, Ranking Member Nelson, for convening this hearing.

Positive Train Control, or PTC, technology is an important safety measure both for passengers and for employees of the trains. Mr. Naparstek, in previous hearings, Amtrak has stated—and I—this is a quote, “Amtrak's goal is to continue to operate all of our services over all of our current routes, come January 1, 2019.” That's the end of the quote. I'd like you to clarify, if that means continuing rail service, will Amtrak commit publicly to stop pursuing the proposal of replacing the train with buses for the Southwest Chief for Fiscal Year 2019?

Mr. NAPARSTEK. We are well aware of the Senate's position, as well as the directive that is in Senate's version of the 2019 Appropriations Act. We plan on running the Southwest Chief, as is,

through Fiscal Year 2019. And we await the Congress's dealing with the Southwest Chief issue during conference as well as in the final spending bill.

Senator UDALL. Yes, thank you very much for that commitment. And I think it will make many of the Senators who are here at the dais—Senator Moran and Senator Gardner—we've worked in a bipartisan way to keep this going. We intended to, obviously, go well beyond 2019. But, I reiterate the need for Amtrak to work with the communities impacted to create a real plan for the future of the Southwest Chief.

Amtrak leadership has repeatedly emphasized the need for a significant amount of capital investment for this route. And so, it would be particularly shortsighted to walk away from the \$16 million TIGER grant recently awarded to rehabilitate tracks in southeast Colorado. In light of your stated commitment to continue rail service between Dodge City, Kansas, and Albuquerque, does Amtrak plan on releasing the \$3 million match in order that the \$16 million TIGER grant intended to make the route safer can be released? And, if so, when?

Mr. NAPARSTEK. At this point, we are committed to continue to work with the stakeholders and to try to find successful resolution.

Senator UDALL. And that means you'll release the \$3 million match—Amtrak will release that?

Mr. NAPARSTEK. It means we'll continue to have discussion, at this point, and try to understand the issues.

Senator UDALL. Well, you're not—I ask you to answer the question. I mean, do you—are you making a commitment to release the \$3 million match in order that the \$16 million TIGER grant can also be released?

Mr. NAPARSTEK. What I'm committing to is to continue to have discussion.

Senator UDALL. OK. Well, I think you're going to hear more about that from other Senators here.

The—Administrator Batory, thank you for your discussion yesterday in my office. And I appreciate the efforts of you and your team to ensure that the Rail Runner in New Mexico, our passenger rail service, will continue to operate. As you're aware, Amtrak has threatened to severely damage the Southwest Chief by replacing the trains running from Dodge City, Kansas, to Albuquerque, New Mexico, with buses because of, quote, "safety concerns." But, I'm very skeptical that buses on highways are a safer option. Just this August, we saw a horrendous head-on collision involving a bus in New Mexico, where eight people died, among many other serious injuries. In your opinion, do you believe that PTC must be installed on the track segment in question for the Southwest Chief, even though there are no freight trains operating there? And why should we think that buses would be safer?

Mr. BATORY. Thank you, Senator.

I can't speak to the economic analysis of a train versus a bus. From a safety—

Senator UDALL. Safety.

Mr. BATORY. From a—

Senator UDALL. That's what I want you to—

Mr. BATORY. From a—

Senator UDALL.—focus on.

Mr. BATORY. From a safety perspective, my confidence resides, OK, on rail passenger. OK? It doesn't—

Senator UDALL. You believe they're safer than buses?

Mr. BATORY. Well, it doesn't—you don't need a steering wheel.

Senator UDALL. Yes. Yes.

Mr. BATORY. It's on the rail. And as far as that particular route structure and my familiarization of it, both pre-and post-confirmation, it is a line segment that hosts primarily intercity passenger—Lamy, going east—just west of Lamy, going down to Albuquerque, there's a combination of intercity passenger commuter, and then, once you get into Albuquerque, going down to Belen, there's a sparse amount of freight that comes up from Belen into Albuquerque, and the balance is intercity freight and passenger.

PTC was asked for by Amtrak for an exception, and it was granted, a number of years ago. There was also a request, though, for an extension for New Mexico Rail Runner for PTC because of economic infusion that they needed for the capital. They put together a risk-mitigation plan that was endorsed by Amtrak. It was endorsed by Burlington Northern Santa Fe. It was endorsed by Santa Fe Southern. So, as a result of those three endorsements and our evaluation of that line segment, we granted them a temporary exception.

Senator UDALL. Thank you very much. And I really appreciate your intense interest in this. And I know that you've been out there and toured a lot of the lines and assessed what's going on. So, thank you very much for doing a very good job.

Mr. BATORY. Thank you.

The CHAIRMAN. Thank you, Senator Udall.

Senator Moran.

**STATEMENT OF HON. JERRY MORAN,
U.S. SENATOR FROM KANSAS**

Senator MORAN. Mr. Chairman, thank you very much. Congratulations, to you and the Ranking Member, on what I assume will occur later today, in the passage of FAA reauthorization, a significant victory on behalf of aviation and an indication that Congress can get its work done once in a while. It's nice to get the end of the extensions behind us. So, thank you for your leadership.

Mr. Naparstek, it's fortuitous that I get to follow the Senator from New Mexico. And Senator Gardner is here, as well. This is an important issue for us. Your answer was disappointing to me in regard, particularly, to the \$3 million. I'm pleased to hear you say that Amtrak will continue to run, operate the line in its current form through Fiscal Year 2019. I think that's a positive development, something that we were unaware of. And we'll continue to work to see that the legislative efforts that we've undertaken are successful in the conclusion. My understanding is that Amtrak is not lobbying against our provision. And I would encourage you to continue. And I'd ask you, I guess, to confirm that that's the case. You're not going to work against us providing you money to improve the track and operate the rail line.

The disappointing part is the \$3 million. And it's really the issue that got me interested in this topic. It caught my attention, ini-

tially, because this is the third TIGER grant that has been granted. Amtrak has been a partner in all three of those. It originated in Kansas, followed by Colorado and now by New Mexico. And, in each of those instances, Amtrak kept its commitment to provide a portion to co-work with us and the local communities and the states, who all put in money. Amtrak put in the \$3 million for Kansas. Amtrak put in the \$3 million in the Colorado TIGER grant application. And then you failed, in my view, to live up to your word in following through your commitment in that TIGER grant application. And I would ask you to please come up with a more positive answer to this question about \$3 million. We do not want to lose the TIGER grant money, and it would be a disadvantage to Amtrak in our ability to find the resources to improve the track lines. So, that \$3 million is critical.

And Amtrak says it's interested in working with the partners. I assume that means the railroad, the State of Kansas, the State of Colorado, the State of New Mexico, and the communities along that line. But, you could improve the ability to work together if you kept your commitment on the \$3 million. It really sours, in my view, the conversation. Certainly, my view of Amtrak's good faith would be enhanced if that \$3 million commitment was kept.

Let me ask a question about Positive Train Control, the subject of this hearing. Your CEO, Mr. Anderson, has told members of this committee multiple times, both in person and in writing, that Amtrak will stop running the trains on any track that does not have PTC fully operational by the end of the year. I assume that means that's not true, based upon what you just testified to, because you're going to operate the Southwest Chief through FY19. So, is that a fair summary of what I should think?

Mr. NAPARSTEK. We will—the route in which the Southwest Chief operates on is either PTC-compliant, will be under alternative schedule, or under an exemption, an MTEA. So, we'll be within the regulation. Anywhere it's under an alternative schedule or an MTEA, we will apply the risk-mitigation methodology that I mentioned earlier to do what we can to raise the level. And then our goal will be to become PTC—fully PTC-compliant or PTC-equivalent across the route. If it's an exempted route, we could look at PTC-equivalency as well as compliancy. In many cases, equivalency will be PTC.

Senator MORAN. So, I don't know whether that's a change in Amtrak's official position, because I've been unable to determine what that is. It seems to have changed. In the absence of PTC compliance, Amtrak will continue to not only operate Southwest Chief, that line, but other passenger rail service across the country past December 31?

Mr. NAPARSTEK. If we run into a situation where route fails to either qualify for an alternative schedule, be exempted under the MTEA, or is not PTC-compliant, we can't run. Federal regulation would prohibit it. However, if we have—if the route has met the regulation for either being PTC-compliant, being exempted, or being under an alternative schedule, then we will run. Where we don't have PTC-operable as of January 1, 2019, we have already begun working on the risk-mitigations on the route miles we know.

And there are many underway. And it's something we're working very hard—

Senator MORAN. So, was my understanding of Amtrak's position, which, in my view, has at least been said, although somewhat retracted, that if you're not PTC-compliant, it doesn't matter whether there's a waiver, we're not going to operate passenger service. You're saying that's not true?

Mr. NAPARSTEK. That statement is not—that's not our position.

Senator MORAN. OK.

My time is expired. I hope to stay long enough to continue our conversation. But, I am pleased to hear what you had to say in response to Senator Udall, and I appreciate you clarifying for me: passenger service, in the absence of PTC compliance, will work on the \$3 million, please.

Mr. NAPARSTEK. We are—we think continued conversation is very important with all the external stakeholders. We also think there is a very real and serious financial issue that needs to be addressed.

Senator MORAN. Understood. Thank you.

The CHAIRMAN. Thank you, Senator Moran.

And you only have one more person that'll beat you up on that issue before this is all said and done.

[Laughter.]

The CHAIRMAN. Senator Blunt's up next, followed by Senator Hassan.

**STATEMENT OF HON. ROY BLUNT,
U.S. SENATOR FROM MISSOURI**

Senator BLUNT. Thank you, Chairman.

Administrator Batory, I understand that your previous answer that all railroads would continue to operate, even if they're not in compliance, with a fine up to \$27,000 a day. Will you make them enter into some kind of consent decree that creates a timeline that they have to comply in? Beyond the fine, what do you anticipate doing to see that everybody gets in compliance?

Mr. BATORY. Thank you, Senator Blunt.

At this juncture, I have not contemplated going down that avenue, based on the energy and enthusiasm that I've seen in the past year since I've been confirmed, among the railroads, including the ones at risk. And assessing fines, as we already have been assessing fines, but we'll be able to assess more fines if the situation constitutes itself after the first of the year, I think will be enough of an incentive to get this brought to closure.

One thing, very briefly, I just want to share for everybody in relation to PTC, when I talk about, "Let's just get this thing over with," what I have been able to ascertain through staff—and we do this daily and weekly, OK? But, this is our scorecard. And you can't—you know, it's hard to see, but, when you go through this, the Class 1 railroads, to bring finality to PTC 1.0, they have about another 20 percent to complete, as far as steps. The commuter agencies, which is another group that we look at, is hanging right around 40 percent. Amtrak, okay, as far as host, not tenant, they are right around 80 percent or, excuse me, 70 percent complete. And they have three different platforms of PTC. They have two dif-

ferent platforms in Michigan, and then another platform here on the Northeast Corridor. So, all that said is, I'm beginning to see daylight at the end of the tunnel, but the question is how fast we can get to the end of the tunnel?

Senator BLUNT. I'm assuming that green is good on that chart. There seemed to be a lot of green there, so that is a good thing.

Mr. BATORY. Yes, I deliberately avoided red. And I'm not colorblind. But, when we first started this, there was a lot of white. So, that's what I said. The industry has done a lot of good things, and they should be commended for it.

Senator BLUNT. Do you or anybody else have a view of the liability for either the host or the tenant railroad? If you're using a line that's not your line, who has liability if PTC is not working on that line?

Mr. BATORY. Each railroad has its own respective joint facility agreements with each other. And there's numerous provisions in liability. And it is going to be how the parties address PTC in those respective agreements. But, liability is already outlined in all those joint facility agreements, nationwide, among the railroads. You will not find one railroad operating on another railroad without a piece of paper outlining why it's there and who is responsible for what.

Senator BLUNT. And those agreements are all new enough that—you have no reason to believe that PTC compliance wasn't included in that agreement?

Mr. BATORY. Those are confidential agreements among those business entities, both public and private—

Senator BLUNT. You have no reason to believe that PTC compliance wasn't included in that agreement?

Mr. BATORY. Not at this juncture, because PTC, even though it has been a ten-year journey, these agreements go back, some of them, you know, a century old.

Senator BLUNT. Anybody else have any view on that you'd like to share?

[No response.]

Senator BLUNT. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Blunt.

Senator Hassan.

**STATEMENT OF HON. MAGGIE HASSAN,
U.S. SENATOR FROM NEW HAMPSHIRE**

Senator HASSAN. Thank you, Mr. Chairman. And I want to thank you and the Ranking Member for having this hearing today.

And thank you, to all the witnesses, for being here.

Mr. Batory, as you know, obstructive sleep apnea was a causal factor in two separate commuter train derailments, in September 2016 and January 2017. More than 200 people were injured and one person died, collectively, in these two derailments. Earlier this year, Robert Sumwalt, Chairman of the National Transportation Safety Board, said he was, and this is a quote, "mystified by your agency's lack of action on sleep apnea." I wrote you a letter in February on this topic, which you responded to, stating that there was and this is a quote from your letter, "insufficient data to support a rulemaking at this time." So, how does the National Transportation Safety Board, whose primary job is to provide unbiased safe-

ty recommendations, have sufficient information to know that the Federal Railroad Administration should move forward, here, yet the Federal Railroad Administration does not have sufficient data?

Mr. BATORY. Senator, my understanding, when the proposed rulemaking for sleep apnea was, if you will, pulled down, it was because there's two other vehicles in place. One is on the threshold of emerging that is going to address a holistic matter, the health issue of employees, which would be sleep apnea, diabetic conditions to avoid diabetic coma, things of that nature. And that is going to be in the system safety plan, which covers the passenger sector. We are currently trying to work through some issues with the states and with rail labor. Then there is the risk-reduction plan, which is primarily for the Federal railroads or the freight railroads, excuse me. And that is now in the final stages and should emerge sometime late this year or early next year. And that will address sleep apnea as well as other health issues, as a whole.

Senator HASSAN. That's a somewhat different answer than the one you provided in your letter. So, I am glad folks are working on it, but, when there is clear evidence that the NTSB says really requires or calls for action, it would seem to me you guys could deal with the sleep apnea right away.

Mr. BATORY. In the—

Senator HASSAN. And so, I will look forward to further conversation about this. But, the evidence is really clear that this is something we should be dealing with, and the first letter I got back from you all was saying there was insufficient data. And here, the NTSB says there is.

Mr. BATORY. And also, another favorable subset to that is the fact that many of the entities, both private and public, are already addressing those health issues today without regulation.

Senator HASSAN. Well, I would like to, I will follow up with you on it, because I think it shouldn't be up to private carriers to decide whether they're going to screen or test employees for this. This is a real safety issue, and I think it needs to be treated with a level of urgency by your administration. So, I will follow up with you on that. All right?

Mr. BATORY. Thank you.

Senator HASSAN. I do have another question, and it goes to PTC. You talked a little bit about this. In reviewing the Federal Railroad Administration's Positive Train Control dashboard online, it's clear that there is a huge disparity between rail companies who have complied with the Positive Train Control deadline and those who haven't. In tracking this information, has the Federal Railroad Administration noticed any patterns or trends that will help us uncover why implementing this lifesaving technology seems to be much easier for some railroads and more difficult for others?

Mr. BATORY. Well, from my experience in the private sector, and also the experience that I've garnered in a short time here in Washington, one of the primary contributors—and it had nothing to do with the quality of leadership was, if you will, the absence of consistent, focused leadership. When you look at the commuter agency—

Senator HASSAN. Yes.

Mr. BATORY.—there are railroads, such as SEPTA and Metrolink, that have done an outstanding job. There are others, when you look at it—and its public record—and you see how many times the Chair has turned in leadership, you can imagine what happens when you have changing leadership—

Senator HASSAN. Yes.

Mr. BATORY.—in a rotating basis.

Senator HASSAN. Is there more Congress can do to aid all the railroads to help them reach full implementation? I mean, you've referred to leadership, but are there other things that we really should be doing to get us to full implementation faster?

Mr. BATORY. No, I think your support and sponsorship of what you brought forth through your statutes of 2008 and 2015 suffices and leave it up to the private and public sectors, OK, to deliver what you expect.

Senator HASSAN. Thank you very much.

Thank you, Mr. Chair.

The CHAIRMAN. Thank you, Senator Hassan.

Senator Gardner.

**STATEMENT OF HON. CORY GARDNER,
U.S. SENATOR FROM COLORADO**

Senator GARDNER. Thank you, Mr. Chairman.

And thank you, to the witnesses, for your time and testimony today.

I just want to follow up on the line of questioning from Senators Udall and Moran. Mr. Naparstek, something that I think I didn't quite hear the answer to, Senator Moran had asked you whether or not you would be lobbying against our efforts in Congress to continue work with the Southwest Chief. Was that a yes or a no, you're not lobbying against those efforts?

Mr. NAPARSTEK. We're not lobbying against it, we're waiting for—

Senator GARDNER. OK, so you're not to oppose it or involve in the process to do that?

Mr. NAPARSTEK. No. We've committed to FY19 running the Southwest Chief.

Senator GARDNER. So, a letter from Amtrak to the Colfax County Commission in New Mexico last year ended with this sentence, in the last paragraph, "The advancement of the Southwest Chief improvement project will not only significantly improve our Nation's transportation infrastructure, but will also contribute to the economic competitiveness of the United States." Do you still agree with that assessment?

Mr. NAPARSTEK. I think we agree that service over the line is important. We've got a financial issue that we would like to have discussions with stakeholders on. I think what we've proposed all along wasn't the ending of the service, but maybe service by different means.

Senator GARDNER. Right. So, you're talking about buses. Can you tell me what long route along routes are covered by buses right now?

Mr. NAPARSTEK. Around the Southwest Chief?

Senator GARDNER. No. Any line in the country.

Mr. NAPARSTEK. I could get back to you?

Senator GARDNER. Well, would you ever consider the Northeast Corridor being shifted to buses?

Is there any other long route along this route?

Mr. NAPARSTEK. In terms of the actual line, probably not, given the number of passengers, et cetera.

Senator GARDNER. But, is there any other long-distance route in the country that has shifted to buses?

Mr. NAPARSTEK. I mean, I can get back to you with details. We have bus service along a lot of routes.

Senator GARDNER. But, a long-distance route, like the Southwest Chief, like the Northeast Corridor, there's no other route that has a bus system.

Mr. NAPARSTEK. I mean, I would truthfully, Senator, I would have to look at the route map.

[The information referred to can be found in the Appendix.]

Senator GARDNER. The \$3 million that were promised to the folks on the Southwest Chief, what's happened to that money?

Mr. NAPARSTEK. I mean, I can't specifically talk to \$3 million, per se. Certainly, Amtrak, like any other organization, especially as we're implementing things like PTC, has more than enough needs to exceed the capacity of our resources.

Senator GARDNER. Was that money set aside, though? I mean, because there seems to have been a pledge and a commitment made by Amtrak for this money.

Mr. NAPARSTEK. I can't speak specifically, to be honest, Senator, to that \$3 million.

Senator GARDNER. Do you think it has been spent somewhere else or given back to somebody?

Mr. NAPARSTEK. Well, I mean, I think \$3 million gets utilized in several different ways. I don't necessarily think there's a set-aside \$3 million, as opposed to, is it the \$3 million we should be spending right now? And, frankly, I think our concern still remains the financial viability. We're in a very—

Senator GARDNER. But, don't you think that there was a little bit of a promise made by Amtrak? Don't you think there was some reliance made? I mean, you've had these states spending millions of dollars.

Mr. NAPARSTEK. Yes.

Senator GARDNER. A letter here that says, "Amtrak strongly supports this application as a continuation of the already funded portions of the Southwest Chief route improvement project under TIGER 6 and 7." I mean, don't you think this is a reliance on the word of Amtrak to fund this effort?

Mr. NAPARSTEK. Yes, I can speak to the fact that, where our concern gets into, as the—what will be the sole user over a portion of that railroad, relatively 230 route miles, we would be responsible for approximately 50 to 60 million in capital right off for PTC. We also would become responsible for, I'm going to estimate, and these are strictly estimates another 10 to 20 million dollars to bring the route to state of good repair for the long term. There would be annual operating costs of about 4 to 8 million dollars. These are very real concerns.

When we are in a resource situation, where we always have more things to do, as to, where is the right place to pace that money?

Senator GARDNER. Do you think Amtrak is a national carrier?

Mr. NAPARSTEK. Absolutely.

Senator GARDNER. Does it risk, though, becoming just a regional carrier, or perhaps just an East Coast carrier, if it decides to shift away from routes like the Southwest Chief?

Mr. NAPARSTEK. I think it—I think, as part of our mission, it is our—it is part of what we should be doing to always analyze the routes that we run. It isn't to say that we shouldn't be running intercity across the Nation, but certainly we should evaluate each route and understand what is best. Now, we look at it in moving forward, we have the FAST Act reauthorization coming up. And if we really believe, at this point, that there is any substantial changes to either their routes or to the intercity rail policy, that would be the place for us to introduce it.

Senator GARDNER. I certainly hope that Amtrak will “reach a resolution.” I think a commitment was made by Amtrak to states that put millions of dollars into this through their taxpayers. Their taxpayers are paying for Amtrak as well as the money they've put into this to partner with Amtrak. And I don't think this has been a fair outcome by Amtrak to have withdrawn its support. And I hope that we can get this resolved in that area of the country. If Amtrak is going to be a national carrier, then it needs to be a national carrier.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Gardner.

If Senator Klobuchar asks about the Southwest Chief, I'll know you're having a bad day. So.

[Laughter.]

The CHAIRMAN. Senator Klobuchar.

**STATEMENT OF HON. AMY KLOBUCHAR,
U.S. SENATOR FROM MINNESOTA**

Senator KLOBUCHAR. Thank you very much. No, that wasn't in my plans, but thank you, Mr. Chairman, for holding this hearing. And thanks, to Senator Nelson, as well.

As you all know, the Service Transportation Safety Board has included Positive Train Control on its Most-Wanted Safety List every year from its inception in 1990 until the enactment of the Rail Safety Improvement Act in 2008. And, according to the GAO, only eight passenger railroads anticipate reaching full implementation of PTC by the end of the year. So, we clearly have work to do, here. I know it's important to the people in my state. I will say that the Northstar commuter line is on track in Minnesota to meet 100 percent of its PTC obligations, but that is not the case, as I mentioned, for all commuter lines.

The nationwide implementation of PTC, as you all know, is a complicated process. Mr. Naparstek, as PTC is phased in, can consumers find information from Amtrak on which routes have PTC—are PTC-fully operational?

Mr. NAPARSTEK. We certainly can make that information available, especially as we get closer and closer to the deadline. We—

Senator KLOBUCHAR. OK.

Mr. NAPARSTEK. At this point, we are making judgments based on discussions with the FRA and the various hosts and tenants we work with.

Senator KLOBUCHAR. OK. Thank you.

While railroads have expertise in operations and regional geography, most do not have employees well trained—and we've talked about this before—in the intricacies of PTC, including short-line railroads in my—in Minnesota. They brought this to my attention. This means they're relying on outside experts and consultants to help them meet the PTC deadlines. Because of the high demand, some railroads have reported difficulty finding reliable PTC consultants.

Ms. Fleming, in your reporting, have you found PTC expertise to be a constraint on the railroads' ability to meet their deadlines?

Ms. FLEMING. You know, this continues to be a concern, particularly given the number—limited number of vendors. There are about seven vendors that are out there that have expertise to help design the systems, software and hardware, and to help conduct testing. So, you, basically, have demand exceeding capacity. And this has resulted in some railroads, most recently, ACE, sharing at a testimony that they had to wait a year for their equipment to be installed and delivered. These challenges are likely to continue in the future as people move into the testing phase.

Senator KLOBUCHAR. And how about certifications obligations?

Ms. FLEMING. Absolutely.

Senator KLOBUCHAR. Do you think the FRA has that knowledge?

Ms. FLEMING. Yes. You definitely are going to need to rely on this limited pool boutique, I think, as my colleague has called it—for these very important tasks. And—

Senator KLOBUCHAR. So, how do you think we could resolve this?

Ms. FLEMING. Yes.

Senator KLOBUCHAR. How do you think? Any ideas?

Anyone?

Ms. FLEMING. I don't know how we resolve it. I mean, I think, quite frankly, I think that's why you see so many railroads planning to apply for an extension, because of these issues and other issues. And I think that, you know, they're—for some of these, particularly those that are in the early stages, quite frankly, 2020 may be difficult for them to meet that deadline.

Senator KLOBUCHAR. Mr. Batory, what steps has the FRA taken to ensure railroads have clarity on the interoperability provisions?

Mr. BATORY. Thank you, Senator. And that was a—that's a great question.

Because what we're concentrating on right now, between, if you will, 2015 and 12/31/18, has been the prerequisites necessary to get PTC in place, which, basically, is wayside installation, onboard equipment, what we call, with the freight railroads, 50 percent or more of their lines PTC-equipped. But, getting it to work, not only for the host, which we've seen a great deal of success, interoperability is huge. And we just finished, if you will, taking a read as to how many railroads we've—would populate this interoperability issue. And it's in excess of 250 railroads.

Senator KLOBUCHAR. Wow.

Mr. BATORY. And of all sizes. So, we're amalgamating a group of experts, OK, that are going to disperse themselves both east and west of the Mississippi and then specialize on the Northeast Corridor to concentrate on interoperability. Because part of the 2-year window that we have from 1/1/19 through 12/31/20, you have to have interoperability in place.

Senator KLOBUCHAR. Right. OK. All right.

And my last question—and I'm over my time, but I can do it in writing or talk to you later, Mr. Naparstek, and that's about just rail crossings. And we got a provision, back in the FAST Act to try to find best practices to mitigate risks. And I just wonder if there's been improvement on that?

Mr. Chairman, if you could just have him answer for 30 seconds, here.

Mr. NAPARSTEK. Boiling down rail—or grade crossing, two things. And, certainly, funding would always help there. But, the best grade crossing is one that doesn't exist. So, where we can provide resources to engineer grade crossings that exist out, that is the best solution. The second is, where you can't find ways to engineer out, how do we make sure it has the latest and the best active technology to do its best to protect the crossing?

Senator KLOBUCHAR. All right.

Thank you, all of you.

Ms. FLEMING. Mr. Chairman, may I make a plug? We have a report coming out in November on grade crossings, looking at the factors that affect incidents and accidents, fatalities, what are some of the best practices out there, and what are some of the challenges, and how do we move the pendulum a little bit better. So, that's coming out early November.

Senator KLOBUCHAR. All right. Thank you.

The CHAIRMAN. We'll look forward to seeing it.

Thank you, Senator Klobuchar.

Senator Cantwell.

**STATEMENT OF HON. MARIA CANTWELL,
U.S. SENATOR FROM WASHINGTON**

Senator CANTWELL. Thank you, Mr. Chairman. And I want to thank you, again, and your staff and the Ranking Member Nelson and staff, for getting the FAA bill done. It's a very important bill for infrastructure investment for the United States, both in NextGen and in the airport facilities. And so, so appreciate all the hard work that went into that legislation.

I wanted to ask the witnesses—obviously, there has been some progress by FRA and the railroads on improving PTC implementation. I am concerned that about three-quarters of passenger railroads will be seeking an extension past that deadline. And that's obviously been what some of my colleagues have been asking about. I'm sure many of you were aware of the incident that happened in our state, in DuPont, Washington, when Amtrak Cascade 501 entered a curve that, basically, should have only been 30 miles an hour, but it entered it at nearly 80 miles per hour, and we lost three lives and over 80 people were injured. So, I know that, Mr. Batory, you said in your past testimony, that there was a lack of urgency among some railroads to expand and get this done. What

else do we need to do to make sure that people take this implementation seriously?

Mr. BATORY. I can't speak to the past, but I can speak to the current. As far as this situation being taken seriously, I have no doubt in my mind that it's being taken seriously by all the entities. And part of that is not only what we have done, but what you have done in our—in support of the FRA, plus what you're done directly with some of these entities. So, at this juncture, I am encouraged—

Senator CANTWELL. So, you think the urgency is there, even though we're seeing a lot of extension-seekers?

Mr. BATORY. Yes. And it—I—at one time, people were submitting information to us that would say, "Well, OK, I'll have it all done by 12/31/18," or, "I'll have it all done by 12/31/20." They were treating it like income tax, you know, "I'll just file by 4/15." That has since changed. We have a population of to-be-compliant railroads that are submitting aggressive schedules to us. And we're being aggressive with ourselves, internally.

Senator CANTWELL. Well, I definitely believe in the technology. I also believe in situational awareness, because there is no reason why—on this bypass, my understanding is—and we can ask Amtrak about that—there won't be any run on that Defiance bypass until the PTC is fully tested and operated.

Mr. NAPARSTEK. That is absolutely true. We are at this point, we're projecting beginning to run, potentially and I think WSDOT and Sound Transit have made this announcement in spring of 2019, but we would have PTC fully installed. In fact, for Amtrak right now in the State of Washington, we are fully PTC-operational.

Senator CANTWELL. Except for that—

Mr. NAPARSTEK. But, we actually are not running that bypass—

Senator CANTWELL. Right. Right. And so, that's my point. And so—

Mr. NAPARSTEK. We also will requalify all our crews. We're going to—we have reassessed our entire certification program, and all the crews in Washington will go through the recertification.

Senator CANTWELL. Thank you. Thank you for that. I really do think—obviously, we're so proud of where aviation has been because of implementation of technology. We definitely think this will help here. But, definitely want to make sure that Amtrak is doing good situational awareness training for those on those lines where you don't have PTC implemented yet.

But, if I could just switch over quickly to the rules on highway rail grade crossings. I was just conferring with the Chair. Definitely, our state is on the Pacific, and we are shipping lots of products to the Pacific. It makes the increase in volume so challenging, because we have a lot of at-grade crossings. And I know that FRA is going to create a rule requiring states to submit their own highway rail grade-crossing plans. What is the status of that rule?

Mr. BATORY. The finalization is yet to be forthcoming. It will be a very comprehensive and proactive rule, the—with the states to take, if you will, the next steps that can be advantageous to pro-

tecting the public when they are not totally aware of their surroundings and environment near railroad crossings.

One thing that was very interesting I will share with you is, when we first started inventorying grade crossings, back in the early to mid-1970s, we had nearly 11,000—11–12,000 fatalities a year. We're now under 1,000. It's still 1,000 too many. The Federal Government has contributed nearly \$4.6 billion through the Federal Highway Administration to eliminate grade crossings as well as improve grade crossings. We, nationally, stand on the principles of engineering, education, and enforcement, but that second "E," education, it lives forever, and that's something that we have to concentrate on. And, insofar as engineering, we have to exploit technology and look at other types of technology that we can overlay on our existing grade-crossing protection to make it safer for the general public.

Senator CANTWELL. I know my time is expired. I will just say, Mr. Chairman, so this is so important, because we do need the model from you about what states should use. And this at-grade crossing—in this instance, the city of Lakewood, which sits, you know, on The Point Defiance Bypass that we're discussing, where the incident occurred, they have seven at-grade crossings just in their region. So, it is a lot of challenge for a community. It's right where our Joint Base Lewis-McChord is. And so, there's so much activity there. We need to have the leadership of FRA and working with all of us to make these improvements. So, thank you.

Mr. BATORY. You have my commitment.

Senator CANTWELL. Thank you.

The CHAIRMAN. Thank you, Senator Cantwell.

Senator Cortez Masto.

**STATEMENT OF HON. CATHERINE CORTEZ MASTO,
U.S. SENATOR FROM NEVADA**

Senator CORTEZ MASTO. Thank you.

And let me echo the words of Senator Cantwell. In Nevada, as well, we've had too many fatalities. So, we are looking at some leadership from FRA when it comes to the rule and how we address the rail crossings, make them safe, and you're thinking on this, moving forward. So, just want to make you aware of that. We'll be following that.

Mr. Batory, let me follow up on something. Last conversation, last time we talked, we talked a little bit about spent nuclear fuel and high-level radioactive waste and its shipment across the rail lines. And I need some clarification from you. I understand that the Pipeline and Hazardous Materials Safety Administration has identified this spent nuclear fuel and high-level radioactive waste as a Class 7, and not a Class 6. Is that correct?

Mr. BATORY. Senator, I'll have to get back with you on that. I'm not in a position to answer with facts.

Senator CORTEZ MASTO. OK. Here's my concern. My understanding is that, if it's a Class 7, then the PTC technology is not mandatory. And that concerns me. So, if you could verify that for me and then get back to me and understand why PTC would not be—and the technology would not be mandated for a shipment of

Class 7, this high-level radioactive waste, I would sure like to know that.

Mr. BATORY. Thank you, and I will.

[The information referred to can be found in the Appendix.]

Senator CORTEZ MASTO. Thank you.

Mr. Naparstek, thank you for being here, as well. And this may have come up—and I apologize, I was in another committee hearing, so I wasn't able to be here for the full hearing—but, in Nevada, Amtrak's California Zephyr service is very important for us and our—for our annual ridership. In fact, there's 84,000 rides a year, I know, on the California Zephyr. It's incredibly important throughout the state for transportation purposes for so many people in our urban and rural areas, particularly. I hear about it constantly from State leaders. And so, my—I guess my question to you is—and I know Amtrak doesn't own the track, but what progress has been made on the implementation of PTC with your Class 1 partners in Nevada and through the Zephyr line?

Mr. NAPARSTEK. We will be fully operational on PTC by 12/31/18.

Senator CORTEZ MASTO. Oh.

Mr. NAPARSTEK. By—

Senator CORTEZ MASTO. That's fantastic.

Mr. NAPARSTEK. By the deadline.

Senator CORTEZ MASTO. OK. And will they—will there be any changes in service through this process?

Mr. NAPARSTEK. No.

Senator CORTEZ MASTO. None at all.

Mr. NAPARSTEK. No, none at all.

Senator CORTEZ MASTO. All right. Thank you. I appreciate that.

Ms. Fleming, in the conversation that you've heard today, was there anything else that we should be aware of from your report or anything that's coming out that hasn't been talked about today?

Ms. FLEMING. In terms of grade crossing?

Senator CORTEZ MASTO. Grade crossings, PTC, anything that we should be aware of, moving forward, that hasn't been discussed.

Ms. FLEMING. I think we've hit the big-ticket items. Again, for us, it's—the concern that the railroads and we share is how FRA is going to manage the workload while they work with the remaining railroads. I think the testing phase takes a lot longer than railroads assume. Our analysis shows it takes 1 to 3 years to kind of get through initial testing to RSD, where you're actually in revenue service demonstration. So, our concern is, you don't want to short-change that phase, but, at the same time, the clock is ticking—

Senator CORTEZ MASTO. Right.

Ms. FLEMING.—for a lot of these railroads, and putting the pressure on, as everyone said. So, I think those are the big issues that we've highlighted in our work.

Senator CORTEZ MASTO. Thank you.

Mr. Naparstek, are you familiar with the X Train?

Mr. NAPARSTEK. I have a high-level understanding of that—

Senator CORTEZ MASTO. OK. So, I'm just curious if you can talk to me or all of us about—I appreciate the challenges that you face, moving forward, but could you talk to me about what the imple-

mentation or compliance with the PTC mandate might have for service like the X Train in the future?

Mr. NAPARSTEK. Well, for sure—essentially, it will be between a host and a tenant, but anywhere that the rail requires PTC for them to run new service on their rail would require them to be equipped to run PTC.

Senator CORTEZ MASTO. OK. Thank you.

And I know my time is running out. Mr. Batory—is it “Batory”?

Mr. BATORY. “Batory.”

Senator CORTEZ MASTO. Thank you. For the very certifications and waivers, what are you communicating to the railroads as far as timelines they should expect for your safety professionals to review and respond to the documents?

Mr. BATORY. Exceptions and—OK, let me address exceptions first.

Exceptions is an outgrowth of the statute in the reg. Once the reg. was developed, in 2010–2011, the preponderance of the exceptions were filed in 2011 and 2012. There were a couple that have been filed in the last couple years. Two this year. We’re up to 50. And they’re all permanent, other than for the Rail Runner in New Mexico, which is temporary.

As far as waivers, there are no waivers that we have issued. OK? Now, we are reviewing the documentation for alternative scheduling, which could be construed as a waiver that gets you past 12/31/18. And, in that regard as I said, we already have a schedule for 32 of the 41 to-be-compliant railroads as to when their alternative scheduling requests are coming in. We’re seeking the remaining nine so that we can then allocate our workforce accordingly and get responses back within that 90-day window.

Senator CORTEZ MASTO. OK. Thank you.

I notice my time is up. Thank you so much for being here today.

The CHAIRMAN. Thank you, Senator Cortez Masto.

Senator Duckworth.

**STATEMENT OF HON. TAMMY DUCKWORTH,
U.S. SENATOR FROM ILLINOIS**

Senator DUCKWORTH. I’d like to thank Chairman Thune and Ranking Member Nelson for holding this very important hearing.

And I also want to thank today’s witnesses for an honest and frank discussion about where we are with PTC implementation.

Mr. Naparstek, I want to thank Amtrak for working so closely with my office to advance the Passenger Rail Crew Protection Act that was considered favorably by this committee in August. This bipartisan bill was—of North Dakota, will improve public safety and discourage violence aboard Amtrak trains. And it’s really a commonsense effort that I hope we can expand to other commuter operations in the future.

I also want to thank Amtrak for considering the needs of traveling mothers by installing private and sanitary breastfeeding accommodations at some of its facilities. In fact, I was so pleasantly surprised, when I visited your facility in Chicago, to find more than one breastfeeding location, and including an exclusive breastfeeding pod. And, as a working mom who often travels on Amtrak, I was—such a pleasure to see that.

Included in the FAA Reauthorization Act that is expected to reach the President's later—desk later this week, thanks, in part, to the Chairman's leadership, is my Friendly Airports for Mothers Act, or FAM Act. It requires large- and medium-hub airports to include clean, safe, lactation rooms for nursing moms, separate from bathrooms, in every terminal. And I can appreciate that commercial airports and commuter rail stations are not an apples-to-apples comparison, but I do hope that Amtrak will engage with me to identify ways to ensure that all major Amtrak facilities include appropriate accommodations for breastfeeding women, as you have in the Chicago station. Will you work with me toward this goal?

Mr. NAPARSTEK. Absolutely. We look forward to having discussions and to help with the goal. Fact, we have four lactation stations in place today: Washington, D.C., Philly, Baltimore, and Chicago. A fifth is underway for New York as the renovations continue. It'll be placed in during the renovation process.

I'd also like to personally thank you for the leadership on the bill which helps protect our crews from assault. It's a bill that we've long supported at Amtrak, and, frankly, provides another level of safety for our passengers and for our crews. So, thank you.

Senator DUCKWORTH. Thank you.

Mr. Chairman, I am extremely proud of the hard work and tough choices that our commuter rail system in northeastern Illinois has undertaken to meet its PTC obligations. Metra has consistently met its PTC benchmarks, despite significant budget constraints and one of the most complex rail systems in the Nation. And I recently toured Metra's 47th Street railcar shop, where PTC components are being installed in each railcar. Their skilled workforce is building some of these systems from the ground up, and it's really amazing to see it in action.

Administrator Batory, I'm concerned that the commuter systems that made tough decisions early on, like Metra, investing in PTC when Federal support was not readily available may be put at a disadvantage in the coming months as rail systems that are behind schedule in other parts of the country demand additional resources in order to meet the 2018 and 2020 deadlines. They didn't make the responsible, tough choices like our system did in Chicago. How would you ensure that Federal resources are getting to rail carriers in an appropriate and equitable way so as not to punish those who acted early on meeting their PTC requirements at the expense of their long-term capital plans?

Mr. BATORY. Thank you, Senator. And I agree with everything you just shared. I spent an entire day with Metra and Norm Carlson, the Chairman.

Senator DUCKWORTH. They're great.

Mr. BATORY. OK? They're great people. I've known them for a number of years. And I thoroughly understand what they, along with some other peer commuter agencies, have done across the country. And they, basically, had to requeue themselves, as far as capital demands, and—in satisfying what was before them with PTC.

We, if you will, in a very fair, impartial, nondiscriminatory basis, disseminate information all the time to the private and public sector, as far as funds that can be available through the Federal Gov-

ernment. And I know that that has also drawn the attention of Metra management, Metra board, director, leadership. And, you know, there's for instance, I'll just talk about state-of-good-repair money. When you have a line segment that Metra owns that operates from Chicago Union Station going out toward Fox Lake, they own that railroad. It hosts Amtrak. It fits the criteria. So, there are those types of opportunities. And I'm encouraged with the attention that they, as well as other such agencies, such as NICTD in northern Indiana, as well as what's—has taken place in Boston with MBTA. There is an awareness.

But, you are exactly right, there was money given, if you will, to some of the “lagers.” But, we've got to get PTC in. And, if money is the issue, let's resolve it.

One thing that was very enlightening, though, when—before I was confirmed and we started hosting these face-to-face meetings with all the railroads, there was only two railroads that came through the door and said they needed money. And one was in California, and the other one was in New Mexico. Now, that's not to say the other 39 wouldn't have taken a check. But, those two said they needed a check. So.

But, I share everything you said.

Senator DUCKWORTH. Thank you.

I'm over time, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Duckworth.

Senator Markey.

**STATEMENT OF HON. EDWARD MARKEY,
U.S. SENATOR FROM MASSACHUSETTS**

Senator MARKEY. Thank you, Mr. Chairman, very much.

And you are right, it's a lifesaving technology, but it's not free. So, you mentioned the MBTA, in Massachusetts, which has, alone, invested over \$500 million to implement PTC, supported by \$27 million of direct Federal investment and nearly \$400 million in Federal loans. And, after implementation, the MBTA may have to spend tens of millions more to operate and maintain this technology for decades to come. So, while I'm proud that I have recently helped secure \$20 million of Federal investment to help the MBTA implement PTC technologies, I am concerned that our commuter rails may not have the resources or the tools to continue operating and maintaining that system.

So, Mr. Chairman, is there a role for continuing Federal assistance, investment for technical assistance for PTC technologies to ensure we are operating and maintaining these technologies effectively?

Mr. Administrator?

Mr. BATORY. Thank you, Senator.

That is a question that doesn't have an answer yet, and it's going to be answered primarily by each of the individual railroads that are installing PTC, as far as the maintenance and testing of PTC, going forward. As with any capital investment, okay, there's a cost that follows. And the question is, what is that number, and how many zeros are behind that number? And it has been addressed in our dialogues with each of the individual railroads, but, as I said,

it's going, like, down a blind alley. They don't know what the number is.

Senator MARKEY. OK.

Mr. BATORY. But, it—

Senator MARKEY. Ms. Fleming, what do you think?

Ms. FLEMING. You know, I think everybody's focusing on the December deadline, either meeting it or qualifying for an extension. That being said, we've heard from railroads that, you know, they are wondering what it's going to take to keep the operations and maintenance, whether there'll be Federal funds, what the role for FRA will be. So—whether the resources—the constrained resources will be in play.

Senator MARKEY. Let me continue. Thank you.

Mr. Corbett, do you need more Federal money to help you solve this problem?

Mr. CORBETT. Senator, I don't know a single transit system in the United States that would say they don't need more money, Federal and otherwise. But, I would say the—what we see at NJ Transit as we're coming to where I see the end, really, of the implementation phase, more the installation, is now, when we go to operationalizing, and that's more complex issues—

Senator MARKEY. OK, good. Thank you.

Mr. Naparstek, more Federal money?

Mr. NAPARSTEK. I would agree with the comments heard. You could always use more Federal money. There's always a tradeoff. And when you look at PTC, my operating costs—when I look at my budget for the upcoming year, I had to increase my operating costs. Therefore, I either offset it by reductions elsewhere or I've got to ask for more money.

Senator MARKEY. OK, great.

So, while Congress required PTC to be implemented on passenger rail lines by December 31 of this year, we did grant the Federal Railroad Administration the authority to give commuter rail lines a two-year extension if they demonstrate sufficient progress. That's installed hardware, acquired spectrum, field testing, and employee training. And I'm pleased that the MBTA, the Massachusetts Bay Transit Authority, has made this progress. But, as the December 31 deadline to meet these requirements rapidly approaches, I fear that the FRA may not have enough resources or staff needed to process the volumes of plans and documents, literally thousands of papers, in a timely manner.

Mr. Administrator, are you confident that the FRA will be able to process this volume of materials so that no commuter rail line is deprived of an extension due to untimely review and approval? And, if commuter rail lines are not granted this extension, they could have to halt service altogether to avoid extensive fines, leaving passengers stranded. Can you please give us some assurances with all of the—for all of those systems that are moving fast toward meeting the deadline?

Mr. BATORY. Senator, I have total confidence with the organization that I'm associated with, not only in quantity, but more so on quality. And it's a learning experience every day. When you first get your first document, if you will, and then you understand what

the laborious task is and what you have to do to modify it to be more efficient, going forward.

Senator MARKEY. You are confident that you can meet—

Mr. BATORY. I am.

Senator MARKEY.—the deadline?

Mr. BATORY. Based on what I know today and what I—and what we have planned, I am confident.

Senator MARKEY. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Markey.

I think we have exhausted the number of questions the members want to ask here today, but I suspect you'll get some written questions that you can take for the record.

But, we do appreciate very much all of you. Thank you for your responses, for being here today, and for giving us a very timely and needed update on where we are with respect to implementation of Positive Train Control. It's an issue that has enormous implications for transportation in this country, and certainly for safety.

So, we would ask that, as you receive those responses, that you get them back as soon as possible. I'll give you, hopefully, here, a time when we would like to have them responded to. We'll keep the record open for two weeks. So, if you could get the responses back in two weeks, and we'll use that to continue to build out the record of the hearing.

So, again, thank you all very much.

With that, this hearing is adjourned.

[Whereupon, at 12:01 p.m., the hearing was adjourned.]

A P P E N D I X

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN THUNE TO
RONALD L. BATORY

Question 1. Interoperability has been cited by many railroads as one of, if not the most, significant challenge in the implementation of PTC. In the Chicago area for example, many different freight and passenger railroads will need to interoperate in order to reach full implementation. What is the current status of testing interoperability in the Chicago region and is achieving interoperability expected to affect network fluidity or cause any service delays going forward?

Answer. In their Quarterly PTC Progress Reports for Quarter 1 of 2019, the Northeast Illinois Regional Commuter Railroad Corporation (Metra), the Belt Railway Company of Chicago, the Northern Indiana Commuter Transportation District, and the Class I railroads in the Chicago area conveyed that they are testing PTC system interoperability with eleven distinct tenant railroads, as of March 31, 2019. To date, these host railroads have not reported any specific PTC issues during interoperability testing in the Chicago area.

On June 12, 2019, Amtrak informed FRA that their operations, as a tenant railroad, are currently governed by a PTC system on approximately 16,032 of the 19,119 route miles (84 percent) where Amtrak operates on Class I railroads', commuter railroads', and other host railroads' PTC-equipped main lines. Specifically, Amtrak reports having achieved PTC system interoperability on the Chicago-area main lines of BNSF Railway, CSX Transportation, Inc., Norfolk Southern Railway, and Union Pacific Railroad.

Many of the host and tenant railroads that operate on main lines subject to the statutory mandate in the Chicago area meet regularly in a working group to discuss, among other PTC-related issues, interoperability testing and potential resolutions to any ongoing challenges. A common theme discussed at these meetings is concern regarding the communications bandwidth in the Chicago area. Many railroads continue to install back-up communications (WiFi and cellular) to supplement the radio communications. However, only when PTC is fully implemented in the Chicago area will any performance issues, such as network fluidity or service delays, be identified.

Question 2. What actions is FRA taking to prepare for the numerous extension applications railroads will submit in the next few months?

Answer. As of March 5, 2019, FRA approved all 33 requests for an alternative schedule and sequence, as each applicable 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. These 33 requests encompassed supporting documentation submitted on behalf of 37 railroads, including four additional tenant-only commuter railroads. FRA issued each decision in advance of the Positive Train Control Enforcement and Implementation Act of 2015's (PTCEI Act) 90-day decision deadline and, on average, within 66 days of receipt. In addition, FRA notes that four 2 railroads self-reported to FRA that they fully implemented an FRA-certified and interoperable PTC system on their required main lines *before* December 31, 2018.

In order to comply with the PTCEI Act's required review and decision deadlines, FRA developed a process to review railroads' proposed alternative schedules and sequences under 49 U.S.C. §20157(a)(3)(A). Within two weeks of receipt, FRA staff evaluated whether a railroad sufficiently demonstrated it met each of the six statutory criteria necessary to qualify for an alternative schedule and sequence. If FRA identified any issues that would prevent approval of the proposed alternative schedule and sequence, FRA proactively notified the railroad and provided an initial opportunity to correct any deficiencies and provide additional supporting documentation to FRA.

If the deficiencies were widespread or complex in nature or if the railroad was otherwise not able to immediately rectify the deficiencies, FRA provided the rail-

road, as the PTCEI Act requires and within 45 days of receipt of the railroad's written notification: (1) a letter identifying and describing each deficiency that would prevent FRA from approving the railroad's proposed alternative schedule and sequence, and (2) an opportunity to correct the deficiencies before FRA's final decision was issued, not later than 90 days from receipt of the railroad's initial written notification. FRA's interim deficiency letters are available for download in a railroad's public PTC docket. As noted above, FRA complied with the PTCEI Act's mandated FRA review and decision deadlines.

FRA's decision letters are posted in railroads' public PTC dockets on <https://www.regulations.gov>, and hyperlinks to railroads' PTC dockets are available on FRA's website at <https://www.fra.dot.gov/Page/P0628>.

In addition, to help ensure that FRA met the statutory review and decision deadlines, FRA proactively provided technical assistance to the Association of American Railroads, the American Public Transportation Association, and their member railroads throughout 2018, regarding multiple, industry-created templates for railroads' written notifications under 49 U.S.C. § 20157(a)(3)(A). Also, FRA reviewed and provided substantive feedback on draft documentation from at least six railroads, including Class I and II railroads and commuter railroads, and FRA's subject matter experts remain available to provide technical assistance and answer any questions.

Question 3. As FRA is well aware, in addition to passenger railroads and Class I railroads, many short line railroads also are in the process of implementing PTC. What is the status of PTC implementation among short-line railroads and are they are facing any challenges in implementing PTC?

Answer. Pursuant to the statutory mandate, seven Class II or III, short line, or terminal railroads must implement PTC systems on their main lines that provide or host regularly scheduled intercity or commuter rail passenger transportation. All seven railroads reported that, as of December 31, 2018, they had installed 100 percent of the PTC system hardware set forth in their PTC Implementation Plans. In addition, as of December 31, 2018, one of these seven railroads was operating its FRA-3 certified and interoperable PTC system in revenue service, and the other six railroads are currently conducting FRA-approved field testing of their PTC systems on the general rail network.

The challenges that these railroads have generally conveyed to FRA regarding full implementation of PTC systems are similar in nature to the challenges commuter railroads and Class I railroads regularly convey to FRA:

- There is a limited number of PTC system vendors and suppliers, all of which are significantly resource-constrained and serving all railroads simultaneously;
- As reliability and stability of PTC systems is still immature, railroads are experiencing significant technical issues with both PTC system hardware and PTC system software that often take considerable time to diagnose and resolve, impacting current operations in some cases; and
- Achieving PTC system interoperability between host railroads and tenant railroads will require significant joint testing, configuration management, and multi-party coordination over the next 17 months.

FRA recognizes that this question might also relate to the status of Class II and III railroads that operate as tenant railroads on the main lines of other host railroads that are subject to the statutory mandate. In total, there are approximately 101 distinct tenant railroads nationwide—including Amtrak, commuter railroads, and Class I, II, and III railroads—that operate on another railroad's main line that is subject to the statutory PTC mandate, according to host railroads' current PTC Implementation Plans. Although there are approximately 101 unique tenant railroads, FRA estimates that there are approximately 227 interoperable relationships because, in many cases, one tenant railroad operates on multiple PTC-equipped railroads. In May 2018, FRA began providing additional information on its website (<https://www.fra.dot.gov/ptc>) specifically about each host railroad's self-reported progress toward achieving interoperability with its 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.¹

Throughout 2019 and 2020, FRA will continue to provide extensive technical assistance to all applicable railroads regarding the statutory and regulatory interper-

¹FEDERAL 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.

ability requirements. On April 23, 2019, FRA commenced a significant interoperability initiative by sending a letter to each freight, non-Class I tenant railroad² that operates on at least one main line that is subject to the statutory PTC mandate, according to host railroads' current FRA-approved PTC Implementation Plans. From late May to early August of 2019, the FRA Administrator and PTC subject matter experts are 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.

Question 4. In the Consolidated Appropriations Act of 2018, Congress appropriated approximately \$593 million for the Consolidated Rail Infrastructure & Safety Improvements grant program, which works with private, state, and local investments to assist much-needed rail projects across the country. Of these funds, \$250 million was specifically set aside for PTC, and \$318 million was dedicated to fund projects that improve freight and intercity passenger rail transportation safety, efficiency, and reliability. Applications for that \$318 million, as well as applications for the remaining \$46 million for PTC funding, are due on October 12. Acknowledging that we are generally hearing that funding is not a central challenge for PTC implementation right now, what is FRA's timeline for reviewing these applications and awarding the CRISI money?

Answer. Due to the statutory PTC mandate's deadlines of December 31, 2018, and December 31, 2020, FRA prioritized its resources to award the \$250 million in CRISI grant funding specifically set aside for the implementation of PTC systems as efficiently as possible.

FRA issued a Notice of Funding Opportunity (NOFO) for the \$250 million in PTC Systems Grants in May 2018, and selections for 28 projects for a total of \$203 million were announced in August 2018. Because the program was initially undersubscribed, FRA then issued another NOFO for the balance of the PTC-specific funding in September 2018, and FRA announced the second set of CRISI PTC Systems Grant selections on December 21, 2018. FRA recently announced the selections for the full CRISI program on June 12, 2019, including \$326 million in grant funding.

Question 5. One clarification that FRA has made with respect to achieving full PTC implementation is that a host railroad must be interoperable with all tenant railroads on its line in order for FRA to consider them fully PTC compliant. Setting aside that interpretation, does FRA believe that the Class I railroads otherwise have largely succeeded in implementing PTC with at least one Class I railroad having fully completed PTC implementation?

Answer. Yes, apart from meeting the interoperability requirements under the statutory mandate, Class I railroads have made significant progress toward implementing PTC systems on their main lines that are subject to the statutory mandate. In their Quarterly PTC Progress Reports for Quarter 1 of 2019, Class I railroads reported that, as of March 31, 2019, PTC systems are in operation on approximately 87 percent of the Class I railroads' main lines that must be governed by a PTC system—specifically, on 46,826 route miles of the 53,756 route miles subject to the statutory mandate that are owned or controlled by Class I railroads, as set forth in their PTC Implementation Plans.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
RONALD L. BATORY

Question 1. Some railroad signal employees—including those at Class I freight railroads—have raised concerns about not receiving the type and level of PTC training that is necessary to properly install, operate, and maintain these systems. What does FRA do to ensure that training updates it receives from carriers are accurate?

Question 2. How has FRA overseen the training component of PTC implementation and what does the agency do to verify that training is adequately completed?

Question 3. Has the FRA provided freight and passenger rail guidelines or guidance for PTC employee training?

Answer to Questions 1 to 3. Since January 2010, FRA's positive train control (PTC) regulations have required that railroads subject to the statutory mandate must establish and implement robust PTC training and qualification programs, in accordance with the requirements under 49 CFR §§ 236.1041–236.1049 and the host railroad's PTC Safety Plan. A railroad's training and qualification program must

²This encompasses Class II, Class III, short line, switching, terminal, and regional tenant railroads that operate on PTC-mandated main lines.

provide training for the following personnel and “ensure that they have the necessary knowledge and skills to effectively complete their duties related to operation and maintenance of the PTC system”:

- (1) Persons whose duties include installing, maintaining, repairing, modifying, inspecting, and testing safety-critical elements of the railroad’s PTC systems, including central office, wayside, or onboard subsystems;
- (2) Persons who dispatch train operations (issue or communicate any mandatory directive that is executed or enforced, or is intended to be executed or enforced, by a PTC system);
- (3) Persons who operate trains or serve as a train or engine crew member on a train operating in PTC-governed territory;
- (4) Roadway workers whose duties require them to know and understand how a PTC system affects their safety and how to avoid interfering with its proper functioning; and
- (5) The direct supervisors of persons listed above.

In addition, FRA’s PTC regulations generally describe the types of training that such personnel must receive, prescribes minimum training requirements, and requires that the railroad’s training and qualification program include periodic refresher training and evaluation “that includes classroom, simulator, computer-based, hands-on, or other formally structured training and testing.” See 49 CFR §§236.1041–236.1049.

Before a railroad commences revenue service demonstration (RSD) of its PTC system, FRA requires that the railroad provide written documentation to FRA establishing that all appropriate personnel have received PTC training per the railroad’s required PTC training program, and FRA’s PTC specialists monitor certain RSD operations and other field testing on the railroad’s property. See 49 CFR §§236.1035(b), 236.1041–236.1049.

Also, in a host railroad’s PTC Safety Plan, which is subject to FRA’s approval and is necessary for PTC System Certification, a railroad must include a “complete description of the railroad’s training [and qualification program] for railroad and contractor employees and supervisors necessary to ensure safe and proper installation, implementation, operation, maintenance, repair, inspection, testing, and modification of the PTC system.” See 49 CFR §236.1015(d)(6).

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. CATHERINE CORTEZ MASTO
TO RONALD L. BATORY

Spent Nuclear Fuel and High Level Waste by Rail—PTC Applicable? Administrator Batory, as we discussed during the hearing, I have confirmation from multiple rail safety experts that the law that initiated the PTC mandate defines main lines for the purposes of PTC as those carrying five million or more gross tons of freight annually and authorizes your agency to define the term “mainline” by regulation for passenger routes or segments over which limited or no freight railroad operations occur. And that toxic materials are referred to as either toxic-by-inhalation or poison-by-inhalation Class 6 hazardous materials. But that Spent Nuclear Fuel and High Level Waste would be Class 7, and thus not shipments that would require this important technology.

Question 1. Can you speak to the future shipments of this kind of material moving through various communities and states in our country, if we can’t require PTC because of the size or definition of this product?

Answer. Under the statutory mandate, each Class I railroad and each entity providing regularly scheduled intercity or commuter rail passenger transportation must implement a PTC system on:

- (1) its main line over which poison- or toxic-by-inhalation (PIH or TIH) hazardous materials and five million or more gross tons of traffic are transported per year;
- (2) its main line over which intercity or commuter rail passenger transportation is regularly provided; and
- (3) any other tracks the Secretary of Transportation prescribes by regulation or order.

The statutory mandate specifically defines PIH or TIH hazardous materials as those classified as such under 49 CFR §§171.8, 173.115, and 173.132. Accordingly, Class I railroads are generally implementing PTC systems on main lines that transport those types of hazardous materials and main lines where intercity or commuter

rail passenger transportation is regularly provided, at a minimum. Several railroads have indicated they are also voluntarily implementing PTC systems on main lines that are not required to be governed by a PTC system by law.

Congress may also mandate PTC system implementation on additional main lines, including those that transport other types of hazardous materials that are not classified as PIH or TIH, through an act of legislation. As noted above, the Department of Transportation is authorized to require PTC system implementation on additional lines by regulation or order, but all Federal agencies must follow the direction of Executive Orders 12866 and 13563 for rulemaking, which include quantifying costs and benefits, reducing costs, harmonizing rules, and promoting flexibility.

FRA Resources for PTC Compliance. Administrator Batory, while I asked this question during the hearing, I believe there may have been confusion in your response, so I will ask again.

Question 2. For the various PTC certifications and waivers—what are you communicating to railroads as far as timelines they should expect for your safety professionals to review and respond to these documents?

Answer. The Positive Train Control Enforcement and Implementation Act of 2015 (PTCEI Act) requires that FRA *shall* approve a railroad's alternative schedule and sequence within 90 days of receipt of the railroad's written notification, if the railroad has demonstrated it met the six statutory criteria necessary to qualify for an alternative schedule and sequence. In the interim, within 45 days of receipt of a railroad's written notification, FRA must provide the railroad with: (1) a written notification of any deficiencies that would prevent FRA from approving its proposed alternative schedule and sequence, and (2) an opportunity to correct the deficiencies before FRA's final decision shall be issued within 90 days total.

As of March 5, 2019, FRA approved all 33 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. These 33 requests encompassed supporting documentation submitted on behalf of 37 railroads, including four additional tenant-only commuter railroads. FRA issued each decision in advance of the PTCEI Act's 90-day decision deadline and, on average, within 66 days of receipt.

FRA's decision letters are posted in railroads' public PTC dockets on <https://www.regulations.gov>, and hyperlinks to railroads' PTC dockets are available on FRA's website at <https://www.fra.dot.gov/Page/P0628>.

With respect to PTC System Certifications, FRA's regulations provide that FRA will, to the extent practicable, approve, approve with conditions, or deny a railroad's PTC Safety Plan and request for PTC System Certification within 180 days of receipt. If FRA does not approve or deny the railroad's PTC Safety Plan within 180 days, FRA's regulations state that FRA will provide the railroad with a statement of reasons as to why the submission has not been acted upon, a projected deadline by which an approval or denial will be issued, and any further consultations or inquiries to be resolved. See 49 CFR § 236.1009(j).

Question 3. I know Ms. Flemming has laid out some of the expectations in her testimony, and these timelines seem concerning, even if railroads do get all the way to December 31st to submit much of this paperwork to the FRA.

From there, what has been the *specific staffing plan and needs*, please give me a sense of numbers, for the FRA to be able to help railroads comply with elements of PTC implementation during the tenure of this Administration? Because it's clear from the GAO testimony that these concerns are still very real as we've been heading toward this 2018 deadline for years now.

Question 4. Do you have all the personnel you need, because when we previously all met as a committee on this issue, the staffing levels within the Administration was a specific point of concern then as well? That was seven months ago. We would hate there to have to build in delays toward PTC implementation based on months or years of bureaucratic delays on top of the additional challenges associated with this technology.

Answers to Questions 3 and 4. FRA's PTC program consists of technical and programmatic staff and contractors, many of whom are dedicated to PTC on a full-time basis and a subset that supports the program on a part-time basis, while also performing other duties. This team includes 27 *Full Time Equivalent* (FTE) positions, as described below:

- Full Time FRA *Technical Staff & Contractors* (15 FTE): 1 Staff Director of the PTC/Signal & Train Control (S&TC) Division, 2 senior test monitors, 8 PTC specialists (including 2 specialists that were hired in Quarter 1 of 2018), 1 software

engineer, and 3 technical contractors. These staff provide direct technical assistance to the railroads throughout testing and implementation.

- Full Time FRA *Programmatic* Staff & Contractors (7 FTE): 1 attorney, 1 program analyst, 2 project management contractors, and 3 data analyst contractors. These staff provide status monitoring and manage documentation and approvals.
- Part Time FRA *Technical & Programmatic* Staff (approximately 5 FTE): 1 Staff Director of the Passenger Rail Division, 2 S&TC engineers, 1 attorney, and 1 contractor that provides PTC Safety Plan reviews on a task-order basis (average 2.5 FTE). These staff directly support PTC Safety Plan reviews.

As part of its agency budget, FRA is using PTC funds to not only keep the current contract force in place, but also expand both the contract force and staff to enable the expanded PTC team to provide timely approval of documentation and effective support to railroads as they strive to meet the statutory deadline. The expanded PTC team, totaling approximately 36+ FTE, will also include:

- Two railroad experts to provide additional subject matter expertise in support of PTC Safety Plans.
- Three new contract positions to support FRA's oversight of interoperability in highly congested areas, including Chicago and the Northeast Corridor.
- An additional procurement is currently underway for another set of contractors to support FRA's review of PTC Safety Plans, with the skill set capable of reviewing a PTC Safety Plan in its entirety, including approximately 5 to 10 FTEs.

FRA Enforcement Strategy—Discretion on Extensions.

Question 5. Mr. Batory, what is the average length of an extension that you expect railroads to ask for—I ask because the law gives FRA significant discretion on the length of the extension—correct?

Question 6. Will you be giving railroads exactly the amount of time they want or will you use your discretion to get them to expedite their implementation—because you have leverage to keep them on task and to work to ensure 2020 doesn't turn out like 2015 when the industry was asking Congress for more time to install this lifesaving technology?

Answer to Questions 5 and 6. Notably, four railroads—North County Transit District, the Port Authority Trans-Hudson, Portland & Western Railroad, and the Southern California Regional Rail Authority (Metrolink)—self-reported that they fully implemented an FRA-certified and interoperable PTC system on all of their required main lines *before* December 31, 2018.

With respect to other railroads still implementing their PTC systems, most railroads specified in their FRA-approved alternative schedules and sequences that an FRA-certified and interoperable PTC system will be fully implemented on all of their required main lines by December 31, 2020. FRA, however, commends several railroads for including an earlier deadline in their FRA-approved alternative schedules and sequences, including three commuter railroads establishing final deadlines in Quarter 3 of 2020.

Regarding your inquiry about whether “the law gives FRA significant discretion on the length of the extension,” FRA notes that the PTCEI Act requires a railroad to include a deadline in its alternative schedule that is both “as soon as practicable” and not later than December 31, 2020. The PTCEI Act strictly *requires* FRA, without any discretion, to approve a railroad's proposed alternative schedule if the railroad's written notification sufficiently demonstrated it met the six necessary statutory criteria by December 31, 2018, and if the alternative schedule included a deadline not later than December 31, 2020.

However, if any railroad's written notification failed to explain the reasons the railroad's proposed deadline is “as soon as practicable,” which is a part of the six statutory criteria necessary to qualify for an alternative schedule, FRA would have required the railroad to provide such a justification during FRA's 90-day review period. In general, as noted above, if there were deficiencies in a railroad's documentation that would prevent FRA from approving the proposed alternative schedule *and* the railroad was not able to immediately rectify them, FRA provided the railroad, as the PTCEI Act requires and within 45 days of receipt of the railroad's written notification: (1) a notification identifying and describing each deficiency that would prevent FRA from approving the railroad's proposed alternative schedule and sequence, and (2) an opportunity to correct the deficiencies before FRA's final decision is issued, not later than 90 days from receipt of the railroad's initial written notification.

cation. As noted above, FRA complied with the PTCEI Act's mandated FRA review and decision deadlines.

In addition, you inquired about how FRA will help ensure that railroads fully implement PTC systems in a timely manner. Until all PTC systems are fully implemented on the required main lines, FRA is committed to continuing to conduct the mandated at-least-annual compliance reviews to help ensure that railroads comply with the interim requirements and the final deadlines set forth in their alternative schedules and sequences.

FRA Enforcement Strategy—Need for a Strategy. In the 2015 GAO report on PTC it recommends, among other things, that the FRA develop the agency's enforcement strategy. At the hearing Mr. Batory, you stated in your testimony quote "FRA is currently considering all options, within the framework established by law, to determine what type of enforcement action will be most effective and appropriate under the circumstances."

Question 7. So to be clear, by definition, you still haven't landed on a *specific* FRA enforcement strategy, correct, and we should take from this statement that you're going to approach this going forward on a case by case basis? That seems like it will be a challenge and may create uncertainty with the railroads you oversee.

Answer. The three acts of Federal legislation governing railroads' implementation of PTC systems specifically authorize the Secretary of Transportation, and FRA by delegation, to assess civil penalties for any violations of the statutory PTC mandate. Throughout 2018, I, as FRA Administrator, maintained my recommendation that FRA should assess the ordinary statutory maximum civil penalty (*i.e.*, \$28,474 per day) against any railroad subject to the statutory mandate that neither fully implements a PTC system by December 31, 2018, nor obtains FRA's approval of an alternative schedule and sequence.

Also, it is important to clarify that with respect to any railroad that submitted a written notification requesting FRA's approval of its alternative schedule, the PTCEI Act contains a provision that *automatically extended* the statutory December 31, 2018, deadline for full PTC system implementation until the date on which FRA "approves or disapproves the alternative schedule and sequence, if such date is later than" December 31, 2018.

As noted above, as of March 5, 2019, FRA approved all 33 requests for an alternative schedule and sequence, as each railroad sufficiently demonstrated it met or exceeded the six statutory criteria necessary to qualify for an alternative schedule and sequence under the statutory mandate. These 33 requests encompassed supporting documentation submitted on behalf of 37 railroads, including four additional tenant-only commuter railroads. However, if there had been a case in which FRA determined that an applicable railroad failed to qualify for an alternative schedule and sequence under the statutory mandate, FRA would have reserved the right to assess the ordinary statutory maximum civil penalty (*i.e.*, \$28,474 per day) against the railroad. FRA would have also reserved 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.

Question 8. You obviously have significant experience in the railroad industry. When you were running a railroad, what would the FRA at that time have had to say to you to compel you into compliance for a requirement such as PTC?

Answer. I believe that FRA's increased technical assistance during this Administration to the rail industry—in addition to FRA's several series of enforcement actions against railroads that failed to meet their interim schedule-related milestones—significantly helps facilitate and foster railroads' compliance with this highly complex and important statutory mandate. Furthermore, increased collaboration within the industry, supported and facilitated by FRA, is enabling railroads in the earlier phases of PTC system testing to learn and benefit from the experience and advancements of the railroads that have obtained PTC System Certification and are conducting network-wide interoperability testing.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN THUNE TO
SUSAN FLEMING

Question 1. Looking beyond the December 31, 2018 deadline, to what extent are passenger railroads poised to meet the December 31, 2020 deadline for full PTC implementation? Specifically, based on the status of testing, to what extent are there any railroads that will soon be at-risk of failing to meet the 2020 deadline?

Answer. Testing is a key concern with regards to passenger railroads meeting the 2020 deadline, as many railroads have substantial work remaining. Less than a

third of commuter railroads—8 of 28—reported initiating an advanced form of field testing called revenue service demonstration (RSD) as of June 30, 2018. RSD testing is part of the criteria commuter railroads must meet in order to receive an extension to 2020 by the Federal Railroad Administration (FRA). Specifically, to qualify for an extension, commuter railroads must initiate RSD on at least one territory or “meet any other criteria established by the Secretary,” which FRA refers to as “substitute criteria.” Twelve commuter railroads reported that they plan to use substitute criteria to qualify for an extension, and of these, eight intend to apply for substitute criteria based on field testing. This approach defers time-intensive RSD testing into 2019 and beyond. For example, in March 2018 we testified that FRA officials told us that moving from the start of field testing to the start of RSD can take between 1 and 3 years, and has averaged about 2 years for those railroads that have completed that stage. FRA officials told us that they do not consider railroads that are approved for an extension under substitute criteria to be necessarily at a higher risk of not completing PTC implementation by 2020. However, in light of these time estimates and the unknown challenges that railroads may face during testing, railroads that are in the early field-testing stage moving into 2019 could face challenges completing PTC implementation by the extended December 2020 deadline.

Question 2. In its testimony, GAO noted that concerns regarding FRA’s ability to review extension requests filed before the end of the year, as well as its ability to continue to review other PTC submissions in a timely manner. As GAO understands it, does FRA have a sufficient plan to review the extension requests, as well as other ongoing PTC submissions, and does the GAO have any recommendations for FRA in conducting this review?

Answer. In March 2018, we recommended FRA develop an approach to prioritize the allocation of resources to address areas of greatest risk as railroads work to complete PTC implementation. FRA has reported that it taken some steps to bolster its workforce, such as by reallocating existing expertise and expanding the PTC workforce through training, expanding contracts with existing support contractors, and initiating one additional contract to provide technical support. Despite these efforts, FRA resources and review times remain a significant concern—both for near-term efforts such as extension requests as well as safety plans that need to be reviewed and certified prior to the end of 2020. Taking steps to prioritize limited resources will only increase in importance as the amount of documentation needing FRA review continues to grow in 2019 and 2020, as railroads move through testing and submit complex and lengthy safety plans.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
SUSAN FLEMING

FRA Oversight of Positive Train Control Implementation. Ms. Fleming, after your testimony in March highlighted concerns with FRA’s oversight of positive train control implementation, Chairman Thune and I urged the FRA to address these concerns.

Question 1. What has the FRA done to implement the GAO’s recommendations?

Answer. In March 2018, we recommended FRA identify and adopt a method for systematically communicating information related to the requirements and process for an extension to railroads. In June, July, and August 2018, FRA held three PTC symposiums that were attended by representatives from all 40 railroads and that focused on the extension process and substitute criteria, PTC testing, and safety plans, respectively. Furthermore, FRA has taken steps to better prepare railroads for the 2018 deadline, such as meeting regularly with individual railroads. We believe FRA’s actions in this area are consistent with our recommendation.

We also recommended in March 2018 that FRA develop an approach to prioritize the allocation of resources to address areas of greatest risk as railroads work to complete PTC implementation. In October 2018 we reported that FRA has reported taking action in this area, such as reallocating existing expertise and expanding the PTC workforce through training, expanding contracts with existing support contractors, and initiating one additional contract to provide technical support. FRA resources and review times remain a significant concern—both for near-term efforts such as extension requests and for the safety plans that need to be reviewed and certified prior to the end of 2020.

Question 2. What further actions must the FRA take to help railroads quickly implement positive train control?

Answer. As the December 31, 2018 PTC deadline approaches, FRA has reported taking some actions to manage the influx of documentation, such as reallocating re-

sources. Despite these efforts, railroads remain concerned about the agency's ability to manage the PTC workload in the coming months and beyond 2018. For example, in October 2018 we reported that seven out of 29 passenger railroads we spoke to identified FRA's resources and review times as a challenge. The need for FRA to prioritize limited resources will only increase in importance as the amount of documentation needing FRA review continues to grow in 2019 and 2020, as railroads move through testing and submit complex and lengthy safety plans. As we reported in March 2018, in an environment with limited agency resources, targeting agency efforts to the areas of the greatest risk or highest priority areas is one way to leverage existing resources. We also reported that FRA had not fully leveraged the implementation progress data that railroads submitted to the agency to identify and develop a risk-based approach to prioritize agency actions. FRA resources and review times remain a significant concern—both for near-term efforts such as extension requests and for the safety plans that need to be reviewed and certified prior to the end of 2020.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
KEVIN CORBETT

Question 1. How many of New Jersey Transit's employees have been PTC trained?

Answer. NJTRANSIT has provided, and is continuing to provide, PTC training to locomotive engineers and conductors, train dispatchers, back office support personnel, field maintenance personnel and front-line supervisors, as required and in accordance with 49 C.F.R. §§236.1041 through 236.1049. At the time of NJTRANSIT's extension request (Alternative Schedule) to the FRA last month 1,745 employees have received training.

Question 2. Please provide an overview of the PTC employee training program including what it consists of (such as video and hands-on training activities) and the number of training hours and other factors (such as successful completion of an exam) for an employee to be considered fully trained.

Answer. NJTRANSIT's PTC Training Program complies with FRA Regulations CFR §236.1041 to 1049. The program consists of three primary areas of the PTC System (Onboard, Wayside, Office) to train the various crafts that support those program areas for installation, maintenance, operating, and troubleshooting. All employees must pass their particular courses with an examination per CFR 236. The training courses developed are performed in a live instructor led classroom environment, typically with presentation material support (*e.g.*, Powerpoint), and/or hands-on type training with specialized training equipment or aides depending on the particular craft.

Employees are required to complete a total number of training hours depending on their craft and responsibility to support railroad operations for PTC. Roadway workers, supervisors, conductors and all individual craft employees receive basic PTC Overview training, while more detailed technical training is provided for Onboard, Wayside, and Office employees.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN THUNE TO
SCOT NAPARSTEK

Question 1. What is the status of testing interoperability between Amtrak and its hosts and what is the timeline on which Amtrak expects to complete testing, particularly in the Chicago region?

Answer. Amtrak is interoperable with BNSF, UP, CSX, NS, Metrolink, and NCTD. Amtrak plans to continue testing with the 18 other non-interoperable railroads, with the majority of testing being completed by the end of 2019. Currently, Amtrak plans to be PTC ready in Chicago early in the second quarter of 2019, with interoperability testing completing toward the end of the second quarter of 2019.

Question 2. Amtrak has stated that it is conducting risk assessments to develop mitigation measures on portions of track without a functional PTC system. For portions of track without PTC currently in use but where its implementation is planned, such as along the California Zephyr route from Denver to Salt Lake City, what is the status of Amtrak paying costs of implementation, and when will Amtrak make a determination as to whether it will pay such costs?

Answer. We are currently in negotiations with the Union Pacific on Amtrak's costs.

Question 3. Amtrak's testimony mentioned that it plans to take a risk-based approach to operating on lines of varying PTC implementation statuses after the first

of the year. Should Amtrak riders plan to experience loss of service in any particular locations following the end-of-the year deadline?

Answer. At this time, Amtrak does not anticipate any disruption to service after December 31, 2018.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
SCOT NAPARSTEK

Positive Train Control. Mr. Naparstek, Florida relies on Amtrak to provide long-distance service to many of its cities. I understand that Amtrak has had challenges implementing positive train control (PTC) on tracks owned by host railroads that have not themselves installed the safety systems.

Question 1. What will Amtrak do if PTC implementation does not occur on Florida routes owned by other railroads before the 2018 deadline?

Answer. To prepare for operations where PTC is not in service, Amtrak has been conducting detailed risk assessments to enable us to develop an appropriate array of risk mitigation measures to address those areas that are not mitigated by a functional PTC system, consistent with our Safety Management System methodology. We plan to run current service on all Florida routes after the 2018 deadline.

Question 2. FRA has raised concerns about Amtrak's ability to meet the PTC deadline and considers the railroad to be high risk. Will Amtrak meet the deadline? Please describe what challenges Amtrak is facing in implementing PTC.

Answer. Due to the FRA's addition of including Amtrak's transponders in the total hardware count, Amtrak appeared to have under 95 percent of hardware installed as of September 30, 2018. Since then, however, Amtrak has installed all remaining hardware, and is therefore not at risk. Amtrak has 100 percent of hardware installed and, as such, was able to submit the application for the alternative schedule.

Question 3. Please provide an overview of the PTC employee training program including what it consists of (such as video and hands-on training activities) and the number of training hours and other factors (such as successful completion of an exam) for an employee to be considered fully trained.

Answer. Training courses include PTC system type training, management of the wayside equipment, troubleshooting, overviews, train rides, and operating rules. The training for locomotive engineers is no less than 8 hours in length. It includes in-classroom training, written assessments, demonstrations, documentation of participation, and operational performance assessments. The operational performance assessment consist of a supervised train ride with the PTC system active and enforcing that is no less than 100 miles in length. For yard employees the operational assessment is no fewer than 4 hours. To date Amtrak has trained over 5,000 personnel.

Amtrak Service. Amtrak is charged with maintaining a national rail network; however, some have raised concerns about Amtrak's commitment to long-distance service.

Question 4. Does Amtrak intend on maintaining current service levels on all routes in the National Network?

Answer. Yes, Amtrak plans to continue the current Long Distance routes we operated in FY 2018 in FY 2019.

Question 5. What are Amtrak's long term plans for long-distance routes? Is Amtrak committed to the sustainment and development of its long-distance routes that often service communities with no other, or very few, transportation options?

Answer. Amtrak will submit its next iteration of its long distance five year plans in February 2019, consistent with its statutory requirement to do so. At present, we anticipate that any Amtrak proposals for major changes to the national network or intercity passenger rail policy will be provided to Congress as part of the reauthorization of the FAST Act.

Question 6. Does Amtrak expect to further reduce onboard or clerk services and if so, why? If there were reductions, which services and how many jobs would be affected? Would these positions be outsourced and does Amtrak plan to retrain displaced employees for other roles within the organization?

Answer. Amtrak is always interested in improving our customer experience and becoming more efficient throughout our system. Relative to our food and beverage offerings, Congress explicitly required us to vastly improve the financial performance of these amenities by eliminating all associated losses by December 2020. Achieving such a mandate would require us to significantly change our model and experiment with new approaches to serving the needs of our customers during their

journey. We are moving to a general hospitality environment that is modernized and efficient. We want to put emphasis on what the new generation of traveler expects from an experience. We want the customer to have a greater say on where, when and how they dine, whether that is communally, in their sleeper, alone with their media devices or a combination of all of the above during their journey. We are testing less structure—more individualization.

Question 7. All Amtrak employees are trained to act as on site emergency responders in emergency situations. How will cuts in reservation or food and beverage staff impact Amtrak's ability to respond to incidents and has Amtrak factored this into its safety plans?

Answer. Amtrak takes very seriously appropriate safety considerations in our determination of crew size. We currently provide on-board service (OBS) personnel with first aid and CPR training during their initial training. After initial training every other year OBS personnel continue to receive emergency preparedness training covering rail equipment familiarization; situational awareness; passenger evacuation; coordination of functions; and "hands-on" instruction concerning the location, function, and operation of on-board emergency equipment. Appropriate staffing levels have always been included in our safety protocols. Since conductors and engineers have primary responsibility for emergency response on a train, we do not believe that changes in general OBS personnel levels impacts our ability to sufficiently respond to an incident.

Safety. Mr. Naparstek, as you know, Amtrak has had significant safety challenges. Since 2013, train crashes, derailments and other incidents have injured nearly eight hundred passengers and six hundred employees according the Department of Transportation inspector general. I understand that one way you are trying to address this is by providing a way for Amtrak employees to voluntary report safety incidents.

Question 8. How will you ensure that Amtrak employees feel confident that they can report incidents without being penalized?

Answer. Amtrak long had a policy prohibiting intimidation and harassment of employees that report safety concerns and issues. At all levels within the organization, we remain committed to compliance with our policy and regularly perform audits to ensure the policy is effective. Amtrak participates in Federal programs (FRA's C3RS) which ensure confidentiality in reporting through the use of a third party reporting processor (NASA). Reports received are investigated by a peer review team.

We continually undertake efforts to advance our Just Culture initiatives. Recent activities include expanding internal options for reporting concerns and incidents which offer not only confidentiality for reporters but also permit avenues for anonymous reporting. We communicated our commitment to Just Culture principles with our workforce as we work to imbed and expand a culture of organizational learning.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. CATHERINE CORTEZ MASTO
TO SCOT NAPARSTEK

Progress on Coordination for the California Zephyr. I was glad to hear from you during our conversation at the hearing that the California Zephyr is expected to be fully PTC compliant by the deadline, and that this will come without a specific impact to the current route schedule and service. That will be incredibly appreciated by our 88,000 Nevada riders. One question that has arose however is about an over 150 mile segment of that line, from Grand Junction, CO to parts of Utah, that my office has been made aware will not have functional PTC at any point because it currently experiences an exemption to the PTC mandate.

Question 1. Can you please confirm the accuracy of this situation?

Answer. Grand Junction to Mounds (Green River Subdivision) is Union Pacific territory, over which Amtrak is a tenant. It was granted a mainline track exclusion addendum (MTEA) by the FRA. Amtrak conducted a detailed risk assessment to enable us to develop appropriate risk mitigation measures to address that area since it is not mitigated by a functional PTC system.

Question 2. If this exemption exists, please describe what the specifics are to the situation of this exemption.

Answer. This MTEA was granted under the CTC (centralized traffic control) rule. In CTC territory, trains move on signal indication, and double track CTC permits movement on either track in either direction under signal control.

Question 3. If this exemption exists, please detail exactly what alternative safety efforts will be employed on this segment of the line and how these modifications in your operation won't change the current operating schedule of the Zephyr line.

Answer. Amtrak plans to employ a technology solution to enhance location based situational awareness for conductors and enhance the existing onboard systems to provide alerts and enforcement of authorized speeds to mitigate not having PTC implemented on this territory.

