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James A. Squires
President and
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September 9, 2015

The Honorable John Thune
Chairman, Committee on Commerce,
Science, and Transportation
United States Senate
Washington, DC 20510-6125

Dear Senator Thune:

Thank you for your inquiry of August 28, 2015, regarding the effects of Congress not extending the deadline for implementation of Positive Train Control (“PTC”) on Norfolk Southern Railway Company (“NS”), its customers, the people who ride passenger trains that operate over NS’s tracks, and the economy. As you know, NS has long been committed to the safety of our employees, our customers’ shipments, and the communities in which we operate and that we serve. Before we address the specific questions presented in your letter, I think it would be helpful to review how we got here.

Statutory and Regulatory Background

On October 16, 2008, Congress enacted the Rail Safety Improvement Act of 2008 (“RSIA”). That legislation established a deadline to complete the installation of an interoperable PTC system by December 31, 2015. The December 31, 2015 deadline was established without any analysis that it could be achieved. In short, the deadline was an arbitrary date, and there was no rational basis for the deadline Congress established.

Furthermore, enactment of RSIA was not the government’s last word in describing the PTC mandate imposed on rail carriers. Although RSIA was passed in October 2008, the FRA’s final PTC regulation was not promulgated until January 2010, and that regulation required two additional amendments (in 2012 and 2014) to clarify the requirements for implementation. Pursuant to the rules promulgated by the Federal Railroad Administration (“FRA”), PTC must be installed on Class I rail carrier mainlines over which Toxic Inhalation Hazards (“TIH”) are transported or over which intercity or commuter passenger service is regularly provided. Today, NS estimates that it is required to install PTC on approximately 9,560 miles of its network.

The repeated amendments to the rule have presented the railroads with something of a moving target. The PTC Development Plan (“PTCDP”) for I-ETMS (which is the PTC system that will be used by the freight carriers) has required three revisions to satisfy FRA’s

requirements to alter or to refine the system's scope and function. Changes to the PTCDP have an effect on deployment of I-ETMS in revenue service, as the deployed system must be built according to the approved Plan. The latest version of the PTCDP was jointly submitted to FRA by NS, UP, and CSX on July 8, 2015, and as of the date of this letter has not been addressed by FRA. So, to the best of our knowledge, the plan for the system we are required to build is still in flux even at this late date.

Norfolk Southern Implementation Efforts

Having begun to look at PTC as early as 2005, NS recognized that there would be significant challenges ahead to meet the arbitrary deadline set by Congress. So, immediately after RSIA was enacted, NS began to work on multiple fronts to develop the many systems and subsystems necessary to implement PTC. NS began to enter into agreements with other railroads of all sizes regarding standards to ensure that PTC systems would be interoperable across multiple railroads. With industry partners, it created a new company, called PTC 220, to go into the market and acquire the wireless spectrum needed for PTC systems (at the 220 MHz frequency) because of the need for greater coverage, reliability and security than provided by the cellular networks in the U.S. In essence, NS and the other Class I railroads were forced to create a private radio frequency network capable of transmitting and receiving data necessary to support an interoperable PTC network. NS also invested to become a 25% owner of Meteorcomm, along with BNSF, CSXT and UP, to design a software-defined radio capable of operating on the 220 MHz frequency as no manufacturers were producing radios meeting those standards at the time. Meteorcomm also worked to design a robust messaging system that would be able to securely transmit the millions of messages an interoperable PTC system requires.

But that was just the beginning. Before it can fully implement PTC, NS must also:

- Install almost 5,000 wayside devices along its PTC "footprint;"
- Install PTC equipment in 3,400 locomotives;
- Replace nearly 2,700 existing signals;
- Complete GIS mapping and attributing of over 16,000 track miles; and
- Train over 20,000 employees.

All of these efforts are well under way. To date, NS has spent nearly \$1 billion and hired or retained 698 signal-related personnel to implement PTC on its system.

NS has gone to these great lengths despite the government's own reports that the costs of PTC outweighed the safety benefits by a ratio of 22 to 1. See 77 Fed. Reg. 28286-7. As Secretary of Transportation Anthony Foxx has observed, "We know that 99.9% of shipments reach their destination safely" even without PTC. Accident statistics further show that 98% of accidents reported by all railroads would not have been prevented by having PTC.¹

¹ Letter from Acting Administrator Betty Munro to Senator Robert Byrd, Aug. 17, 2004.

In its PTC Implementation Plan (PTCIP), submitted to the FRA on April 16, 2010, NS outlined both its plan for implementation of PTC and the nearly 80 risks it could then identify to successful implementation by the deadline. See NS PTCIP at 22-26. Frankly, some of those risks have, in fact, arisen, and others that neither NS nor Congress could then anticipate have occurred as well.

For example, supply chain and quality control issues arose for various components of PTC--equipment suppliers did not have the capacity to supply the entire industry at once; existing equipment had to undergo design changes; and on-board and radio software development hit issues that caused delays. Although some components of a PTC system existed prior to the law, they were not designed for PTC or to work in concert with so many other components. Other components have been conceived, designed, and developed for PTC since the enactment of the law. All of the more than 20 major components of a PTC system that underlie a nationwide PTC network had to be tested to ensure they could work together reliably, which is a concept known as system integration. Testing is obviously an iterative process, and some components have had to be redesigned and retested. With each iteration of a component or its interface to other components, the likelihood of related programmatic changes occurs because of the dependency between the many components of a system of systems. These obstacles to implementation, and others, were reported by the Association of American Railroads in a January 18, 2012, report to the FRA entitled "PTC Implementation: The Railroad Industry Cannot Install PTC on the Entire Nationwide Network by the 2015 Deadline," which I will refer to as the "AAR 2012 Report."

As just one example of an unanticipated risk, PTC requires wayside antennas along the rights-of-way to permit the transmission of information specific to the system. Each of these antennas will transmit signals using radio spectrum licensed by the Federal Communications Commission ("FCC"), and must be mounted to a pole that is installed in the right-of-way. The FCC has taken the position that the construction of these poles is a federal undertaking triggering Section 106 of the National Historic Preservation Act (NHPA). In the spring of 2013, the FCC instituted a thirteen-month long moratorium and directed the railroads to cease installation of wayside pole structures needed for PTC communications while the agency sought to develop a process for review of the structures under Section 106. The industry reported to the FRA on this government-imposed obstacle to implementation in the March 2014 update to the AAR 2012 Report. Even as the moratorium was lifted, the FCC rejected a plea from the railroad industry to categorically exclude these structures from review (just as the Federal Highway Administration categorically excludes installation of communications systems within railroad rights-of-way) and instead required the railroads to painstakingly submit each location for individual review. This issue not only resulted in a delay in installing the poles themselves, but also delayed the

construction schedule for the completion of PTC signal projects (to say nothing of the significant additional expense required to submit each pole for review under Section 106).

In June 2012, the FRA itself issued a report to Congress entitled “Positive Train Control Implementation Status, Issues, and Impacts.” The FRA found that “both freight and passenger railroads have encountered significant technical and programmatic issues that make accomplishment of those plans questionable.” See FRA 2012 Report at 1. It further observed that “[w]here solutions have been identified, all attempts are being made to accelerate their implementation.” See FRA 2012 Report at 2. More than three years ago, the FRA concluded that “the majority of railroads will not be able to complete PTC implementation by the 2015 deadline.” See FRA 2012 Report at 2. FRA reiterated this finding in its August 2015 report to the House and Senate Committees on Appropriations entitled “Status of Positive Train Control Implementation.” See FRA August 2015 Report at 9. Not once – in either report – did FRA identify anything that the railroads could have done differently. Despite its overall finding, the FRA recognized the substantial resources the railroads were directing toward PTC implementation. “To date, the railroads have raised and expended more than \$1.5 billion of private capital to try to resolve [the issues with implementation of PTC by the deadline].” See FRA 2012 Report at 1. As I mentioned above, by now NS has spent nearly that much on its own.

That most railroads would not be able to make the deadline was confirmed in the United States Government Accountability Office report to Congress in August of 2013. GAO’s explanation confirms what the railroads had said over 18 months earlier and is worth quoting at some length:

Challenges to meeting the 2015 deadline are complex and interrelated. For instance, many of the PTC components had not been developed before RSIA was enacted, and some continue to be in various stages of development. In addition, all components, once developed must be assembled and integrated to achieve the overall safety function of PTC. Likewise, the steps involved with implementing PTC are interrelated, with delays or problems with one component or process resulting in additional delays. Railroad representatives told us that once all the components have been assembled, integrated, and tested for reliability, rolling out and phasing in a PTC system into each railroad’s network will take a considerable amount of time. For example, Amtrak first conducted a demonstration test of its PTC system on its Michigan line in 1996, but it was 5 years later, in 2001, when the system was put into service.²

GAO further reported that “[b]y attempting to implement PTC by the 2015 deadline while key components are still in development, railroads may be making choices that could introduce financial and operational risks to PTC implementation.” See GAO Report at p. 22. Given these

² *Positive Train Control: Additional Authorities Could Benefit Implementation*, United States Government Accountability Office Report to the Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, August 2013 at pp. 17-18.

risks and the then-current state of PTC technology, GAO recommended that Congress consider amending RSIA to grant FRA the authority to extend the deadline.

Consistent with our message since January 2012 and as subsequently confirmed by both FRA and GAO, NS can again state that it will not meet the December 31, 2015, deadline. But I should also be clear that it is not because of a lack of attention, money, or effort contributed by NS. The deadline was simply unattainable despite diligent, good faith efforts. How arbitrary and unrealistic was the deadline? The current status speaks volumes given the undisputed fact that railroads – big and small, freight and passenger – have been focused on developing and deploying an interoperable PTC system solution since the adoption of the deadline. FRA recently reported that:

“Class I railroads have:

- Completed or partially completed installations of more than 50% of locomotives that require PTC equipment;
- Deployed approximately 50% of wayside units;
- Replaced approximately 50% of signals that require replacement; and
- Completed most of the required mapping for PTC tracks.

By the end of 2015, AAR projects that:

- 39% of locomotives will be fully equipped;
- 76% of wayside interface units will be installed;
- 67% of base station radios will be installed; and
- 34% of required employees will be trained.

According to APTA, 29% of commuter railroads are targeting to complete installation of PTC equipment by the end of 2015. Full implementation of PTC for all commuter lines is projected by 2020.”

See FRA August 2015 Report at 9.

Consequences of Failure to Extend the Deadline

I now turn to each of your questions.

What Are the Issues and Challenges That Could Arise if Congress Does Not Extend the Statutory Deadline?

As I have said, NS has already made substantial investment and made Herculean efforts to implement PTC by the December 31, 2015, deadline. However, the existence of that deadline

creates substantial risk to NS that NS cannot ignore. Some of the risks and challenges that NS is evaluating include the following.

First, there is the obvious risk of financial penalties associated with enforcement of the deadline. FRA's Acting Administrator Sarah Feinberg has made clear her intent to "enforce the Dec. 31, 2015 deadline for implementation, just as Congress mandated." In fact, she has stated that:

Starting on January 1, 2016, FRA will impose penalties on railroads that have not fully implemented PTC. Fines will be based on FRA's PTC penalty guidelines, which establish different penalties depending on the violation. There are many potential violations, such as: \$15,000 to \$25,000 fine for failure to equip locomotives. The penalties may be assessed per violation, per day and may be raised or lowered depending on mitigating or aggravating factors.³

The penalties FRA can assess are not just in the nature of fines for failure to equip; FRA's penalties include penalties for operating while not in compliance with the PTC mandate. For example, there are fines for operating passenger trains at speeds equal to or greater than 60 miles-per-hour on non-PTC-equipped territory where PTC is required and for operating freight trains at speeds equal to or greater than 50 miles-per-hour on non-PTC equipped territory where PTC is required. See FRA 2015 Report at 15.

Second, NS faces the risk of other possible enforcement actions by the FRA. For example, Acting Administrator Feinberg has stated that "FRA will also use additional, appropriate enforcement tools to ensure railroads implement PTC on the fastest schedule possible – be it emergency orders, compliance orders, compliance agreements, additional civil penalties or any other tools at our disposal."⁴

Third, there are additional challenges created in the event that an accident involving TIH traffic or passengers were to occur on NS after December 31, 2015. In any lawsuit arising from such an accident, plaintiffs could attempt to claim that NS is negligent per se because it had not complied with the PTC implementation deadline. NS would vigorously defend against such a claim, but the fact that someone could raise such a claim is a risk.

What Are the Actions That NS Is Considering or Analyzing as a Result of These Issues and Challenges?

NS is currently evaluating its options to address the risks and challenges mentioned above.

³ <http://utu.org/2015/06/26/fra-the-state-of-ptc-implementation-in-the-u-s/>.

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First, NS is considering taking legal action to invalidate the deadline as a violation of due process given its arbitrary nature and the potential to deprive the railroad of cash through fines imposed by FRA. This deadline appears to have been selected with no analysis or feasibility inquiry.

Second, NS independently is considering ceasing to ship TIH commodities and declining to host passenger trains on its network effective January 1, 2016. NS does not believe that such an approach would violate the common carrier obligation because the request for service that requires NS to violate federal law and which would subject NS to penalties is not reasonable. This approach is the only complete solution to the risk of fines from the FRA for operating in non-compliance with the PTC mandate after December 31, 2015, and to the risks associated with plaintiffs' litigation in the event of an accident involving TIH or passengers that occurs after that deadline.

What Are the Potential Overall Effects on Freight and Passenger Transportation, Including Any Economic Effects and Unintended Consequences for Safety if the December 31 Deadline Is Not Modified?

Obviously, ceasing to haul TIH commodities would be disruptive to certain of NS's customers. The downstream effects are better explained by those customers, although one could envision that supply chains that involve those commodities would be disrupted. As an example, on August 19, 2015, NS received a letter from the American Chemistry Council, the Fertilizer Institute and the Chlorine Institute asking questions similar to those asked in your letter because of their concerns about these downstream effects. Of course, those effects would also ripple through the American economy.

The downstream effects on the traveling public from NS having to cease hosting Amtrak and commuter trains is similarly obvious. For example, Virginia Railway Express had approximately 409,000 riders during the month of June 2015.⁵ During the same month, there were 2.68 million trips taken on Amtrak trains across the country.⁶

Finally, NS's ability to conduct freight operations on the Amtrak-owned Northeast Corridor (NEC) and other passenger lines after December 31 is uncertain. NS operates over passenger lines, including the NEC, to reach over \$1 billion of its business. Our customers accessible only via passenger lines include automobile plants, major coal export terminals, chemical complexes, crude oil receivers, power plants, and even feed mills on the Delmarva Peninsula. Interoperability between NS and these passenger lines, including Amtrak, NJT, and SEPTA, is still in the technical design and commercial agreement phase. Much like NS is evaluating the risk of hosting passenger trains on its lines without PTC after the

⁵ http://m.vre.org/about/Ops_board_items/2015/July/15-VRE-114_July_CEO_Report_R6_LowRes.pdf

⁶ <http://www.amtrak.com/ccurl/494/528/Amtrak-Monthly-Performance-Report-June-2015.pdf>

The Honorable John Thune
September 9, 2015
Page 8

deadline, we assume Amtrak, NJT and SEPTA could be similarly evaluating the risk of hosting freight trains on passenger lines without PTC.

Conclusion

In closing, I hope it is clear that NS and the industry have been working hard on PTC development and implementation. However, the PTC deadline is arbitrary and disconnected from the great task and inevitable delays, including those created by the government itself, associated with developing, testing, integrating, and installing PTC components, and with ensuring that the system is interoperable and safe. Even after PTC is installed, there will be significant amounts of testing and work to make sure that it actually functions properly to make the railroad safer rather than less safe. In short, we are years away from full deployment of the system. I urge Congress to recognize this reality and adopt an extension of the deadline. The issues and challenges NS will face absent an extension of the deadline are real and the choices NS will have to make are not ones it relishes because NS is fully aware of the adverse impacts those choices would have on the movement of freight and passengers in the United States. Without an extension, however, NS will have to take actions to mitigate the risks associated with operating a railroad that will inevitably be non-compliant with the deadline.

Sincerely,



cc: The Honorable Bill Nelson
The Honorable Bill Shuster
The Honorable Peter A. DeFazio
The Honorable Anthony Foxx
The Honorable Daniel R. Elliott
The Honorable Ann D. Begeman
The Honorable Deb Miller
The Honorable Sarah Feinberg