

**Statement of Charles Mathias
Associate Chief, Wireless Telecommunications Bureau
Federal Communications Commission**

**Before the United States House of Representatives
Transportation and Infrastructure Committee
Subcommittee on Railroads, Pipelines and Hazardous Materials**

Hearing on the State of Positive Train Control Implementation in the United States

June 24, 2015

Chairman Denham, Ranking Member Capuano, and distinguished members of the Subcommittee, thank you for inviting me to testify before the Committee today. Like the rest of the nation, we at the FCC are deeply saddened by the tragic Amtrak derailment in Philadelphia. We send our condolences to the families of those who lost their loved ones and our gratitude to the first responders for their efforts. I want to assure you that the FCC is doing – and will continue to do – its part to facilitate the implementation of Positive Train Control, or PTC.

Promoting the safety of life and property through the use of wire and radio communication is a top FCC priority. Since passage of the Rail Safety Improvement Act of 2008 (Act), we have worked directly with freight, passenger, and commuter rails to help them obtain spectrum licenses and complete statutorily-required historic preservation and environmental reviews prior to deploying infrastructure to implement PTC. We have also worked closely with existing spectrum licensees, our federal partners, including the National Transportation Safety Board (NTSB) and the Department of Transportation’s Federal Railroad Administration (FRA), as well as Tribal Nations and state officials to facilitate the implementation of Positive Train Control.

THE FCC’S ROLE IN PTC

As a general matter, the Act requires Class I freight railroads, intercity passenger railroads, and commuter railroads to implement PTC on certain track by December 31, 2015. The Act requires PTC systems to be interoperable, and “designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zones limits, and the movement of a train through a switch left in the wrong position.” The railroads have chosen to design PTC systems that rely on wireless communication links between locomotives, wayside signals, and central offices. The railroads’ design approach involves the FCC in two aspects of PTC deployment.

As the nation’s expert agency on communications, the FCC helps freight and passenger railroads acquire the spectrum that they need to support communications between PTC radios installed on locomotives, alongside rail tracks, and at their central offices. As a result of our responsibility for licensing spectrum

use, we also manage the statutorily required historic preservation and environmental reviews of the poles, antennas, and associated infrastructure used to support PTC systems.

The railroads have targeted previously-allocated commercial spectrum bands to deploy PTC. In the absence of specific statutory direction for the FCC to clear and reallocate this spectrum away from its specified use for PTC purposes, which would be a time-consuming and potentially litigious process under any circumstances, the Commission has encouraged railroads to acquire the targeted commercial spectrum from existing licensees who previously purchased spectrum licenses in FCC auctions. Since Congress passed the Act in 2008, the FCC has been working closely with the railroads, including Amtrak, to identify available spectrum on the secondary market and to approve secondary market transactions quickly.

We recognize that developing and deploying PTC is a complex undertaking. While we are actively engaged with the railroads and our federal partners on PTC issues, there are aspects of PTC deployment in which we play no active role. In particular, the Commission is not involved in designing or assessing the railroads' choice of PTC technology. The Act requires the railroads, overseen by the FRA, to design and deploy PTC systems.

PTC IS A PRIORITY FOR CHAIRMAN WHEELER

Since his arrival at the FCC in November 2013, Chairman Wheeler has made facilitating PTC deployment a top priority. Under his direction, the Commission staff developed a more streamlined process for required historic preservation and environmental reviews. It also crafted a one-of-a-kind settlement to allow the freight railroads to use the PTC facilities they had already constructed without required approvals. Chairman Wheeler has also encouraged Commission staff to develop creative approaches to meet the railroads' spectrum needs, such as facilitating an efficient secondary market by matching existing licensees with railroads needing spectrum, encouraging the freight and commuter rails to develop interoperable systems, examining spectrum sharing and lease arrangements, and waiving power level limits to enable PTC systems to operate more effectively.

OVERALL PTC CHALLENGES

All of us share the goal of successful PTC implementation from coast to coast. Significant progress has been made, and the FCC stands ready to act swiftly and effectively within our statutory authority. But it is important to acknowledge key, structural challenges. I would like to touch on them briefly.

As you know, the Act does not designate specific spectrum bands for PTC, nor does it direct the FCC to allocate specific spectrum for PTC. Absent such direction from Congress—and consistent with decades of successful, market-driven spectrum policy—the FCC encouraged the railroads to turn to secondary markets for spectrum, especially given that much of the spectrum the rails chose for PTC had previously been auctioned and licensed to other private parties in major rail markets.

In addition, the Act does not provide a funding mechanism for PTC spectrum acquisition, which can make acquiring spectrum in the private market expensive and challenging, especially for smaller railroads, like commuter lines, and also for Amtrak.

FREIGHTS ESTABLISH PRIMARY PTC SPECTRUM BAND

While challenges exist, it is instructive to take a brief look at the country's major freight railroads, which have targeted and secured channels in the commercial 220-222 MHz spectrum band for PTC. Because of their complex communication needs, the freight railroads have been active participants in the nation's secondary spectrum markets for many years.

The country's major freight railroads acquired nationwide spectrum in the commercial 220-222 MHz spectrum band just months before the Act became law through transactions with private parties that had previously acquired spectrum licenses in FCC auctions or through secondary market transactions. The freight railroads quickly focused on utilizing this spectrum when the PTC mandate was established. Several of the major freights collectively acquired an ownership interest in a company that is developing PTC technology and equipment, and also created a spectrum coordinator—known as "PTC-220"—to manage the spectrum. In doing so, the freight railroads effectively drove other railroads, including Amtrak and commuters, to spectrum in and around the 220-222 MHz band for their PTC operations as well.

For most of the country, this strategy appears to have been successful. Whether through secondary market purchases or leases with PTC-220, the freights, Amtrak, and the commuter rails have cooperated to find spectrum to meet their needs. They have reached agreements that address several challenges related to PTC, including sharing both spectrum and infrastructure. A good example of this collaboration is the planned PTC deployment in Chicago. There, 11 railroads, including the freights, Amtrak, and commuter rails, will use common PTC-220 spectrum and infrastructure to ensure the safe transport of passengers and cargo across the nation's busiest rail market.

While most of the railroads across the country have the spectrum they need, our work in facilitating spectrum access is ongoing. For example, we are actively reviewing recently proposed spectrum transactions in several markets, and we will continue to assist railroads in their efforts to identify partners for secondary market transactions as necessary.

NORTHEAST CORRIDOR

The Northeast Corridor is a difficult and congested spectrum market. The freights largely met their anticipated spectrum needs in this area through their initial 220-222 MHz band license purchases. Amtrak approached the FCC on several occasions beginning in 2011 about obtaining spectrum to deploy PTC in the Northeast Corridor. The FCC has had similar interaction with commuter rails in the area.

In the absence of sufficient spectrum inventory or specific statutory direction, FCC staff encouraged the railroads operating in the Northeast Corridor to investigate obtaining spectrum from existing licensees in the secondary market.

In fact, Amtrak and several commuter rails have been successful in obtaining spectrum through the secondary market. Once Amtrak and the existing private party licensees finalized their commercial agreements, FCC staff quickly approved the spectrum transactions and related requests for waiver of certain FCC rules. In the case of Amtrak, the FCC approved its purchase of spectrum from Boston to New Haven overnight, and its purchase of spectrum from Washington, DC, to New York City just two days after Amtrak finalized its application.

INTERFERENCE CONCERNS

Spectrum acquisition in the Northeast Corridor is more complicated than in the rest of the country because Amtrak and the freight railroads are deploying two different PTC systems that were not engineered to be compatible. The systems can operate without difficulty when geographically separate from each other, but when operating in close proximity on the same spectrum, as in the Northeast Corridor, the systems can encounter significant challenges. So, unlike in a market such as Chicago, where the railroads will share the same block of spectrum and use a single PTC system, in the Northeast Corridor each PTC system requires spectrum far enough from the other's to avoid the interference that could affect proper operations.

Amtrak and the freight railroads repeatedly assured the FCC that they would design their systems to operate with respect to each other on a non-interference basis. However, in late May, Amtrak and the freight railroads advised FCC staff in a joint meeting that using their separate PTC radio systems on the Boston to New Haven portion of the Northeast Corridor in the same spectrum block would result in harmful interference. This could degrade or disable communications on both systems, causing either or both to function improperly or stop functioning altogether.

The FCC has had two follow-up meetings with stakeholders, including the FRA, to identify possible solutions and how the FCC could help the parties resolve this emergent problem. FCC staff will continue to work with Amtrak, the commuter rails that use the Amtrak system in the Northeast Corridor, and the freights to help identify and review possible solutions to these recently identified problems arising out of the railroads' system design choices.

INFRASTRUCTURE

PTC infrastructure concerns played no role in the accident in Philadelphia. Amtrak has informed us that its physical infrastructure in the Northeast Corridor is already in place.

PTC-related infrastructure review has been a priority in other areas of the country, however. Long-standing Federal environmental and historic preservation laws—the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA), respectively—require the FCC (and every Federal agency) to assess the potential impacts of agency “undertakings” that they license, including possible impact on properties significant to Tribal Nations. This means the FCC must ensure that PTC deployments are reviewed by Tribal Nations and State Historic Preservation Offices in a manner that allows for appropriate consideration of potential impacts.

In 2013, FCC staff became aware that the freight railroads had installed approximately 10,000 PTC poles around the country without complying with the FCC's review requirements under NEPA and NHPA. Recognizing the need for railroads to comply with the PTC mandate, the agency worked as required by statute with all stakeholders—freight railroads, Tribal Nations, state officials, the Advisory Council on Historic Preservation (ACHP), and other federal agencies—to resolve the deployed pole issue and develop a “fast track” review process for future pole deployments.

This process was made more complex by the fact that Tribal Nations in key deployment areas resisted discussions about future PTC deployments until the deployed pole issues were resolved. In May 2014, the FCC signed agreements with all seven major freight railroads that created a \$10 million Cultural Resource Fund to account for previous non-compliant deployments. The fund is providing direct support to Tribal Nations and State Historic Preservation Offices to support cultural and historic preservation projects.

Also in May 2014, the ACHP issued a set of streamlined rules for future PTC pole deployments. Under this approach, the majority of proposed PTC poles are presumptively exempt from historic preservation review, subject only to basic checks on their eligibility for the exemption.

At this point, nearly 20,000 poles have been constructed or submitted for streamlined review, and in April 2015 the Association of American Railroads estimated that its members have approximately 15,000 left to deploy. The Commission has the capacity to receive 1,400 pole applications (including exempt and non-exempt poles) every two weeks. As of June 18, 2015, the freight railroads could have submitted as many as nearly 40,000 additional poles for Tribal and state review. The railroads have submitted a total of approximately 8,500 poles, or roughly 21 percent of the system's capacity.

GOING FORWARD

The PTC spectrum situation in the Northeast Corridor is complex and poses significant technical challenges for the railroads. We stand ready to work with Amtrak, the commuter rails, and the freight railroads to facilitate resolution of the technical and spectrum issues arising from the decision to deploy separate PTC systems in the same frequency band in the Northeast Corridor.

CONCLUSION

We appreciate the Committee's interest in this issue and its efforts to ensure the successful deployment of PTC systems. The FCC is committed to working collaboratively with all parties to facilitate the deployment of PTC.

I look forward to answering any questions you may have.