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March 29, 2016

Mr. Robert C. Lauby
Associate Administrator for Railroad Safety
Chief Safety Officer
Federal Railroad Administration -Mail Stop 25
1200 New Jersey Avenue, S. E.
Washington, DC 20590

Subject: Annual Report, PTC Implementation Plan (PTCIP), 49 CFR Part 236, Subpart I 236.1011

Dear Mr. Lauby:

The following is the report on the status of the PATH PTCIP for CY 2015.

PATH's system already complies with items (i), (iv) and partially with item (ii) of the PTC requirements in 49 CFR Part 236, Subpart I 236.1005. PATH is therefore working to implement fully items (ii) and (iii).

The PATH Automatic Train Control (ATC) System will perform all required functions in satisfying all conditions of the Positive Train Control Mandate. In CY 2015 PATH continued to install and test the proposed system towards a 100% compliant PTC system. The progress for the PATH ATC System in CY 2015 can be categorized with the following:

- PTCSP update
  - Working with the FRA, completed an informal review of the PTCSP Version 3
  - PTCSP Version 3 (Final) is submitted on Friday, March 24, 2016
- PATH employee training
  - Training material is well defined and in use for official PATH training.
  - Required training for operations and signals commenced.
- Equipment installation
  - Installation of vehicle, wayside signals and communications equipment continues through all remaining sections.
  - Equipped to date (CY 2015) 198 of 230 vehicles.
- Certification of the ATC System
  - Testing of Automatic Train Protection functions commenced October 2015.
- Section 1 in Service is planned for October 2016

- o   Signal system upgrade is partially in operation.
- PTC Compliance
  - o   With the most recent project schedule, PATH expects compliance with the PTC Mandate by December 31, 2018.

Documentation:

In the past years, PATH has worked to produce and submit to the FRA the required PTC documentation. The PTC Implementation Plan and Development Plan are approved by the FRA. According to the Rule Modification of November 1, 2015, PATH updated the approved PTCIP with the additional required information.

In 2015, PATH evaluated and incorporated all FRA informal review comments on the PATH PTC Safety Plan revision 3. The PTC Safety Plan is formally submitted by March 24, 2016. The Automatic Train Protection functional tests commenced in October 2015 and will continue through the third quarter of 2016. All test data will be provided to the FRA in support of the PTCSP approval.

Installation:

There are in total 230 cars to be equipped with PTC on the PATH system. In 2015, PATH continued to install PTC (ATC/CBTC) equipment and reached a total of 198 cars.

Wayside equipment installation continued in 2015 in Section 2 (Harrison – Journal Square), Section 3 (Journal Square – Grove Street) and Section 4/5 (Grove – World Trade Center). The equipment installation is now complete in the following locations:

- Test Area at Harrison Yard,
- Section 1 (Newark- Harrison),
- Section 2 (Harrison – Journal Square),
- Section 3 (Journal Square – Grove Street).

Finalization of Sections 1-3 continues towards all testing and commissioning activities planned in CY 2016. Utilizing the equipped PA-5 cars and the completed installation of the outdoor areas, PATH was able to commence PTC training. FRA representatives are consistently updated with the progress towards compliance.

In CY 2015, PATH has operated zero (0) trains with PTC/CBTC-equipped controlling locomotives in PTC/CBTC-equipped territory for revenue operations. PATH expects to have limited operation in Q4 CY 2016 in a Revenue Service Demonstration test configuration.

Training:

In CY 2015, PATH commenced with PTC/CBTC training for both Signal and Operations staff in compliance with the regulation. The training of PATH employees for compliance will continue in CY 2016 with an expected completion in CY 2017.

Please find the PATH completed CY 2015 Annual PTC Progress Report attached.

Sincerely,

Radomir Bulayev
Superintendent
PATH, Power, Signals & Communications (PS&C) Division

cc: E. Altinbilek, C. DeGraffe, M. Marino, D. Reitz

Annual PTC Progress Report

CY 2015

Port Authority Trans-Hudson RR   *[Docket Number]*

The Annual Positive Train Control (PTC) Progress Report is due by March 31st of each year until full PTC system implementation is complete. The Annual PTC Progress Report must cover the railroad's implementation efforts and progress from the directly previous calendar year, and must be submitted electronically to the Federal Railroad Administration (FRA) via the FRA Secure Information Repository at https://sir.fra.dot.gov.

Name of Railroad or Entity Subject to 49 U.S.C. § 20157(a): Port Authority Trans-Hudson Railroad

Railroad Code: PATH

Annual PTC Implementation Progress Report for: 2015

PTCIP Version Number of File with FRA (basis for goals stated): Revision 7

Submission Date: 3/29/2016

Contents

1. Summary
Please provide a narrative summary of overall PTC implementation progress during the preceding calendar year (January 1 to December 31):

The following is the report on the status of the PATH PTCIP for CY 2015.

PATH's system already complies with items (i), (iv) and partially with item (ii) of the PTC requirements in 49 CFR Part 236, Subpart I 236.1005. PATH is therefore working to implement fully items (ii) and (iii).
The PATH Automatic Train Control (ATC) System will perform all required functions in satisfying all conditions of the Positive Train Control Mandate. In CY 2015 PATH continued to install and test the proposed system towards a 100% compliant PTC system. The progress for the PATH ATC System in CY 2015 can be categorized with the following:

- PTCSP update
    - o Working with the FRA, completed an informal review of the PTCSP Version 2.
    - o PTCSP Version 3 (Final) is submitted on Friday, March 24, 2016
- PATH employee training
    - o Training material is well defined and in use for official PATH training.
    - o Required training for operations and signals commenced.
- Equipment installation
    - o Installation of vehicle, wayside signals and communications equipment continues through all remaining sections.
    - o Equipped to date (CY 2015) 198 of 230 vehicles.
- Certification of the ATC System
    - o Testing of Automatic Train Protection functions commenced October 2015.
- Section 1 in Service is planned for October 2016
    - o Signal system upgrade is partially in operation.
- PTC Compliance
    - o With the most recent project schedule, PATH expects compliance with the PTC Mandate by December 31, 2018.

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Category	Quantity Installed During Calendar Year	PTCIP Year End Goal (If Applicable)	Cumulative Quantity Installed at End of Calendar Year	Total Quantity Required for PTC Implementation
Locomotives Fully Equipped	11	NA	198	230
Installation/Track Segments Completed	0	1	0	7
Radio Towers Fully Installed and Equipped	NA	NA	NA	NA
Employees Trained	16	NA	16	623
Route Miles In Testing or Revenue Service Demonstration	4	NA	6	28
Route Miles in PTC Operation	0	0	0	28

2. Update on Spectrum Acquisition

Required content:
- The amount of spectrum acquired and available for use during the applicable calendar year and the cumulative amount acquired and available for use at the end of the applicable calendar year, as compared to the amount the railroad stated would be acquired and available for use by the end of that calendar year and in total for PTC implementation, in the applicable revised PTCIP, as amended
- The basis for how the railroad is determining that the acquired spectrum is available for use by PTC radios (e.g., ensuring non-interference with other radios)

Spectrum Area or Location (E.g., county)	Spectrum Acquired and Available for Use (Owned/Leased) During Calendar Year	Cumulative Amount of Spectrum Acquired and Available for Use (Owned/Leased) at End of Calendar Year	PTCIP Year End Goal for Spectrum Acquired and Available for Use	Total Spectrum Required for PTC Implementation, as Reported in PTCIP
Spectrum Coverage Area or Location†: NA	NA	NA	NA	NA

Please provide any additional narrative for Spectrum Acquisition below:

This section is not applicable to the PATH PTC compliant solution.

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3. Quantity Update on Hardware Installation

Required content:

- Separated by each major hardware category and subcategory identified below, the amount of PTC hardware installed during the applicable calendar year and the cumulative quantity installed at the end of the applicable calendar year, as compared to the amount the railroad stated would be installed by the end of that calendar year and in total for PTC implementation, in the applicable revised PTCIP, as amended

3.1.   Locomotive Status

Category / Installation Feature	Quantity Installed During Calendar Year	PTCIP Year End Goal	Cumulative Quantity Installed at End of Calendar Year	Total Required for PTC Implementation, as Reported in PTCIP
Locomotive (Apparatus)[1]				
On-board Computers (e.g., Train Management Computer)	11	11	198	230
Software For Train Management and other applications	NA	NA	NA	NA
PTC Displays	11	11	198	230
Event Recorders	11	11	198	230
Onboard Antennas and/or Transponder Readers	11	11	198	230
GPS Receivers	NA	NA	NA	NA
Locomotive Radios – Primary Communications (e.g., 220 MHz radios)	11	11	198	230

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[1] Railroads may elect to add categories or subcategories if more detail is desired.

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Secondary Communications (e.g., cell or Wi-Fi communications) Equipment	NA	NA	NA	NA

Please provide any additional narrative for Locomotive Status below. If any of the information called for in Section 3.1 is unavailable to the railroad at the time it is completing and submitting this form, please insert "TBD" in the appropriate field and/or use this comment box to explain when such information will be available and when the railroad expects to submit it to FRA.

All train equipment includes all of the above as one complete system.

3.2. Infrastructure/Back Office Status

Category / Installation Feature	Completed During Calendar Year	PTCIP Year End Goal	Cumulative Quantity Complete at End of Calendar Year	Total Required for PTC Implementation, as Reported in PTCIP
Infrastructure (Back Office)				
Dispatching Locations (installations complete)	0	0	1	1
Physical Back Office System Equipment (installations complete)	NA	NA	NA	NA

Are the Back Office Location(s) fully operable?	No
Are the Dispatching Location(s) fully operable?	Yes

Please provide any additional narrative for Infrastructure/Back Office Status below:

PATH presently operates one control center with one backup. Both locations are presently in the process of PTC compliant upgrades.

3.3. Installation/Territory Status

Category / Installation Feature	Quantity Installed During Calendar Year	PTCIP Year End Goal	Cumulative Quantity Installed at End of Calendar Year	Total Required for PTC Implementation, as Reported in PTCIP
Infrastructure – Wayside Installations by Territory (i.e., Subdivision, District, Track Segment, Etc.)[2]				
Identification of the Territory (i.e., Subdivision, District, Track Segment, Etc.)†:				
Wayside Interface Units†	NA	NA	NA	NA
Communication Towers or Poles†	NA	NA	NA	NA
Switch Position Monitors†	NA	NA	NA	NA
Wayside Radios†	NA	NA	NA	NA
Base Station Radios†	NA	NA	NA	NA
CBTC Access Points	39	NA	62	144
Are all necessary communication backbone utilities for this track segment (including fiber, copper, ground wiring etc.) installed and ready for operation?† Yes				

Please provide any additional narrative for Installation/Territory Status below. If any of the information called for in Section 3.3 is unavailable to the railroad at the time it is completing and submitting this form, please insert "TBD" in the appropriate field and/or use this comment box to explain when such information will be available and when the railroad expects to submit it to FRA.

THE PATH PTC compliant solution does not utilize the railroad industry solution of back office, 220 MHz radios with base stations, etc...

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[2] Each railroad should report information in a manner consistent with its PTCIP. That is, if a railroad monitors implementation of track segments by territory or subdivision, it should report that way.

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4. Quantity Update on Employees Trained

Required content:

- Separated by each employee category identified below, the number of employees trained during the applicable calendar year and the cumulative number of employees trained at the end of the applicable calendar year, as compared to the number the railroad stated would be trained by the end of that calendar year and in total, in the applicable revised PTCIP, as amended

Employee Category[3]	Number of Employees Trained During Calendar Year	PTCIP Year End Goal	Cumulative Number of Employees Trained at End of Calendar Year	Total Reported in PTCIP
Employees who Install, Maintain, Repair, Modify, Inspect, and Test the PTC System	0	NA	0	64
Employees who Dispatch Train Operations	8	NA	8	80
Train and Engine (Operations) Employees	8	NA	8	320
Roadway Worker Employees	0	NA	0	129
Direct Supervisors of the Above Employees	0	NA	0	30

Please provide any additional narrative for Employee Training below:

In CY 2015, PATH commenced with PTC/CBTC training for both Maintenance and Operations staff in compliance with the regulation. The training of PATH employees for compliance will continue in CY 2016 with an expected completion in CY 2017. PATH is in the process of updating the Roadway Worker Safety Training to incorporate sys functionality.

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[3] *See* 49 C.F.R. § 236.1041(a).

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5. Progress on Implementation Schedule/Milestones

Required content:

- Describe the extent to which the railroad or other entity is not complying with the implementation schedule it provided in its revised PTCIP, as amended

To date the Project is on schedule to the provided data within the PTCIP update (Jan2016).

Section 1 will be available for Revenue Demonstration Testing in October 2016.

6. Summary Update of Challenges/Risks

Required content:

- Any update to the summary of remaining technical, programmatic, operational, or other challenges that the railroad or other entity provided in its revised PTCIP, as amended, including challenges with availability of public funding, interoperability, spectrum, software, permitting, and testing, demonstration, and certification
- Schedule Risk Updates (e.g., funding, technology, agreements)

Please provide Summary Update of Challenges/Risks below:

PATH's signal system complies with items (i), (iv) and partially with item (ii) of the PTC requirements in 49 CFR Part 236, Subpart I 236.1005. PATH is therefore working to implement fully items (ii) and (iii).
PATH has been facing difficulties in the PTC implementation related to:

- As mentioned in previous year annual report, the Superstorm Sandy and its adverse effects on PATH operation delayed PTC implementation.

- PATH specific Operating conditions:

  o PATH has a total of 78 Million trips per year and is key to the economy of the area. PATH is not able to shutdown operation in order to work on the system. Note also that PATH operates 24/7 which limits track access.

  o PATH operates only with two tracks and therefore it is not possible to close one track operation while maintaining peak service operation. PATH has been working only during limited off peak hours.

- The lack of qualified personnel industry wide has been an issue to progress the implementation of the PTC system.

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7. Progress on Revenue Service Demonstration (RSD) or Implementation

Required content:

- The total number of route miles on which PTC has been initiated for revenue service demonstration or implemented, as compared to the total number of route miles required to have a PTC system (see Section 1 Summary Table)
- Estimated start date (month and year) for RSD

Segment Identification[4]	Number of Route Miles in Segment	Status at End of Calendar Year *Current status of installation/track segment.* ***Choose one:***	Estimated Start Date for Revenue Service Demonstration (if not already completed)
Segment: 1 & 2	6	O Not Started O Installing ✸ Testing O Operational/Complete	October 2016
Segment: 3 - 5	4	O Not Started O Installing ✸ Testing O Operational/Complete	May 2018
Segment: 6 &7	6	O Not Started O Installing ✸ Testing O Operational/Complete	July 2018

Please provide any additional narrative for Revenue Service Demonstration or Implementation below:

Click here to enter text.

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[4] Segment identification should be consistent with segments listed in Section 3.3.

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8. Update for Intercity or Commuter Rail Passenger Transportation (if applicable)

If this section is not applicable to your railroad, please mark N/A.

Required content (if applicable):

- For each entity providing regularly scheduled intercity or commuter rail passenger transportation, a description of the resources identified and allocated to implement PTC

Please provide Update for Intercity or Commuter Rail Passenger Transportation below, if applicable:

NA

9. Update on Interoperability Progress and Other Formal Agreements

Required content:
- For host railroads: provide updates to any agreements and key milestones for all tenant operations
- For tenant railroads: provide updates to any agreements and key milestones for all operations over tracks hosted by another railroad

Host and Tenant Railroads: Please provide a general update on interoperability in the textbox below.

NA

Host Railroads Only: For each tenant, please provide additional tenant information below.

Tenant Identification (Please add rows for additional tenants as necessary)	Estimated Tenant Locomotive Fleet (if the tenant does not have a separate PTCIP on file)	Current Tenant Implementation Status Choose one:
NA	NA	O Not Started O Installing O Testing O Operational/Complete

10. Estimated PTC Safety Plan (PTCSP) Submission Date (if not already submitted)

If this section is not applicable to your railroad, please mark N/A.

PTCSP Submission Date
March 24, 2016

Please provide any additional narrative for PTCSP Submission below:

All required documentation has been provided to the FRA. Summary and status of all documentation.
Notice of Product Intent, Rev 1, 4/16/2010, Approved;
Railroad Safety Program Plan, Rev 2, 10/20/2010, Approved
PTC Development Plan, Rev 3, 8/29/2012, Approved
PTC Implementation Plan, Rev 4, 11/12/2012, Approved, Rev update submitted 01/24/16
PTC Field Test Plan, Rev 7, 8/16/2013, Conditionally Approved
PTC Safety Plan, Rev 2, 7/15/2014, Draft informally reviewed by FRA.
PTCSP Revision, Revision 3, 03/24/2016 submitted for formal acceptance.

11. Testing and Integration Efforts (if applicable, laboratory, integration, and revenue service demonstration)

Please provide Update on Testing and Integration efforts below:

Initial PTC system testing began Oct 2015.
FRA witness onsite and participated in the active testing. This effort continues through 2016.

12. Updated Information FRA Geographic Information System (GIS) Database – Segments Complete and Operable

In its annual progress reports, a subject railroad or entity may submit a geographic information system (GIS) shapefile to indicate where various rail segments that must have PTC are located, as long as it includes the following fields: (1) a PTC attribute field (coded with "Y" if line segment is to have PTC installed, otherwise left blank); (2) a SUBDIV attribute field (populated with subdivision name); (3) a MONTH attribute field (populated with the month in which PTC is to be installed); and (4) a YEAR attribute field (populated with the year in which PTC is to be installed). A railroad may submit this information by means other than shapefile format.

Please provide any additional narrative for GIS Information below:

NA