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Mr. Robert Lauby
Associate Administrator for
Railroad Safety / Chief Safety Officer
Office of Railroad Safety
Federal Railroad Administration
1200 New Jersey Avenue, SE
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March 31st, 2016

RE: CN PTC/I-ETMS Annual Progress Report

Mr. Lauby,

Pursuant to the provisions of 49 U.S.C. 20157, as amended by the Positive Train Control Enforcement and Implementation Act of 2015 (PTCEI) and the Fixing America's Surface Transportation (FAST) Act, the U.S. operating subsidiaries of the Canadian National Railway (henceforth referred to as CN) hereby submits the following progress report with regard to the installation and implementation of CN's PTC/I-ETMS System.

This report outlines the progress for 2015, with respect to aspects of implementation as outlined within Form FRA F 6180.166 in reference to the baseline requirements as stated in CN's revised PTCIP, submitted January 27th 2016 [V4.10].

As identified in this report, CN's continuing progress with PTC/I-ETMS implementation has been accelerated as organizational restructuring and allocation of additional resources have been utilized in its facilitation. These resources have resulted in additional support solely dedicated to the project. PTC/I-ETMS training has been integrated into CFR 240/242 recertification training in anticipation of field testing on pilot subdivisions and subsequent deployment of track segments in accordance with CN's PTCIP. Additionally, construction of infrastructure and equipping of locomotives continues in parallel – as to facilitate subdivision roll-out.

Should this report be made public pursuant to 49 U.S.C. 20157(c)(3), CN respectfully requests that the highlighted commercially or security sensitive information be excluded.

Feel free to contact me, should this matter require further discussion.

Sincerely,



D.P. Morphey
Manager, PTC Regulatory - CN

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1. Summary

CN's PTC/I-ETMS project experienced significant growth in 2015 as the project was allocated an increase in resources that translated to an influx of personnel dedicated solely to the project. The allocation of these resources served as the catalyst for a structural reorganization as outlined in CN's revised PTCIP [V4.10], submitted January 27th, 2016. This reorganization resulted in an assessment and process review of the project as a whole, which yielded an emphasis upon the strengthening of the overall test process to include lab environment and field testing procedures in order to mitigate impact upon field operations as well as facilitate a more seamless process for subdivision deployment based upon the philosophy that reinforced testing in the immediate will better serve implementation and deployment in accordance with the PCTIP.

Category	Quantity Completed To Date	Total Quantity Required
Locomotives Fully Equipped	19	586
Installation/Track Segments	3	39
Towers	801	1670
Personnel Trained	144	3159
Back Office Locations Complete and Operable	0	2
Dispatching Locations Complete and Operable	0	1

2. Update on Spectrum Acquisition

CN, through its GTC Spectrum Corp subsidiary, is a member of PTC-220, owned equally by each of the seven Class 1 railroads. PTC-220 holds nationwide and regionally licensed FCC spectrum for PTC implementation in the 220-222 MHz spectrum band that the Communications Segment will utilize for primary communications outside of WiFi coverage at stations or yards. Access to this spectrum for CN and each of the PTC-220 owner-members is provided by PTC-220 through a spectrum lease which CN has executed. The spectrum is available to CN, and the Company will utilize spectrum planning tools provided by PTC-220 that will enable CN to coordinate its spectrum usage with other railroads to ensure adequate availability and interference mitigation in areas of overlapping operation. As reported in CN's revised PTCIP, PTC-220 and its member-owners, including CN, believe that the licenses that PTC-220 has previously acquired and holds provide spectrum sufficient for nationwide PTC implementation, including for CN's U.S. network. Should it prove necessary, PTC-220 would seek to acquire additional spectrum licenses.

3. Quantity Update on Hardware Installation

3.1 Locomotive Status

Category	Installed During Calendar Year	PTCIP End Year Goal	Cumulative Quantity Installed at End of Calendar Year	Total Required for Implementation (PTCIP)
On-Board (e.g. TMC)	■	■	■	■
Software and other applications	■	■	■	■
Displays (CDU)	■	■	■	■
Event Recorders	■	■	■	■
Onboard Antennas and/or Transponders	■	■	■	■
GPS Receivers	■	■	■	■
Locomotive Radios (220MHz)	■	■	■	■
Secondary Comms cell/WiFi)	■	■	■	■

3.2 Infrastructure/Back Office Status

Category	Locations Completed During Calendar Year	Year End Goal (PTCIP)	Cumulative Quantity Complete – End of Year	Total Required for Implementation (PTCIP)
Dispatching Locations (installations Complete)	0	2015 n/a [V4.10]	0	1
Back Office Locations (installations complete)	0	2015 n/a [V4.10]	0	2

3.3 Installation/Track Segment Status

Category	Quantity Installed During Calendar Year	End Year Goal (PTCIP)	Cumulative Quantity Installed – End of Year	Total Required for Implementation (PTCIP)
WIU's	248	2015 n/a [V4.10]	294	1683
Comms Towers	801	2015 n/a [V4.10]	801	1670
Switch Position Monitors	0	2015 n/a [V4.10]	0	164
Wayside Radios	412	2015 n/a [V4.10]	400	1670
Base Station Radios	0	2015 n/a [V4.10]	70	159

4. Quantity Update on Employees Trained

Category	Number of Employees Trained During Calendar Year	Year End Goal (PTCIP)	Cumulative Number of Employees Trained – End of Year	Total Required (PTCIP)
Operations (T&E)	57	2015 n/a [V4.10]	57	2374
Mechanical	81	2015 n/a [V4.10]	81	172
Engineering	0	2015 n/a [V4.10]	0	624
Management	6	2015 n/a [V4.10]	6	84
Other	0	2015 n/a [V4.10]	0	77

5. Progress on Implementation Schedule/Milestones

Pursuant to the provisions of 49 U.S.C. 20157, as amended by the Positive Train Control Enforcement and Implementation Act of 2015 (PTCEI) and the Fixing America’s Surface Transportation (FAST) Act, CN formally submitted a revised PTCIP [V4.10]. This submission outlines implementation schedules for track segment deployment and milestones with respect to the aforementioned provisions. CN remains on schedule with installation and deployment as outlined in PTCIP [V4.10].

6. Summary Update of Challenges/Risks

Section 1.1.7 of CN’s revised PTCIP outlines Technical and Programmatic Risks that include potential labor issues, operational issues, vendor issues, interoperability issues, technological maturity issues, and communications issues.



8. Update for Intercity or Commuter Rail Passenger Transportation

N/A.

9. Update on Interoperability Progress and Formal Agreement(s)

An ITC collaboration agreement was executed by and amongst several railroads wishing to achieve Positive Train Control system interoperability through, in part, the development of an interoperable train control system which would enable locomotives of one participant to transition at track speed to the control of another participant.

CN has exchanged Letters of Understanding with each of its passenger tenant carriers (Metra and Amtrak) who are required to install and operate PTC, as well as with all other Class I Railways. The Letters of Understanding establish agreement between CN and these parties in the following areas:

- Implementation of PTC technical solutions which meet the requirements of interoperability as defined in §236.1003(b);
- Participation in a PTC testing program to verify functionality and interoperability; and
- Exchange of technical information needed to implement PTC in accordance with applicable FRA requirements.



10. Estimated PTCSP Submission Date

CN is currently developing multiple aspects of its PTCSP in conjunction with project progression. As development of internal policies and procedures moves forward in support of implementation, CN has identified the need to revise these policies and procedures as best practices emerge through experience gained during implementation and integration of the I-ETMS system into CN Operations. As such, CN's PTCSP is evolving in nature. In an effort to avoid undue burden of request for RFA, CN is compiling the documentation in parallel to deployment and anticipates formal PTCSP submission, Q4 2017.

11. Testing Integration Efforts

In anticipation of deployment and based upon the implementation of multiple track segments in parallel, CN has identified the need to increase lab testing resources in order to create a robust lab testing process that will provide for a more seamless transition to both field testing as well as Revenue Service. As such, CN has allocated the appropriate resources to increase its lab testing environments from one (1) to nine (9). Additionally, CN is currently vetting potential automated lab testing processes that will assist in streamlining the initial test procedures, allowing for a more fluid transition to field applications.

[REDACTED]

[REDACTED] CN's intends to use the initial field testing process to conduct in depth testing of all facets of system integration and functionality as well as identify best practices as they may pertain to the field testing process as they may provide for areas of opportunity for potential streamlining of the test process in order to facilitate CN's aggressive deployment plan. [REDACTED]

[REDACTED]

- END OF REPORT