

Annual PTC
Progress
Report

2015

North County Transit District - SDNX

FRA-2010-0049

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): North County Transit District

Railroad Code: SDNX

Annual PTC Implementation Progress Report for: 2015

PTCIP Version Number of File with FRA (basis for goals stated): Version 4.1

Submission Date: 1/22/2016

Contents

- 1. Summary 1
- 2. Update on Spectrum Acquisition 3
- 3. Quantity Update on Hardware Installation 4
 - 3.1. Locomotive Status..... 4
 - 3.2. Infrastructure/Back Office Status 5
 - 3.3. Installation/Territory Status..... 6
- 4. Quantity Update on Employees Trained..... 7
- 5. Progress on Implementation Schedule/Milestones 8
- 6. Summary Update of Challenges/Risks..... 8
- 7. Progress on Revenue Service Demonstration (RSD) or Implementation 9
- 8. Update for Intercity or Commuter Rail Passenger Transportation (if applicable) 10
- 9. Update on Interoperability Progress and Other Formal Agreements 10
- 10. Estimated PTC Safety Plan (PTCSP) Submission Date (if not already submitted) 11
- 11. Testing and Integration Efforts (if applicable, laboratory, integration, and revenue service demonstration) 12
- 12. Updated Information That FRA Can Use to Maintain Its Geographic Information System (GIS) Database – Segments Complete and Operable 12

1. Summary

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

GENERAL Monthly stakeholder and interoperability meetings were held in 2015 as were quarterly CalTrans meetings. NCTD attended LA Regional meetings in 2015 until they were discontinued in the latter half of the year. In August 2015 the FRA held a Site Monitoring Visit in Oceanside and an additional interoperability meeting was held with Metrolink in September 2015. The CP Friar Signal Project was completed in 2014 and officially closed in February 2015. All work for the South COASTER Fiber project was completed in 2014 with punch list work continuing into 2015. The project is anticipated to close in 2016.

COMMUNICATIONS Installations at all 19 base station locations completed in 2015. Wi-Fi site testing with NCTD occurred in October 2015 with test results accepted in December 2015. Base radio startup test results were approved in October 2015. Radios were upgraded to v2.0 which kicked off formal radio acceptance testing. Witness training for the Base Radio Startup and Onboard Radio Startup Test Procedures occurred in August 2015. Witness testing on the Base Radio Startup Tests occurred in September 2015.

ONBOARD In 2015, all 17 NCTD vehicles had interim acceptance with a second touch needed for each vehicle due to PTC event recorder issues. Event recorder upgrades began in March 2015 and were completed. Punch list work then started which included the PTC event recorder and the horn-bell-alerter fixes which began in November 2015. By the end of 2015, NCTD issued final acceptance for seven of the 17 vehicles. The remaining 10 vehicle installations have interim acceptance and are in service. Punch list work on the remaining 10 vehicles includes PTC event recorder and the horn-bell-alerter fixes which will complete in 2016. Onboard Radio Startup Tests started in September 2015 with results submitted in October 2015; two radios failed and will be fixed in 2016.

WAYSIDE Wayside Interface Unit (WIU) installations were completed in previous years. WIU implementation completed with WIU test results that were approved in July 2015. Route Verification and Validation (V&V) and Critical Feature V&V testing with NCTD started in November 2015 and completed in December 2015. The FRA was invited to witness the Wayside V&V Testing that began in December 2015. Critical Feature V&V testing with the FRA is anticipated in early 2016.

NETWORK Network site pre-testing began in early 2015. NCTD witness training occurred in mid-June 2015 with NCTD witness testing beginning in July 2015 with anticipated completion in early 2016. HTI is troubleshooting three locations and is anticipating these locations to be fully tested in early 2016. Witness training for the Field Device Network Connection Test with NCTD occurred in November 2015.

BACK OFFICE Much of the focus in 2015 for the back office was on training and testing documentation. TMDs to BOS to onboard pre-testing activities with ITCM completed in 2014. Interoperable Train Control Messaging (ITCM) functional field testing completed. Test cases from CAD to BOS through ITCM to the onboard were run. The CAD, BOS, Onboard functional testing occurred with BOS/ITCM integration beginning. Operator credentials, log-in, and pin numbers were created. Logs from locomotives have been pulled, checking for coverage. Operator credentials, log-in, and pin numbers were created with preliminary initialization trials run. Logs from locomotives are being pulled, checking coverage. Federated MPLS Testing with Metrolink occurred in November 2015 and WSRS to ITCM Interface testing with NCTD occurred in November 2015. Back office network connection training occurred in October 2015. BOS-CAD witness training occurred in October 2015. Key test witness training occurred in December 2015. IC3 documentation was reviewed by HTI who finalized the documentation in preparation for negotiations, the timing of which is under consideration by NCTD.

INTEGRATION The System Integration Test Cases and Procedures as well as the Integration Test Program remain under development and are anticipated to complete in early 2016. Witness training for the Brake Test Cases and Procedures was held in September 2015.

TRAINING All training is anticipated to complete in March 2016. PTC System Overview, Configuration Management, and Field Configuration Management Trainings were held in July 2015. Trainings are being scheduled with NCTD Operations, Vehicle Maintainers, Signal Maintainers, Communications Maintainers, Dispatch, Information Technology and Administration, Operations and Maintenance maintainers, and Track Maintainers. Train Operations training occurred in October, with a second round occurring in January 2016. The Roadway Worker Protection System remains under development in the industry; training will be provided when the System becomes available.

DOCUMENTATION The Test Waiver was conditionally approved by the FRA (August 2014). Test waiver conditions continue under review by HTI. The Configuration Control Management Plan (CCMP) and Field Configuration Management Plan (FCMP) have been formally submitted to the FRA and were found to be acceptable by the FRA (December 2014). The Interoperability Coordination Plan has been signed by all tenants and was sent to Caltrans in September 2015. The Wayside V&V and Critical Feature V&V were found to be acceptable for formal submittal by the FRA (November 2015). A new PTCIP will be submitted in January 2016. PTCSP continues to be developed towards a 75% level in preparation for an informal FRA review planned for August 2016.

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	7	7	7	17
Installation/Track Segments Completed	0	0	1	1
Radio Towers Fully Installed and Equipped	1	19	19	19
Employees Trained	22	0	22	98
Route Miles In Testing or Revenue Service Demonstration	0	0	0	60.1
Route Miles in PTC Operation	0	0	0	60.1

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†: San Diego Subdivision	100% leased	100% leased	100% leased	100% leased

†Note: To add rows for additional spectrum areas or locations, click on the blue “+” symbol at the bottom right-hand corner. Please be sure to first click anywhere inside the table to activate this function.

If this function is unavailable for your document, please manually add additional rows.

Please provide any additional narrative for Spectrum Acquisition below:

Spectrum was leased through PTC220 in 2012 and is available through March 2019. NCTD will maintain the spectrum as it comes up for renewal.

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)	17 (NCTD Equipment)	7 (NCTD Equipment)	17 (NCTD Equipment)	17 (NCTD Equipment)
Software For Train Management and other applications	17 (NCTD Equipment)	7 (NCTD Equipment)	17 (NCTD Equipment)	17 (NCTD Equipment)
PTC Displays	17 (NCTD Equipment)	7 (NCTD Equipment)	17 (NCTD Equipment)	17 (NCTD Equipment)
Event Recorders	7 (NCTD Equipment)	7 (NCTD Equipment)	7 (NCTD Equipment)	17 (NCTD Equipment)
Onboard Antennas and/or Transponder Readers	17 (NCTD Equipment)	7 (NCTD Equipment)	17 (NCTD Equipment)	17 (NCTD Equipment)
GPS Receivers	17 (NCTD Equipment)	7 (NCTD Equipment)	17 (NCTD Equipment)	17 (NCTD Equipment)
Locomotive Radios – Primary Communications (e.g., 220 MHz radios)	17 (NCTD Equipment)	17(NCTD Equipment)	17 (NCTD Equipment)	17 (NCTD Equipment)

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

Secondary Communications (e.g., cell or Wi-Fi communications) Equipment	17 Wi-Fi 17 cell (NCTD Equipment)	7 Wi-Fi 7 cell (NCTD Equipment)	17 Wi-Fi 17 cell (NCTD Equipment)	17 Wi-Fi 17 cell (NCTD Equipment)
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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.

In 2015, NCTD gave final acceptance for seven vehicles having PTC installed. The remaining ten vehicles have interim acceptance due to punch list items related to the event recorder, which will complete in early 2016.

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)	1	1	1	1
Physical Back Office System Equipment (installations complete)	1	1	1	1

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

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

Back office hardware has been installed at the dispatch center. Testing BOS software with new PTC CAD. To be integrated in 2016.

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.)†: San Diego				
Wayside Interface Units†	0	48	48	48
Communication Towers or Poles†	1	19	19	19
Switch Position Monitors†	NA	NA	NA	NA
Wayside Radios†	NA	NA	NA	NA
Base Station Radios†	0	19	19	19
Are all necessary communication backbone utilities for this track segment (including fiber, copper, ground wiring etc.) installed and ready for operation?† Yes				

†Note: To add rows for additional territories and associated sub-components, click on the blue “+” symbol at the bottom right-hand corner. Please be sure to first click anywhere inside the table to activate this function. If this function is unavailable for your document, please manually add additional rows.

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.

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.

Click here to enter text.

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	18	0	18	NA
Employees who Dispatch Train Operations	0	0	0	NA
Train and Engine (Operations) Employees	3	0	3	NA
Roadway Worker Employees	0	0	0	NA
Direct Supervisors of the Above Employees	1	0	1	NA

Please provide any additional narrative for Employee Training below:

³ See 49 C.F.R. § 236.1041(a).

Please note that that number of employees trained were not broken down in the PTCIP by category. A total of 98 employees are to be trained, with the PTCIP year end goal of no employees being trained.

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

NCTD is assessing the schedule for variances from the PTCIP. NCTD has no variances to report at this time.

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:

Remaining challenges include:

Wabtec's Individual Composite CRC (Cyclic Redundancy Check) Calculator (IC3): The IC3 proposal is anticipated to be finalized and negotiated in 2016. IC3 originated as a requirement from ITC – Hazard Mitigation functionality. IC3 will be required to receive Safety Certification from the FRA. The schedule for implementing IC3 is under discussion.

Back Office: Integration between the Back Office Server (BOS), Interoperable Train Control Messaging (ITCM), and Computer Aided Dispatch (CAD) is a challenge. Testing procedures have been approved, with test procedure training and testing occurring in early 2016.

Documentation: Various test programs/procedures as well as training course materials are on the near critical path. The documentation is a continued focus.

Testing: Software version changes and related regression testing may impact the schedule.

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 <i>Current status of installation/track segment. Choose one:</i>	Estimated Start Date for Revenue Service Demonstration (if not already completed)
Segment (add additional rows for segments as necessary): San Diego	0	<input checked="" type="radio"/> Not Started <input type="radio"/> Installing <input type="radio"/> Testing <input type="radio"/> Operational/Complete	July 2016

Note: To add additional rows, click on the blue “+” symbol at the bottom right-hand corner. Please be sure to first click anywhere inside the table to activate this function.

If this function is unavailable for your document, please manually add additional rows.

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

NCTD is assessing the schedule for variances from the July 2016 date. NCTD has no variances to report at this time.

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

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:

NCTD as the host railroad provides Commuter Rail Passenger services. NCTD’s tenants include Southern California Regional Rail Authority (Metrolink) also as commuter rail, and Amtrak providing intercity passenger rail.

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.

All interoperability agreements with the tenants are signed. NCTD received signed Interoperable Electronic Train Management System Field Testing Notification letters from all tenants. NCTD does not believe interoperability will be an issue with BNSF and Metrolink as they are already in RSD. NCTD will be working closely with PacSun and Amtrak on NCTD’s subdivision.

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

Tenant Identification <i>(Please add rows for additional tenants as necessary)</i>	Estimated Tenant Locomotive Fleet <i>(if the tenant does not have a separate PTCIP on file)</i>	Current Tenant Implementation Status <i>Choose one:</i>
BNSF Railway	Has a PTCIP on file.	<input type="radio"/> Not Started <input type="radio"/> Installing <input type="radio"/> Testing <input checked="" type="radio"/> Operational/Complete
Southern California Regional Rail Authority	Has a PTCIP on file.	<input type="radio"/> Not Started <input type="radio"/> Installing

		<input type="radio"/> Testing <input checked="" type="radio"/> Operational/Complete
Amtrak	Has a PTCIP on file.	<input type="radio"/> Not Started <input checked="" type="radio"/> Installing <input type="radio"/> Testing <input type="radio"/> Operational/Complete
Pacific Sun Railroad	3 locomotives	<input type="radio"/> Not Started <input type="radio"/> Installing <input checked="" type="radio"/> Testing <input type="radio"/> Operational/Complete

Note: To add additional rows, click on the blue "+" symbol at the bottom right-hand corner. Please be sure to first click anywhere inside the table to activate this function.

If this function is unavailable for your document, please manually add additional rows.

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 2017

Please provide any additional narrative for PTCSP Submission below:

NCTD is assessing the schedule for variances from the July 2016 date. NCTD has no variances to report at this time.

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

Please provide Update on Testing and Integration efforts below:

NCTD has encountered challenges during segment testing and nearest neighbor testing. Development of integration testing documents is underway.

12. Updated Information That FRA Can Use to Maintain Its 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:

[Click here to enter text.](#)

Public reporting burden for this information collection is estimated to average 38.41 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for this information collection is **2130-0553**. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection, including suggestions for reducing this burden to OMB's Office of Information and Regulatory Affairs, Attn: FRA OMB Desk Officer.