



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

AUG 26 2011

Mr. Jeff D. Young
Assistant Vice President, Transportation System
Union Pacific Railroad
1400 Douglas Street, MS 0480
Omaha, NE 68179

Ms. Lisa C. Wilson
Manager, ATC Regulatory Compliance
Norfolk Southern Railway
1200 Peachtree Street NE, Box 123
Atlanta, GA 30309

Ms. Denise E. Lyle
Director, Advanced Engineering
CSX Transportation
500 Water Street, SC J340
Jacksonville, FL 32202

Re: FRA Type Approval (FRA-TA-2011-02) for the Interoperable Electronic Train
Management System (I-ETMS)

Dear Messrs. Young, Wilson, and Lyle:

The Federal Railroad Administration (FRA) has completed its review of your Interoperable Electronic Train Management System (I-ETMS) Positive Train Control Development Plan (PTCDP) Version 2, dated June 1, 2011, submitted in fulfillment of the requirements of and in compliance with the final rule for Positive Train Control (PTC) systems, Title 49 Code of Federal Regulations (CFR) Section 236.1013.

After review of the submitted documentation, FRA finds that the I-ETMS described within the PTCDP Version 2, dated June 1, 2011, if built and implemented in accordance with that which is described therein, will satisfy the requirements for PTC systems as are specified within 49 CFR Part 236, Subpart I. Accordingly, FRA approves the I-ETMS PTCDP Version 2, dated June 1, 2011, with special conditions identified within the body of this letter as is provided for in 49 CFR § 236.1009(g)(1). FRA also is simultaneously issuing the attached Type Approval FRA-TA-2011-02 for I-ETMS (Enclosure 1) in accordance with 49 CFR §§ 236.1009(f) and (g), and 236.1013(b).

FRA would like to take this opportunity to thank you for your continued cooperation throughout the difficult process of the successful creation of the PTCDP, and to remind you that the I-ETMS must be developed and implemented as defined in the Type Approval issued for the I-ETMS. Any modifications of the I-ETMS beyond the provisions outlined in the Type Approval will require submittal of a Request for Amendment (RFA) for the modified PTC system, in accordance with 49 CFR §§ 236.1009(b) and 236.1013. FRA may reconsider the Type Approval upon revelation of factors outlined in 49 CFR § 236.1009(g). FRA review and approval are required for each RFA, and they must be fully justified to and approved by the Associate Administrator for Railroad Safety/Chief Safety Officer. Requests for amendments to this Type Approval must also be accompanied by an impact assessment statement which identifies the potential impact of the change on other I-ETMS users.

As a special condition of issuance of this I-ETMS Type Approval, FRA requires you to submit the following no later than 60 days from the date of this letter:

1. A complete listing of all I-ETMS configurable items and variables along with their maximum and minimum values. Specific values assigned to these variables must then be identified in each I-ETMS employing railroad's PTC Safety Plan submitted for FRA approval.
2. The specific BNSF Human Machine Interface Document referenced in Section 7 of the I-ETMS PTCDP, by version number and date, for inclusion in the public record with the Type Approval.
3. A written affirmation that the railroads shall continue to work through the ITC development process to develop an industry solution for the necessary PTC system warning and enforcement where the need for alternative warning associated with a malfunctioning highway-rail grade crossing active warning system is confirmed. The applicable operational restriction needs to be lifted by the inherent function of the PTC system, or at minimum via other means that is more fail-safe. A single prompt provided the engineer to confirm verbal authority to operate otherwise has been received from an authorized or designated employee at the crossing is unacceptable. This issue needs to be resolved prior to the December 31, 2015 mandate.

Failure to provide the above information may invalidate this Type Approval.

As part of this PTCDP approval, FRA accepts the listing within Section 8 of the PTCDP regarding the applicability of the requirements of Part 236, Subparts A through G, given that a full description of how the underlying safety principle of each listed rule section is otherwise achieved is included in the PTC Safety Plan (PTCSP) of each I-ETMS-employing railroad.

Unless roadway workers are using an Employee In Charge (EIC) terminal that allows the EIC to control access of a train into and through a work zone, acknowledgement by the engineer of a verbal authority from the EIC requires an initial acknowledgement, followed by

a confirmation of the acknowledgement, before the locomotive is allowed to proceed into the work zone.

This Type Approval does not authorize the use of electronic delivery of authorities as the sole means of relaying authorities to the train crew. Until such time as the digital delivery of authorities for the sole means of conveying authority limits has been approved by FRA, both authorities (paper and electronic) shall be compared. In the event of a conflict between the two authorities, the most restrictive of the authority, shall apply.

This Type Approval does not represent automatic approval of the use of the I-ETMS for vital applications. A system is an organized, purposeful structure regarded as a whole and consisting of interrelated and interdependent elements (components, entities, and factors). All claims of a vital implementation of the I-ETMS must be demonstrated to the satisfaction of FRA in the individual submitting railroad's PTCSP. Use of I-ETMS in vital applications by an individual railroad is not authorized unless certified by FRA for that specific railroad application

All railroads electing to use this Type Approval are reminded of the requirements of 49 CFR § 236.1015(b) and (c) regarding using Type Approvals in support of a PTCSP.

Should you have any questions regarding this letter, or its conditions, please feel free to contact Mr. Thomas McFarlin, Staff Director, Signal and Train Control Division at (202) 493-6203 or Thomas.McFarlin@dot.gov; Mr. Robert Scieszinski, PTC Branch Chief at (360)-883-5811 or Robert.Scieszinski@dot.gov; or, Dr. Mark Hartong, Senior Electronics Engineer at (202) 493-1332 or Mark.Hartong@dot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Jo Strang". The signature is fluid and cursive, with a large, sweeping "S" and a long, trailing flourish at the end.

Jo Strang
Associate Administrator for Railroad Safety/Chief Safety Officer

Enclosure