

(6) A description of any special instrumentation to be used during the tests.

(7) A description of the information or data to be obtained.

(8) A description of how the information or data obtained is to be analyzed or used.

(9) A description of any criteria to be used as safety limits during the testing.

(10) A description of the criteria to be used to measure or determine the success or failure of the tests. If acceptance is to be based on extrapolation of less than full level testing results, the analysis to be done to justify the validity of the extrapolation shall be described.

(11) A description of any special safety precautions to be observed during the testing.

(12) A written set of standard operating procedures to be used to ensure that the testing is done safely.

(13) Quality control procedures to ensure that the inspection, testing, and maintenance procedures are followed.

(14) Criteria to be used for the revenue service operation of the equipment.

(15) A description of all testing of the equipment that has previously been performed, if any.

(f) *Exception.* For brake system technologies that have previously been used in revenue service in the United States, the railroad shall test the equipment on its system, prior to placing it in revenue service, to ensure the compatibility of the equipment with the operating system (track, signals, etc.) of the railroad. A description of such testing shall be retained by the railroad and made available to FRA for inspection and copying upon request.

### Subpart G—Electronically Controlled Pneumatic (ECP) Braking Systems

SOURCE: 73 FR 61553, Oct. 16, 2008, unless otherwise noted.

#### § 232.601 Scope.

This subpart contains specific requirements applicable to freight trains and freight cars equipped with ECP brake systems. This subpart also con-

tains specific exceptions from various requirements contained in this part for freight trains and freight cars equipped with ECP brake systems.

#### § 232.602 Applicability.

This subpart applies to all railroads that operate a freight car or freight train governed by this part and equipped with an ECP brake system. Unless specifically excepted or modified in this section, all of the other requirements contained in this part are applicable to a freight car or freight train equipped with an ECP brake system.

#### § 232.603 Design, interoperability, and configuration management requirements.

(a) *General.* A freight car or freight train equipped with an ECP brake system shall, at a minimum, meet the Association of American Railroads (AAR) standards contained in the AAR Manual of Standards and Recommended Practices related to ECP brake systems listed below; an alternate standard approved by FRA pursuant to § 232.17; or a modified standard approved in accordance with the provisions contained in paragraph (f) of this section. The incorporation by reference of the AAR standards identified in this section was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the incorporated documents may be obtained from the Association of American Railroads, 50 F Street, NW., Washington, DC 20001, 202-639-2100, [www.aar.org](http://www.aar.org). You may inspect a copy at the Federal Railroad Administration, 1200 New Jersey Avenue, SE., Washington, DC, 202-493-6300 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). The applicable standards, which are incorporated into this regulation by reference, include the following:

(1) AAR S-4200, "Electronically Controlled Pneumatic (ECP) Cable-Based

Brake Systems—Performance Requirements,” (Adopted 1999; Revised: 2002, 2004, 2008);

(2) AAR S-4210, “ECP Cable-Based Brake System Cable, Connectors, and Junction Boxes—Performance Specifications,” (Adopted: 1999; Revised 2002, 2007);

(3) AAR S-4220, “ECP Cable-Based Brake DC Power Supply—Performance Specification,” Version 2.0 (Adopted: 1999; Revised: 2002);

(4) AAR S-4230, “Intratrains Communication (ITC) Specification for Cable-Based Freight Train Control System,” Version 3.0 (Adopted: 1999; Revised: 2002, 2004);

(5) AAR S-4240, “ECP Brake Equipment—Approval Procedure” (Adopted: 2007);

(6) AAR S-4250, “Performance Requirements for ITC Controlled Cable-Based Distributed Power Systems,” Version 2.0 (Adopted: 2003; Revised: 2004);

(7) AAR S-4260, “ECP Brake and Wire Distributed Power Interoperability Test Procedures” (Adopted: 2007); and

(8) AAR S-4270, “ECP Brake System Configuration Management” (Adopted: 2008).

(b) *Approval.* A freight train or freight car equipped with an ECP brake system and equipment covered by the AAR standards incorporated by reference in this section shall not be used without conditional or final approval by AAR in accordance with AAR Standard S-4240, “ECP Brake Equipment—Approval Procedures” (2007).

(c) *Configuration management.* A railroad operating a freight train or freight car equipped with ECP brake systems shall adopt and comply with the configuration management plan developed in accordance with the AAR standards incorporated by reference in this section. FRA reserves the right to audit a manufacturer’s configuration management plan at any time.

(d) *Exceptions.* (1) A freight car or freight train equipped with a stand-alone ECP brake system shall be excepted from the requirement in § 232.103(l) referencing AAR Standard S-469-47, “Performance Specification for Freight Brakes.”

(2) The provisions addressing the introduction of new brake system tech-

nology contained in subpart F of this part are not applicable to a freight car or freight train equipped with an ECP brake system approved by AAR in accordance with paragraph (b) of this section, conditionally or otherwise, as of the effective date of this rule.

(e) *New technology.* Upon written request supported by suitable justification and submitted pursuant to the special approval procedures in § 232.17, the Associate Administrator may except from the requirements of subpart F of this part the testing of new ECP brake technology, demonstration of new ECP brake technology, or both, where testing or demonstration, or both, will be conducted pursuant to an FRA-recognized industry standard and FRA is invited to monitor the testing or demonstration, or both.

(f) *Modification of standards.* The AAR or other authorized representative of the railroad industry may seek modification of the industry standards identified in or approved pursuant to paragraph (a) of this section. The request for modification will be handled and shall be submitted in accordance with the modification procedures contained in § 232.307.

#### § 232.605 Training requirements.

(a) *Inspection, testing and maintenance.* A railroad that operates a freight car or freight train equipped with an ECP brake system and each contractor that performs inspection, testing, or maintenance on a freight car or freight train equipped with an ECP brake system shall adopt and comply with a training, qualification, and designation program for its employees that perform inspection, testing or maintenance of ECP brake systems. The training program required by this section shall meet the requirements in §§ 232.203(a), (b), (e), and (f).

(b) *Operating rules.* A railroad operating a freight train or freight car equipped with an ECP brake system shall amend its operating rules to govern safe train handling procedures related to ECP brake systems and equipment under all operating conditions and shall tailor its operating rules to the specific equipment and territory of the railroad.