train may only continue in accordance with the following:

(1) The train may proceed at restricted speed, or if a block signal system is in operation according to signal indication at medium speed, to the next available point where communication of a report can be made to a designated railroad officer of the host railroad;

(2) Upon completion and communication of the report required in paragraph (b)(1) of this section, or where immediate electronic report of said condition is appropriately provided by the PTC system itself, a train may continue to a point where an absolute block can be established in advance of the train in accordance with the following:

(i) Where no block signal system is in use, the train may proceed at restricted speed, or

(ii) Where a block signal system is in operation according to signal indication, the train may proceed at a speed not to exceed medium speed.

(3) Upon reaching the location where an absolute block has been established in advance of the train, as referenced in paragraph (b)(2) of this section, the train may proceed in accordance with the following:

(i) Where no block signal system is in use, the train may proceed at medium speed; however, if the involved train is a passenger train or a train hauling any amount of PIH material, it may only proceed at a speed not to exceed 30 miles per hour.

(ii) Where a block signal system is in use, a passenger train may proceed at a speed not to exceed 59 miles per hour and a freight train may proceed at a speed not to exceed 49 miles per hour.

(iii) Except as provided in paragraph (c), where a cab signal system with an automatic train control system is in operation, the train may proceed at a speed not to exceed 79 miles per hour.

(c) In order for a train equipped with PTC traversing a track segment equipped with PTC to deviate from the operating limitations contained in paragraph (b) of this section, the deviation must be described and justified in the FRA approved PTCDP or PTCSP, or the Order of Particular Applicability, as applicable.

(d) Each railroad shall comply with all provisions in the applicable PTCDP and PTCSP for each PTC system it uses and shall operate within the scope of initial operational assumptions and predefined changes identified.

(e) The normal functioning of any safety-critical PTC system must not be interfered with in testing or otherwise without first taking measures to provide for the safe movement of trains, locomotives, roadway workers, and on-track equipment that depend on the normal functioning of the system.

(f) The PTC system's onboard apparatus shall be so arranged that each member of the crew assigned to perform duties in the locomotive can receive the same PTC information displayed in the same manner and execute any functions necessary to that crew member's duties. The locomotive engineer shall not be required to perform functions related to the PTC system while the train is moving that have the potential to distract the locomotive engineer from performance of other safety-critical duties.

§ 236.1031 Previously approved PTC systems.

(a) Any PTC system fully implemented and operational prior to March 16, 2010, may receive PTC System Certification if the applicable PTC railroad, or one or more system suppliers and one or more PTC railroads, submits a Request for Expedited Certification (REC) letter to the Associate Administrator. The REC letter must do one of the following:

(1) Reference a product safety plan (PSP) approved by FRA under subpart H of this part and include a document fulfilling the requirements under §§ 236.1011 and 236.1013 not already included in the PSP;

(2) Attest that the PTC system has been approved by FRA and in operation for at least 5 years and has already received an assessment of Verification and Validation from an independent third party under part 236 or a waiver supporting such operation; or

(3) Attest that the PTC system is recognized under an Order issued prior to March 16, 2010.

(b) If an REC letter conforms to paragraph (a)(1) of this section, the Associate Administrator, at his or her sole discretion, may also issue a new Type Approval for the PTC system.

(c) In order to receive a Type Approval or PTC System Certification under paragraph (a) or (b) of this section, the PTC system must be shown to reliably execute the functionalities required by §§ 236.1005 and 236.1007 and otherwise conform to this subpart.

(d) Previous approval or recognition of a train control system, together with an established service history, may, at the request of the PTC railroad, and consistent with available safety data, be credited toward satisfaction of the safety case requirements set forth in this part for the PTCSP with respect to all functionalities and implementations contemplated by the approval or recognition.

(e) To the extent that the PTC system proposed for implementation under this subpart is different in significant detail from the system previously approved or recognized, the changes shall be fully analyzed in the PTCDP or PTCSP as would be the case absent prior approval or recognition.

(f) As used in this section—

(1) *Approved* refers to approval of a Product Safety Plan under subpart H of this part.

(2) *Recognized* refers to official action permitting a system to be implemented for control of train operations under an FRA order or waiver, after review of safety case documentation for the implementation.

(g) Upon receipt of an REC, FRA will consider all safety case information to the extent feasible and appropriate, given the specific facts before the agency. Nothing in this section limits reuse of any applicable safety case information by a party other than the party receiving:

(1) A prior approval or recognition referred to in this section; or

(2) A Type Approval or PTC System Certification under this subpart.

§ 236.1033 Communications and security requirements.

(a) All wireless communications between the office, wayside, and onboard components in a PTC system shall provide cryptographic message integrity and authentication.

(b) Cryptographic keys required under paragraph (a) of this section shall:

(1) Use an algorithm approved by the National Institute of Standards (NIST) or a similarly recognized and FRA approved standards body;

(2) Be distributed using manual or automated methods, or a combination of both; and

(3) Be revoked:

(i) If compromised by unauthorized disclosure of the cleartext key; or

(ii) When the key algorithm reaches its lifespan as defined by the standards body responsible for approval of the algorithm.

(c) The cleartext form of the cryptographic keys shall be protected from unauthorized disclosure, modification, or substitution, except during key entry when the cleartext keys and key components may be temporarily displayed to allow visual verification. When encrypted keys or key components are entered, the cryptographically protected cleartext key or key components shall not be displayed.

(d) Access to cleartext keys shall be protected by a tamper resistant mechanism.

(e) Each railroad electing to also provide cryptographic message confidentiality shall:

(1) Comply with the same requirements for message integrity and authentication under this section; and

(2) Only use keys meeting or exceeding the security strength required to protect the data as defined in the railroad's PTCSP and required under § 236.1013(a)(7).

(f) Each railroad, or its vendor or supplier, shall have a prioritized service restoration and mitigation plan for scheduled and unscheduled interruptions of service. This plan shall be included in the PTCDP or PTCSP as required by §§ 236.1013 or 236.1015, as applicable, and made available to FRA upon request, without undue delay, for restoration of communication services that support PTC system services.

(g) Each railroad may elect to impose more restrictive requirements than those in this section, consistent with