SUPPORTING JUSTIFICATION
POSITIVE TRAIN CONTROL

1. EXPLAIN THE CIRCUMSTANCES THAT MAKE THE COLLECTION OF INFORMATION NECESSARY. IDENTIFY ANY LEGAL OR ADMINISTRATIVE REQUIREMENTS THAT NECESSITATE THE COLLECTION. ATTACH A COPY OF THE APPROPRIATE SECTION OF EACH STATUTE AND REGULATION MANDATING OR AUTHORIZING THE COLLECTION OF INFORMATION.

Since the early 1920s, systems have been in use that can intervene in train operations by warning crews or causing trains to stop if they are not being operated safely because of inattention, misinterpretation of wayside signal indications, or incapacitation of the crew. Pursuant to orders of the Interstate Commerce Commission (ICC)—whose safety regulatory activities were later transferred to FRA when it was established in 1967—cab signal systems, automatic train control, and automatic train stop systems were deployed on a significant portion of the national rail system to supplement and enforce the indications of wayside signals and operating speed limitations. However, these systems were expensive to install and maintain, and with the decline of intercity passenger service following the Second World War, the ICC and the industry allowed many of these systems to be discontinued. During this period, railroads were heavily regulated with respect to rates and service responsibilities. The development of the Interstate Highway System and other factors led to reductions in the railroads' revenues without regulatory relief, leading to bankruptcies, railroad mergers, and eventual abandonment of many rail lines. Consequently, railroads focused on fiscal survival, and investments in expensive relay-based train control technology were economically out of reach. The removal of these train control systems, which had never been pervasively installed, permitted train collisions to continue, notwithstanding enforcement of railroad operating rules designed to prevent them.

As early as 1970, following its investigation of the August 20, 1969, head-on collision of two Penn Central Commuter trains near Darien, Connecticut, in which 4 people were killed and 45 people were injured, the National Transportation Safety Board (NTSB) asked FRA to study the feasibility of requiring a form of automatic train control system to protect against operator error and prevent train collisions. Following the Darien accident, the NTSB continued to investigate one railroad accident after another caused by human error. During the next two decades, the NTSB issued a number of safety recommendations asking for train control measures. Following its investigation of the May 7, 1986, rear-end collision involving a Boston and Maine Corporation commuter train and a Consolidated Rail Incorporated (Conrail) freight train in which 153 people were injured, the NTSB recommended that FRA promulgate standards to require the installation and operation of a train control system that would provide for positive train

separation. NTSB Recommendation R-87-16 (May 19, 1987). When the NTSB first established its Most Wanted List of Transportation Safety Improvements in 1990, the issue of Positive Train Separation was among the improvements listed, and it remained on the list until just after enactment of RSIA08. The NTSB continues to follow the progress of the technology's implementation closely and participated through staff in the most recent PTC Working Group deliberations.

Meanwhile, enactment of the Staggers Rail Act of 1980 signaled a shift in public policy that permitted the railroads to shed unprofitable lines, largely replace published "tariffs" with appropriately priced contract rates, and generally respond to marketplace realities, which increasingly demanded flexible service options responsive to customer needs. The advent of microprocessor-based electronic control systems and digital data radio technology during the mid-1980s led the freight railroad industry, through the Association of American Railroads (AAR) and the Railway Association of Canada, to explore the development of Advanced Train Control Systems (ATCS). With broad participation by suppliers, railroads, and FRA, detailed specifications were developed for a multi-level "open" architecture that would permit participation by many suppliers while ensuring that systems deployed on various railroads would work in harmony as trains crossed corporate boundaries. ATCS was intended to serve a variety of business purposes, in addition to enhancing the safety of train operations. Pilot versions of ATCS and a similar system known as Advanced Railroad Electronic Systems (ARES) were tested relatively successfully, but the systems were never deployed on a wide scale primarily due to cost. However, sub-elements of these systems were employed for various purposes, particularly for replacement of pole lines associated with signal systems.

Collisions, derailments, and incursions into work zones used by roadway workers continued as a result of the absence of effective enforcement systems designed to compensate for effects of fatigue and other human factors. Renewed emphasis on rules compliance and federal regulatory initiatives, including rules for control of alcohol and drug use in railroad operations, operating rules testing of rail employees, requirements for qualification and certification of locomotive engineers, and negotiated rules for roadway worker protection led to some reduction in risk. However, the lack of an effective collision avoidance system allowed the continued occurrence of accidents, some involving tragic losses of life and significant property damage.

As the NTSB continued to highlight the opportunities for accident prevention associated with emerging train control technology through its investigations and findings, Congress showed increasing interest, mandating three separate reports over the period of a decade. In 1994, FRA reported to Congress on this problem, calling for implementation of an action plan to deploy PTC systems (Railroad Communications and Train Control, July 1994 (hereinafter "1994 Report")). The 1994 Report forecasted substantial benefits of advanced train control technology to support a variety of business and safety purposes,

but noted that an immediate regulatory mandate for PTC could not be justified based upon normal cost-benefit principles relying on direct safety benefits. The report outlined an aggressive Action Plan implementing a public-private sector partnership to explore technology potential, deploy systems for demonstration, and structure a regulatory framework to support emerging PTC initiatives.

Following through on the 1994 Report, FRA committed approximately $40 million through the Next Generation High Speed Rail Program and the Research and Development Program to support development, testing, and deployment of PTC prototype systems in the Pacific Northwest, Michigan, Illinois, Alaska, and some Eastern railroads. FRA also initiated a comprehensive effort to structure an appropriate regulatory framework for facilitating voluntary implementation of PTC and for evaluating future safety needs and opportunities.

In September of 1997, FRA asked the RSAC to address the issue of PTC. The RSAC accepted three tasks: Standards for New Train Control Systems (Task 1997-06), Positive Train Control Systems-Implementation Issues (Task 1997-05), and Positive Train Control Systems-Technologies, Definitions, and Capabilities (Task 1997-04). The PTC Working Group was established, comprised of representatives of labor organizations, suppliers, passenger and freight railroads, other federal agencies, and interested state departments of transportation. The PTC Working Group was supported by FRA counsel and staff, analysts from the Volpe National Transportation Systems Center, and advisors from the NTSB staff.

In 1999, the PTC Working Group provided to the Federal Railroad Administrator a consensus report ("1999 Report") with an indication that it would be continuing its efforts. The report defined the PTC core functions to include: prevention of train-to-train collisions (positive train separation); enforcement of speed restrictions, including civil engineering restrictions (curves, bridges, etc.) and temporary slow orders; and protection for roadway workers and their equipment operating under specific authorities. The PTC Working Group identified additional safety functions that might be included in some PTC architectures: provide warning of on-track equipment operating outside the limits of authority; receive and act upon hazard information, when available, in a more timely or more secure manner (e.g., compromised bridge integrity, wayside detector data); and provide for future capability by generating data for transfer to highway users to enhance warning at highway-rail grade crossings. The PTC Working Group stressed that efforts to enhance highway-rail grade crossing safety must recognize the train's necessary right of way at grade crossings and that it is important that warning systems employed at highway-rail grade crossings be highly reliable and "fail-safe" in their design.

As the PTC Working Group's work continued, other collaborative efforts, including development of Passenger Equipment Safety Standards (including private standards through the American Public Transit Association), Passenger Train Emergency

Preparedness rules, and proposals for improving locomotive crashworthiness (including improved fuel tank standards) have targeted reduction in collision and derailment consequences.

In 2003, in light of technological advances and potential increased cost and system savings related to prioritized deployment of PTC systems, the Appropriations Committees of Congress requested that FRA update the costs and benefits for the deployment of PTC and related systems. As requested, FRA carried out a detailed analysis that was filed in August of 2004 ("2004 Report"), which indicated that under one set of highly controversial assumptions, substantial public benefits would likely flow from the installation of PTC systems on the railroad system. Further, the total amount of these benefits was subject to considerable controversy. While many of the other findings of the 2004 Report were disputed, there were no data submitted to challenge the 2004 Report finding that reaffirmed earlier conclusions that the safety benefits of PTC systems were relatively small in comparison to the large capital and maintenance costs. Accordingly, FRA continued to believe that an immediate regulatory mandate for widespread PTC implementation could not be justified based upon traditional cost-benefit principles relying on direct railroad safety benefits. *Benefits and Costs of Positive Train Control* (Report in Response to Committees on Appropriations, August 2004).

Despite the economic infeasibility of PTC based on safety benefits alone, as outlined in the 1994, 1999, and 2004 Reports, FRA continued with regulatory and other efforts to facilitate and encourage the voluntary installation of PTC systems. As part of the High Speed Rail Initiative, and in conjunction with the National Railroad Passenger Corporation (Amtrak), the AAR, the State of Illinois, and the Union Pacific Railroad Company (UP), FRA created the North American Joint Positive Train Control (NAJPTC) Program, which set out to describe a single standardized open source PTC architecture and system. UP's line between Springfield and Mazonia, Illinois, was selected for initial installation of a train control system to support Amtrak operations up to 110 mph, and the system was installed and tested on portions of that line. Although the system did not prove viable as then conceived, the project hastened the development of PTC technology that was subsequently employed in other projects. Promised standards for interoperability of PTC systems also proved elusive.

In addition to financially supporting the NAJPTC Program, FRA continued to work with the rail carriers, rail labor, and suppliers on regulatory reforms to facilitate voluntary PTC implementation. The regulatory reform effort culminated when FRA issued a final rule on March 7, 2005, establishing a technology neutral safety-based performance standard for processor-based signal and train control systems. This new regulation, codified as subpart H to part 236, was carefully crafted to encourage the voluntary implementation and operation of processor-based signal and train control systems without impairing technological development. 70 FR 11052 (March 7, 2005).

FRA intended that final rule—developed in close cooperation with rail management, rail labor, and suppliers—to further facilitate individual railroad efforts to voluntarily develop and deploy cost effective PTC technologies that would make system-wide deployment more economically viable. It also appeared very possible that major railroads would elect to make voluntary investments in PTC to enhance safety, improve service quality, and foster efficiency (e.g., better asset utilization, reduced fuel use through train pacing).

While FRA and RSAC worked to develop consensus on the regulations that would become subpart H, the railroads continued with PTC prototype development. The technology neutral, performance-based regulatory process established by subpart H proved to be very successful in facilitating the development of other PTC implementation approaches. Although the railroads prototype development efforts were generally technically successful and offered significant improvements in safety, costs of nationwide deployment continued to be untenable. Information gained from prototype efforts did little to reduce the estimated costs for widespread implementation of the core PTC safety functions on the nation's railroads.

Working under subpart H, the BNSF Railway Company (BNSF), CSX Transportation, Inc. (CSXT), the Norfolk Southern Corporation (NS), and UP undertook more aggressive design and implementation work. The new subpart H regulatory approach also made it feasible for smaller railroads such as the Alaska Railroad and the Ohio Central Railroad to begin voluntary design and implementation work on PTC systems that best suited their needs. FRA provided, and continues to provide, technical assistance and guidance regarding regulatory compliance to enable the railroads to more effectively design, install, and test their respective systems.

In December 2006, FRA approved the initial version of the Electronic Train Management System (ETMS) product for deployment on 35 of BNSF's subdivisions ("ETMS I Configuration") comprising single track territory that was either non-signaled or equipped with traffic control systems. In a separate proceeding, FRA agreed that ETMS could be installed in lieu of restoring a block signal system on a line for which discontinuance had been authorized followed by a significant increase in traffic. During the same period, BNSF successfully demonstrated a Switch Point Monitoring System (SPMS)—a system that contains devices attached to switches that electronically report the position of the switches to the railroad's central dispatching office or the crew of an approaching train—and a Track Integrity Warning System (TIWS)—a system that electronically reports to the railroad's central dispatching office or the crew of an approaching train if there are any breaks in the rail that might lead to derailments. FRA believes both of these technologies help to reduce risk in non-signaled territory and are forward-compatible for use with existing and new PTC systems. To be forward-compatible, not to be confused with the similar concept of extensibility, a system must be able to gracefully provide input intended for use in later system versions. The introduction of a forward-compatible technology implies that older devices can partly

understand and provide data generated or used by new devices or systems. The concept can be applied to electrical interfaces, telecommunication signals, data communication protocols, file formats, and computer programming languages. A standard supports forward-compatibility if older product versions can receive, read, view, play, execute, or transmit data to the new standard. In the case of wayside devices, they are said to be forward compatible if they can appropriately communicate and interact with a PTC system when later installed. A wayside device might serve the function of providing information only, or of providing information and accepting commands from a new system.

In addition to scheduling the installation of the ETMS I configuration as capital funding became available, BNSF voluntarily undertook the design and testing of complementary versions of ETMS that would support BNSF operations on more complex track configurations, at higher allowable train speeds, and with additional types of rail traffic. Meanwhile, CSXT was in the process of redesigning and relocating the test bed for its Communications Based Train Management (CBTM) system, which it has tested for several years, and UP and NS were working on similar systems using vital onboard processing.

As congressional consideration of legislation that resulted in the RSIA08 commenced, all four major railroads had settled on the core technology developed for them by Wabtec Railway Electronics ("Wabtec"). As the legislation progressed, the railroads and Wabtec worked toward greater commonality in the basic functioning of the onboard system with a view toward interoperability. Accordingly, ETMS is now a generic architectural description of one type of PTC system. Examples of ETMS include the non-vital PTC systems of BNSF's ETMS I and ETMS II, CSXT's CBTM, UP's Vital Train Management System (VTMS), and NS's Optimized Train Control (OTC). Further work is being undertaken by BNSF to advance the capability of ETMS by integrating Amtrak operations (ETMS III).

While the freight railroads' efforts for developing and installing PTC systems progressed over a relatively long period of time, starting with demonstrations of ATCS and ARES in the late 1980s and culminating in the initial ETMS Product Safety Plan approval in December of 2006, Amtrak demonstrated its ability to turn on revenue-quality PTC systems on its own railroad in support of high speed rail. Beginning in the early 1990s, Amtrak developed plans for enhanced high speed service on the Northeast Corridor (NEC), which included electrification and other improvements between New Haven and Boston and introduction of the Acela trainsets as the premium service from Washington to New York and New York to Boston. In connection with these improvements, which support train speeds up to 150 mph, Amtrak undertook to install the Advanced Civil Speed Enforcement System (ACSES) as a supplement to existing cab signals and automatic train control (speed control). Together, these systems deliver PTC core functionalities. In support of this effort, FRA issued an order for the installation of the

system, which required all passenger and freight operators in the New Haven-Boston segment to equip their locomotives with ACSES. See 63 FR 39343 (July 22, 1998). ACSES was installed between 2000 and 2002, and has functioned successfully between New Haven and Boston, and on selected high speed segments between Washington and New York for a number of years.

Amtrak voluntarily began development of an architecturally different PTC system, the Incremental Train Control System (ITCS), for installation on its Michigan Line. Amtrak developed and installed ITCS under waivers from specific sections of 49 CFR part 236, subparts A through G, granted by FRA. ITCS was applied to tenant NS locomotives as well as Amtrak locomotives traversing the route. Highway-rail grade crossings on the route were fitted with ITCS units to pre-start the warning systems for high-speed trains and to monitor crossing warning system health in real time. The ITCS was tested extensively in the field for safety and reliability, and it was placed in revenue service in 2001. As experience was gained, FRA authorized increases in speed to 95 mph; and FRA is presently awaiting final results of an independent assessment of verification and validation for the system with a view toward authorizing operations at the design speed of 110 mph.

Despite these successes, the widespread deployment of these various train control systems, particularly on the general freight system, remained very much constrained by prohibitive capital costs. While the railroads were committed to installing these new systems to enhance the safety afforded to the public and their employees, the railroad's actual widespread implementation remained forestalled due to an inability to generate sufficient funding for these new projects in excess of the capital expenditures necessary to cover the ongoing operating and maintenance costs. Accordingly, the railroads continued to plan very slow deployments of PTC system technologies.

On May 1, 2007, the House of Representatives introduced H.R. 2095, which would, among other things, mandate the implementation and use of PTC systems. The bill passed the House on October 17, 2007. The bill was then amended and passed by the Senate on August 1, 2008. While the bill was awaiting final passage, the FRA Administrator testified before Congress that "FRA is a strong supporter of PTC technology and is an active advocate for its continued development and deployment." Senate Commerce Committee Briefing on Metrolink Accident, 110th Cong. (Sept. 23, 2008.

On September 24, 2008, the House concurred with the Senate amendment and added another amendment pursuant to H. Res. 1492. When considering the House's amendment, various Senators made statements referencing certain train accidents that were believed to be PTC-preventable. For instance, Senator Lautenberg (NJ) took notice of the collision at Graniteville, South Carolina in 2005, and Senators Lautenberg, Hutchinson (TX), Boxer (CA), Levin (MI), and Carper (DE) took notice of an accident at

Chatsworth, California, on September 12, 2008. According to Senator Levin, federal investigators have said that a collision warning system could have prevented that crash and the subject legislation would require that new technology to prevent crashes be installed in high risk tracks. Senators Carper and Boxer made similar statements, indicating that PTC systems are designed to prevent train derailments and collisions, like the one in Chatsworth. 154 Cong. Rec. S10283-S10290 (2008). Ultimately, on October 1, 2008, the Senate concurred with the House amendment.

The Graniteville accident referenced by Senator Lautenberg was an early morning collision between two NS trains in non-signaled (dark) territory near the Avondale Mills Textile plant. One of the trains—which was transporting chlorine gas, sodium hydroxide, and cresol on the main track—approached an improperly lined hand-operated switch. As the train diverged through the switch, it ran onto the siding track where it collided with a parked train. Various tank cars ruptured, releasing at least 90 tons of chlorine gas. Nine people died due to chlorine inhalation and at least 250 people were treated for chlorine exposure. In addition, 5,400 residents within a mile of the crash site were forced to evacuate for nearly two weeks while hazardous materials (hazmat) teams and cleanup crews decontaminated the area.

The Chatsworth train collision occurred on the afternoon of September 12, 2008, when a Union Pacific freight train and a Metrolink commuter train collided head-on on a single main track equipped with a Traffic Control System (TCS) in the Chatsworth district of Los Angeles, California. Although NTSB has not yet released its final report, evidence summarized at the NTSB's public hearing suggested that the Metrolink passenger train was operated past a signal displaying a stop indication and entered a section of single track where the opposing UP freight train was operating on a signal indication permitting it to proceed over a switch and into a siding (after which the switch would have been lined for the Metrolink train to proceed). As a consequence of the accident, 25 people died and over 130 more were seriously injured.

Prior to the accidents in Graniteville and Chatsworth, the railroads' slow incremental deployment of PTC technologies—while not uniformly agreed upon by the railroads, FRA, and NTSB—was generally deemed acceptable by them in view of the tremendous costs involved. Partially as a consequence and severity of these very public accidents, coupled with a series of other less publicized accidents, Congress passed the Rail Safety Improvement Act of 2008 into law on October 16, 2008, marking a public policy decision that, despite the implementation costs, railroad employee and general public safety warranted mandatory and accelerated installation and operation of PTC systems.

As immediately relevant to this rulemaking, RSIA08 requires the installation and operation of PTC systems on all main lines, meaning all intercity and commuter lines—with limited exceptions entrusted to FRA—and on freight-only lines when they are part of a Class I railroad system, carrying at least 5 million gross tons of freight annually, and

carrying any amount of poison- or toxic-by-inhalation (PIH or TIH) materials. While the statute vests certain responsibilities with the Secretary of the U.S. Department of Transportation, the Secretary has since delegated those responsibilities to the FRA Administrator. See 49 CFR 1.49; [FR]; see also 49 U.S.C. § 103(g).

In RSIA08, Congress established very aggressive dates for PTC system build-out completion. Each subject railroad is required to submit to FRA by April 16, 2010, an implementation plan indicating where and how it intends to install PTC systems by December 31, 2015. As a result of this accelerated PTC system deployment schedule, railroads must immediately engage in a massive reprogramming of capital funds.

In light of the timetable instituted by Congress and to better support railroads with their installation while maintaining safety, FRA decided that it is appropriate for mandatory PTC systems to be reviewed by FRA differently than the regulatory approval process provided under subpart H. FRA believes that it is important to develop a process more suited specifically for PTC systems that would better facilitate railroad reuse of safety documentation and simplify the process of showing that the installation of the PTC system did not degrade safety. FRA also believes that subpart H does not clearly address the statutory mandates and that such lack of clarity would complicate railroad efforts to comply with the new statutory requirements.

FRA is hereby proposing to amend part 236 by modifying existing subpart H and adding a new subpart I. FRA is issuing this proposed rule to provide regulatory guidance and performance standards for the development, testing, implementation, and use of Positive Train Control (PTC) systems for railroads mandated by the Railroad Safety Improvement Act of 2008 § 104, Pub. L. 110-432, 122 Stat. 4854, (Oct. 16, 2008) (codified at 9 U.S.C. § 20157). The proposed rule establishes requirements for PTC system standard design and functionality, the associated submissions for FRA PTC system approval and certification, requirements for training, and required risk-based criteria. The RSIA08 mandates that widespread implementation of PTC across a major portion of the U.S. rail industry be accomplished by December 31, 2015. This proposed rule is intended to provide the necessary federal oversight, guidance, and assistance toward successful completion of that congressional requirement. This proposed rule also necessitates or results in some minimal revision or amendment to parts 229, 234 and 235, as well as previously existing subparts A through H of part 236.

2. INDICATE HOW, BY WHOM, AND FOR WHAT PURPOSE THE INFORMATION IS TO BE USED. EXCEPT FOR A NEW COLLECTION, INDICATE THE ACTUAL USE THE AGENCY HAS MADE OF THE INFORMATION RECEIVED FROM THE CURRENT COLLECTION.

This is a revision to a currently approved collection of information. The proposed rule adds new Subpart I and accompanying information collection requirements to 49 CFR

236. The revised rule implements a requirement of the Rail Safety Improvement Act of 2008 (RSIA08) that certain passenger and freight railroads install positive train control (PTC) systems. The proposed rule includes required functionalities of the technology and the means by which it would be certified. The proposed rule also describes the contents of PTC implementation plans required by the statute and contains the proposed process for the submission of those plans for review and approval by FRA.

FRA uses the information collected under Subpart H and the new information to be collected under Subpart I for compliance purposes. FRA uses and will use the information collected to ensure that new or novel signal and train control technologies, essentially electronic or processor-based systems, meet the proposed "performance standard" and work as intended in the U.S. rail environment. These new signal and train control technologies are known as "Positive Train Control" (PTC). The proposed "performance standard" provides that any new signal and train control system would meet or exceed the safety performance of the existing system. In other words, new "PTC" products must not degrade railroad safety. Before introduction into revenue service, these new systems – as well as subsystems and components thereof – must be carefully evaluated by FRA to verify that they meet the proposed performance standard. FRA aims to use the information collected to facilitate safety improvement through accelerated introduction of new technology. FRA also plans to carefully review the information collected to ensure that new Positive Train Control (PTC) systems are compatible nationwide.

Railroads are required to furnish FRA with a variety of information regarding "Positive Train Control" technology. Under Subpart A of Part 236, railroads are required to adopt a software management control plan to assure that software used in processor-based signal and train control equipment placed in service is the version intended by the railroad to be in service at each location. FRA uses this information as an audit trail to determine if the correct software is installed at the correct locations for all processor-based signal and train control systems on a railroad. FRA believes that these plans will enhance safety and provide other benefits to the railroad as well.

Under Subpart H, railroads are also required to develop a Railroad Safety Program Plan (RSPP) that serves as the railroad's principal safety document for all safety-critical products. The RSPP must establish the minimum Product Safety Plan (PSP) requirements that will govern the development and implementation of all products subject to this subpart. FRA requires railroads to submit their initial RSPPs for FRA review and approval prior to implementation of safety-critical products. FRA intends the RSPP to serve as a guide, as well as to be a formal step-by-step process, which covers the following: identification of all safety requirements that govern operation of a system; evaluation of the total system to identify known or potential safety hazards that may arise over the life cycle of the system; identification of all safety issues during the design phase of the process; elimination or reduction of risk posed by the hazards identified; resolution

of safety issues presented; development of a process to track progress; and development of a program of testing and analysis to demonstrate that safety requirements are met. FRA reviews RSPPs and RSPP amendments, which can be made at any time and which involve the same approval procedures that apply with the initial approval of the RSPP, to ensure that all the necessary information is provided and that the proposed new or modified PTC system meets or exceeds the overall safety provided by the old system.

Also, under Subpart H, railroads must also submit a Product Safety Plan (PSP). Each PSP must include a complete description of the product and must include system specifications that describe the overall product and identify each component and its physical relationship in the system. FRA examines each PSP to fully understand how various parts relate to one another within a system. In particular, FRA reviews safety-critical functions to determine whether they are designed on the fail-safe principle. Each PSP must also include a description of the operation where the product will be used. FRA uses this information to determine the type of operation on which the product will be used, and the suitability of the product for that type of operation. Additionally, each PSP must include a concepts operations document containing a description of the product functional characteristics and how various components within the system are controlled. FRA uses this information to review the product for completeness of design for safety by comparing the functionalities with those contained in standards for existing signal and train control systems. Furthermore, each PSP must include a safety requirements document that identifies and describes each safety-critical function of the product. FRA uses this information to determine that appropriate safety concepts have been incorporated into the proposed product. Each PSP must also include a hazard log. This log consists of a comprehensive description of all hazards to be addressed during the life cycle of the product, including the maximum threshold for each hazard. The hazard log addresses safety-relevant hazards, or incidents/failures which affect the safety and risk assumptions of the product. FRA uses this information to ensure that all possible safety-relevant hazards which would have a negative effect on the safety of the product are identified and that mitigating measures are taken to offset the negative effects of these hazards.

Each PSP must also address safety verification and validation procedures, and must include the results of the safety assessment process. FRA believes verification and validation for safety are vital parts of the development of products. The PSP needs to identify the test planning at each stage of development and the levels of rigor applied during the testing process. FRA uses this information to assure the adequacy and coverage of the tests are appropriate. FRA expects the safety assessment process to be clearly stated. FRA examines the safety assessment information for thoroughness, according to the complexity of the product. Furthermore, each railroad in its PSP must include a training, qualification, and designation program for workers who perform inspection, testing, and maintenance tasks involving the product. Overall, FRA uses the information provided in the PSP and PSP amendments to assure that the product is safe;

is properly installed, maintained, and tested by qualified personnel; and is functioning throughout the life cycle of the product as intended.

Railroads are also required to retain records. Railroads need to maintain documentation to demonstrate that the product PSP meets the safety requirements of the railroad's RSPP and applicable standards described in this Subpart, including the risk assessment. The risk assessment must contain all initial assumptions for the system that are listed in paragraph (i) of Appendix B, Risk Assessment Criteria. Railroads are required to develop and keep for the life cycle of the product an Operations Maintenance Manual (as specified in § 236.923). Railroads are also required to maintain records which designate persons who are qualified under the railroad's training program to perform safety-related inspection, testing, maintenance, repairing, dispatching, or operating tasks regarding the safety-critical product. After the product is placed in service, railroads are required to maintain a database of safety-relevant hazards on the product which arise or are discovered. All documents and records must be made available for FRA inspection and copying during normal business hours. FRA uses the information provided by these records to fully ensure that processor-based signal and train control systems are safe, and are properly installed, maintained, inspected, and tested by qualified personnel who have complete and current information concerning the product.

Section 236.1005 of **new Subpart I** provides flexibility to railroads by permitting requests for temporary rerouting. FRA will review temporary rerouting requests of trains equipped with a PTC system (as required by this Part) onto a track not equipped with a PTC system and a train not equipped with a PTC system onto a track with a PTC system – whether due to emergencies (for periods of more than 14 days) or planned maintenance (requests must be made 10 days in advance) – to understand the context and details of the rerouting and to determine whether the requested rerouting is necessary and in the interest of public safety. For emergency requests, FRA will review the information collected to ensure that a higher level of safety is maintained during the period of the rerouting. For rerouting due to planned maintenance, FRA will review requests to determine whether a railroad should reroute at all. Whether the request is for emergency or planned maintenance purposes, FRA will review the information collected to ensure that the track segments upon which the train will be rerouted have an absolute block established in advance of each rerouted train movement and that each rerouted train movement does not exceed 59 miles per hour for passenger and 49 miles per hour for freight trains in order to protect both railroad workers and the public at large.

Section 236.1006 details the requirements for equipping locomotives operating in PTC territory. It also provides that movements in excess of 20 miles are authorized until December 31, 2020, subject to restrictions, including the Class II or Class III railroad must report to FRA progress in equipping the necessary number of locomotives with PTC. FRA will review these reports by Class II/Class III railroads to monitor their

progress in complying with mandatory statutory deadlines for equipping their locomotives with Positive Train Control.

Section 236.1007 requires a PTC railroad that conducts freight or passenger operations at more than 125 miles per hour to have an approved PTC Safety Plan (PTCSP) accompanied by an "HSR-125" document. This speed is the maximum speed for Class 7 track under § 236.307. At these higher speeds, the consequences of a derailment or collision are significantly greater than at lower speeds due to the involved vehicle's kinetic energy. FRA will review the "HSR-125" document to ensure the additional safety analysis contained in this document provides suitable evidence to the agency that the PTC system can support a level of safety equivalent to, or better than, the best level of safety of comparable rail service in the United States or a foreign country (where railroads request to use foreign service data in their "HSR-125" document) over the five year period preceding the submission of the PTCSP. FRA will also review and evaluate the "HSR-125" document to determine that it includes a method to ensure that these high speed lines have the capability to detect incursions, including such hazards as large motor vehicles falling on the track structure from highway bridges, from outside the right of way, as well as the capability of providing warning to trains. For a PTC railroad that conducts freight or passenger operations at more than 150 miles per hour, FRA will review the "HSR-125" document to confirm that it is part of an overall system safety plan approved by the Administrator and that a Rule of Part Applicability governs such extremely high speed operations.

Section 236.1009 spells out PTC procedural requirements and mandates each Class I carrier and each entity providing regularly scheduled intercity or commuter rail passenger transportation to develop and submit by April 16, 2010, a plan for implementing a PTC system by December 31, 2015. PTCIP content requirements are fully delineated in § 236.1011. FRA will review these PTC Implementation Plans (PTCIPs) to see that these contents are included in each PTCIP and to ensure the implementation includes design, testing, potential Verification and Validation, installation, and operation over the PTC system's life cycle. PTCIPs are integral part of the FRA PTC System Certification process, along with a Type Approval number and PTC Safety Plan (PTCSP). FRA will examine each PTCIP to confirm that it fully describes the technology that will be employed, how the PTC railroad intends to comply with § 236.1009, how the PTC system will provide for interoperability of the system between host and all tenant railroads on the lines required to be equipped with PTC systems under this subpart, and how all the other requirements stipulated in § 236.1011 will be met.

Section 236.1013 establishes that, for a PTC system to obtain a Type Approval from FRA, a PTC Development Plan (PTCDP) must be filed in accordance with § 236.1009. FRA will review the PTCIP and PTCDP contemporaneously in order predetermine and share with the railroad an appropriate course of action to adequately address the various issues specific to the railroad and related to drafting a successful PTC Safety Plan

(PTCSP). The PTCDP is the core document that provides the FRA Associate Administrator for Safety sufficient information to determine whether the PTC system proposed for installation by the railroad could meet the statutory requirements for PTC systems prescribed in the RSIA of 2008 and the regulatory requirements under new subpart I. FRA will review each PTCDP to ascertain that all requirements specified in this section are included. Among them are the following: (1) a complete description of the PTC system, including a list of all PTC system components and their physical relationships in the subsystem or system; (2) a description of the railroad operation or categories of operations on which the PTC system is designed to be used, including train movement density (passenger, freight), operating speeds, track characteristics, and railroad operating rules; (3) an operational concepts document, including a list with complete descriptions of all functions which the PTC system will perform to enhance or preserve safety; (4) a document describing the manner in which the PTC architecture satisfies safety requirements; (5) a description of the safety assurance concepts that are to be used for system development, including an explanation of the design principles and assumptions; (6) a preliminary human factors analysis, including a complete description of all human-machine interfaces and the impact of interoperability requirements on the same; (7) an analysis of the applicability to the PTC system of the requirements of subparts A-G of this part that may no longer apply or are satisfied by the PTC system using an alternative method, and a complete explanation of the manner in which those requirements are otherwise fulfilled; (8) a description of the necessary security measures for the system; (9) a description of target safety levels (e.g., Mean Time To Hazardous Event (MTTHE) for major subsystems as defined in subpart H), including requirements for system availability and a description of all backup methods of operation and any critical assumptions associated with the target levels; (10) a complete description of how the PTC system will enforce authorities and signal indications; (11) a description of the deviation required under § 236.1029(c), if applicable; and (12) a complete description of how the PTC system will appropriate and timely enforce all integrated hazard detectors in accordance with § 236.1005(c)(3), if applicable.

Section 236.1015 sets forth PTC Safety Plan (PTCSP) content requirements and what each railroad must do to receive a PTC System Certification. FRA will carefully scrutinize each PTCSP to assure that the as-built PTC system fulfills the required statutory PTC functions and is in compliance with the requirements of this subpart. Each PTCSP must address railroad-specific implementation issues associated with the PTC system identified by the submitted Type Approval. Each PTCSP must include a risk assessment. FRA will use this information as a basis to confirm compliance with the appropriate performance standard. Also, FRA will also review the risk assessment to see that it provides evidence that risks associated with the product have been carefully considered and that steps have been taken to eliminate or mitigate them. Additionally, each PTCSP must address safety Verification and Validation procedures as defined under this Part. FRA believes that Verification and Validation for safety are vital parts of the PTC development process. FRA will use this information to ensure the adequacy and

coverage of the tests are appropriate. FRA will only issue a PTC System Certification if the PTCSP receives agency approval. Receipt of a PTC System Certification affirms that the PTC system has been reviewed and approved by FRA in accordance with this part and meets all of its requirements.

Section 236.1017 requires that each PTCSP must be supported by an independent third party assessment when the Associate Administrator (for Safety) concludes that it is necessary based upon criteria spelled out in § 236.913(g)(2)(vii). If an independent assessment is required, the assessment may apply to the entire system or a designated portion of the system. FRA will review these third party audits to verify that the minimum requirements outlined in Appendix F to this Part are met.

Section 236.1019 pertains exclusively to exceptions from the rule that trackage over which scheduled intercity and commuter passenger service is provided is considered main line track requiring installation of a PTC system. FRA proposes to consider requests for designation of track over which operations are conducted as "other than main line track" for passenger and commuter railroads, or freight railroads operating jointly with passenger or commuter railroads. Main line track addendums (MTEAs) may be filed as part of the railroad's PTCIP. FRA will review these MTEAs to ascertain that each one clearly identifies and defines physical boundaries, use, and characterization of the trackage for which exclusion is requested and that a compelling justification, in accordance with paragraphs (b) or (c) of this section, is provided for each particular segment of track identified.

Section 236.1021 references discontinuances, material modifications, and amendments. In this section, FRA requires agency approval prior to certain PTC system changes. Amendments can add, remove, or update parts of the railroad's PTCIP, PTCDP, or PTCSP. FRA will review these requests for amendment (RFAs) to ensure that all necessary information is provided to the agency to determine whether agency approval should be granted, including the following: (i) the information listed in § 235.10 of this chapter and any additional information to evaluate the application; (ii) the proposed modifications; (iii) the reasons for each modification; (iv) the changes to the PTCIP, PTCDP, or PTCSP, as applicable; (v) each modification's effect on PTC system safety; (vi) an approximate timetable for filing of the PTCDP, PTCSP, or both, if the amendment pertains to a PTCIP; and (vii) an explanation of whether each change to the PTCSP is planned or unplanned. In making an approval determination, FRA will consider all impacts on public safety prior to approval or disapproval of any request for discontinuance, modification, or amendment.

Section 236.1023 requires PTC product vendors and railroads to notify FRA when any PTC system, subsystem, component, product, or process fails, malfunctions, or otherwise experiences a defect that decreases or eliminates any safety functionality. FRA will review these notifications to make certain that the cause of such failures, malfunctions, or

defects are identified and that corrective actions are taken without undue delay. Until repairs are made, railroads and vendors will be required to take appropriate measures to assure the safety of train movements, roadway workers, and on-track equipment.

Section 236.1029 requires communication of a report to a designated railroad officer when a PTC on-board device on a lead locomotive that is operating in or is to be operated within a PTC system fails or is otherwise cut-out. These reports will be used by railroads to ensure necessary safety measures are taken, in particular that the necessary alternative protection of absolute block is established. FRA will monitor these reports to verify that appropriate records are kept relating to the occurrence of en route failures.

Section 236.1035 stipulates required information that railroads must provide to FRA before any field testing of an uncertified PTC system, or a product of an uncertified PTC system, or any regression testing of a certified PTC system is conducted. FRA will review these documents/plans to make informed decisions regarding the safety of testing operations. FRA will carefully scrutinize the data submitted and, based on the results of its review, may impose special conditions on the execution of the testing up to and including the appointment of an FRA test monitor to provide additional oversight to assure the safety of rail operations.

Section 236.1037 specifies records retention requirements. Each railroad with a PTC system required to be installed under this subpart must maintain at a designated office on the railroad: (1) a current copy of each FRA approved Type Approval, if any, PTCDP, and PTCSP that it holds; (2) adequate documentation to demonstrate that the PTCSP and PTCDP meet the safety requirements of this subpart, including the risk assessment; (3) an Operations and Maintenance Manual, pursuant to § 236.1039; and (4) training and testing records pursuant to § 236.1043(b). FRA will review these records for compliance with a performance standard and with the requirements of this new Subpart.

Section 236.1039 requires railroads to catalog and maintain all documents as specified in the PTCDP and PTCSP for the installation, maintenance, repair, modification, inspection, and testing of the PTC system and have them in one Operations and Maintenance Manual. This manual will serve a central reference source and will be used by railroad personnel to safely and smoothly run, maintain, repair, modify, test, and inspect their railroad's PTC system. It will also be used for purposes of inspection by FRA and FRA-certified State inspectors.

Section 236.1041 requires railroads and contractors to establish and implement training and qualifications programs for PTC systems subject to this subpart. These programs must meet the minimum requirements spelled out in the PTCDP and PCTSP in §§ 236.1039-236.1045, as appropriate, for the following personnel: (1) Persons whose

duties include installing, maintaining, repairing, modifying, inspecting, and testing safety-critical elements of the railroad's PTC systems, including central office, wayside, or onboard subsystems; (2) Persons who dispatch train operations (issue or communicate any mandatory directive that is executed or enforced, or is intended to be executed or enforced, by a train control system subject to this subpart); (3) Persons who operate trains or serve as a train or engine crew member subject to instruction and testing under part 217 of this chapter, on a train operating in territory where a train control system subject to this subpart is in use; (4) Roadway workers whose duties require them to know and understand how a train control system affects their safety and how to avoid interfering with its proper functioning; and (5) The direct supervisors of persons listed in paragraphs (a)(1) through (a)(4) of this section. FRA will monitor these programs to ensure that all railroad PTC railroad personnel are properly trained to keep their PTC system running safely and smoothly. FRA seeks to prevent under-trained and unqualified people from performing safety critical functions related to a PTC system. The railroad industry's workforce generally does not have thorough knowledge of the operation of PTC equipment and appropriate practices for its operation and maintenance. FRA believes employee training and qualifications on how to properly and safely perform assigned duties are crucial to maintaining safe railroad equipment and a safe rail work environment.

Section 236.1043 requires regular and periodic evaluations of railroads/contractors PTC training programs and retention of training records. Railroads/contractors will use this information as an audit to determine if their PTC training program materials and curriculum are effective and are imparting the specific knowledge, skills, and abilities to accomplish the stated goals of the training program. Railroads/contractors will also use this information to determine if the stated goals of the training program reflect the correct and current products and operations. FRA will review training records to verify that required personnel are properly trained and that new designations of qualified personnel are recorded, as appropriate.

Finally, section 236.1045, section 236.1047, and section 236.1049 set forth the training requirements for office personnel, locomotive engineers and other operating personnel, and roadway workers, respectively. Again, FRA seeks to prevent under-trained and unqualified people from performing safety critical functions related to a PTC system and to ensure that all railroad PTC railroad personnel are properly trained to safely perform assigned duties that are crucial to maintaining safe PTC systems and a safe rail work environment.

In sum, FRA uses the information collected under Subpart H and will use the information collected under new Subpart I to ensure that new or novel Positive Train Control technologies are – at a minimum – as safe as the systems they would replace. This collection of information is a vital means that enables FRA to accomplish its main mission of promoting and enhancing safe rail transportation in this country.

3. DESCRIBE WHETHER, AND TO WHAT EXTENT, THE COLLECTION OF INFORMATION INVOLVES THE USE OF AUTOMATED, ELECTRONIC, MECHANICAL, OR OTHER TECHNOLOGICAL COLLECTION TECHNIQUES OR OTHER FORMS OF INFORMATION TECHNOLOGY, E.G. PERMITTING ELECTRONIC SUBMISSION OF RESPONSES, AND THE BASIS FOR THE DECISION FOR ADOPTING THIS MEANS OF COLLECTION. ALSO DESCRIBE ANY CONSIDERATION OF USING INFORMATION TECHNOLOGY TO REDUCE BURDEN.

In keeping with past agency practice and the requirements of the Government Paperwork Elimination Act (GPEA), FRA highly encourages and strongly supports the use of advanced information technology, wherever possible, to reduce burden. In Subpart H of this proposed rule, FRA provides for electronic recordkeeping, or automated tracking systems. Specifically, the results of tests made in compliance with §§ 236.102-236.109; 236.376-236.387; 236.576-236.577; 236.586-236.589; and the records required to be retained under § 236.917(a) may be kept electronically, subject to approval by FRA. Also, the training records required under § 236.923-236.929 may be kept electronically. Furthermore, the hazard log or database of all safety-relevant hazards affecting positive train control/processor-based signal and train control systems may be kept electronically. FRA believes that electronic records are not only convenient but also help to reduce the time and cost burdens experienced by railroads in gathering necessary information.

Also, because railroads have expressed concern that 15 days is not enough time to report an inconsistency of safety-relevant hazards – exceeding the threshold set forth in the Product Safety Plan – to FRA, especially when traditional postal service is used to deliver the report, FRA has decided to allow railroads to fax or e-mail the report required under §236.917(b).

Electronic recordkeeping is also permitted under **new Subpart I** under the same terms as in Subpart H. Under § 236.1011, railroads are permitted to submit much of the PTCIP information electronically. In particular, FRA believes that the preferred, least costly, and least error-prone method to comply with § 236.1011 is for railroads to submit an electronic geographic digital system map containing the segment attribute information in shape file format, which is a data format structure compatible with most Geographic Information System (GIS) software packages. Using a GIS provides an efficient means for organizing basic transportation-related geographic data to facilitate the input, analysis, and display of transport networks. Also, the report required under § 236.1029(b)(1) may be made electronically. Further, the records required to be retained under § 236.1037(a) and§ 236.1037(c), which pertain to the results of inspections and tests specified in each railroad's PTCSP and PTCDP, may be kept electronically, subject to approval by FRA. Finally, the training records required under § 236.1043-236.1049 may be kept electronically. Thus, approximately nine (9) percent of responses, accounting for approximately 25 percent of the estimated burden, may be kept electronically under this

proposed rule.

4. DESCRIBE EFFORTS TO IDENTIFY DUPLICATION. SHOW SPECIFICALLY WHY ANY SIMILAR INFORMATION ALREADY AVAILABLE CANNOT BE USED OR MODIFIED FOR USE FOR THE PURPOSES DESCRIBED IN ITEM 2 ABOVE.

The information collection requirements concern the introduction of the latest signal and train control systems in this country. To our knowledge, these information collection requirements are not duplicated elsewhere.

Similar data are not available from any other source.

5. IF THE COLLECTION OF INFORMATION IMPACTS SMALL BUSINESSES OR OTHER SMALL ENTITIES (ITEM 5 OF OMB FORM 83-I), DESCRIBE ANY METHODS USED TO MINIMIZE BURDEN.

"Small entity" is defined in 5 U.S.C. § 601. Section 601(3) defines a "small entity" as having the same meaning as "small business concern" under § 3 of the Small Business Act. This includes any small business concern that is independently owned and operated, and is not dominant in its field of operation. Section 601(4) includes not-for-profit enterprises that are independently owned and operated, and are not dominant in their field of operations within the definition of "small entities." Additionally, § 601(5) defines as "small entities" governments of cities, counties, towns, townships, villages, school districts, or special districts with populations less than 50,000.

The U.S. Small Business Administration (SBA) stipulates "size standards" for small entities. It provides that the largest a for-profit railroad business firm may be (and still classify as a "small entity") is 1,500 employees for "Line-Haul Operating" railroads, and 500 employees for "Short-Line Operating" railroads. See "Table of Size Standards," U.S. Small Business Administration, January 31, 1996, 13 CFR Part 121; see also NAICS Codes 482111 and 482112.

SBA size standards may be altered by Federal agencies in consultation with SBA, and in conjunction with public comment. Pursuant to the authority provided to it by SBA, FRA has published a final policy, which formally establishes small entities as railroads that meet the line haulage revenue requirements of a Class III railroad. See 68 FR 24,891 (May 9, 2003). Currently, the revenue requirements are $20 million or less in annual operating revenue, adjusted annually for inflation. The $20 million limit (adjusted annually for inflation) is based on the Surface Transportation Board's threshold of a Class III railroad carrier, which is adjusted by applying the railroad revenue deflator adjustment. See also 49 CFR Part 1201. The same dollar limit on revenues is established

to determine whether a railroad shipper or contractor is a small entity. FRA proposes to use this definition for this rulemaking.

The Initial Regulatory Flexibility Analysis' (IRFA's) "universe" of considered entities generally includes only those small entities that can reasonably be expected to be directly regulated by the proposed action. One type of small entity is potentially affected by this proposed rule: railroads. The level of impact on small railroads will vary from railroad to railroad. Class III railroads will be impacted for one or more of the following reasons: (1) they operate on Class I railroad lines that carry PIH materials and are required to have PTC, in which case they would need to equip the portion of their locomotive fleet that operates on such lines; (2) they operate on Amtrak or commuter rail lines, including freight railroad lines that host such service; (3) they host regularly scheduled intercity or commuter rail transportation; or (4) they have at-grade railroad crossings over lines required by the Railroad Safety Improvement Act of 2008 (RSIA08) to have PTC.

The RSIA requires that a Positive Train Control (PTC) system be installed on certain main lines of each railroad required to file a PTC Implementation Plan. According to the statute, a main line is – with certain exceptions – a Class I railroad track over which 5,000,000 or more gross tons of railroad traffic is transported annually. By referencing Class I railroads and not referencing any other type of railroad, FRA believes that Congress did not intend, as a general matter, to have smaller freight railroads incur the tremendous costs involved in PTC system implementation and operation unless they own track over which is provided regularly scheduled intercity or commuter rail passenger transportation.

Class III railroads that host intercity or commuter rail service will need to file implementation plans, whether or not they directly procure or manage installation of the PTC system. FRA believes that, although the implementation plan must be jointly filed by the small host railroad and passenger tenant railroad, the cost of these plans will be borne by the passenger railroads. FRA believes that only one (1) small entity is likely to have PTC installed on its lines. The implementation plan is likely to be an extension of the passenger railroad's plan, and the marginal cost will be the cost of tailoring the plan to the host railroad, which will be borne by the passenger railroad, and maintaining copies of the plan at the host railroad, which FRA estimates to be approximately $1,000 per year.

FRA is unaware of any significant alternatives that would meet the intent of RSIA08 and that would minimize the economic impact on small entities. FRA is exercising its discretion to provide the greatest flexibility for small entities available under RSIA08 by proposing to allow operations of unequipped trains operated by small entities on the main lines of Class I railroads, and in defining main track on passenger railroads to avoid imposing undue burdens on small entities. The definition of passenger main track was adopted based on PTC Working Group recommendations that were backed strongly by

representatives of small railroads.

The process by which this proposed rule was developed provided outreach to small entities. As noted in the answer to question number eight (8) below, this notice was developed in consultation with industry representatives via the Railroad Safety Advisory Committee (RSAC), which includes small railroad representatives. From January to April 2009, FRA met with the entire PTC Working Group five times over the course of twelve days. This PTC Working Group established a task force to focus on issues specific to short line and regional railroads. The discussions yielded many insights and this proposed rule takes into account the concerns expressed by small railroads during the deliberations.

FRA believes that this proposed rule's new Subpart I requirements and accompanying burden will primarily affect seven (7) Class I railroads and 23 passenger/commuter railroads, only one of which is considered a small entity. FRA has taken steps to reduce burden, where possible. For example, under the procedural requirements of § 236.1009, the proposed Type Approval process provides certain benefits to respondents. If a railroad submits a PTC Development Plan (PTCDP) describing a PTC system, and the PTC system receives a Type Approval, then other railroads intending to use the same PTC system without variances may, in accordance with proposed paragraph (b)(1), simply rely on the Type Approval number without having to file a separate PTCDP. While the railroad filing the PTCDP must expend resources to develop and submit the PTCDP, all other railroads using the same PTC system would not. This would not only provide significant cost and time savings for a number of railroads, but also will remove a significant level of redundancy from the approval process that is currently inherent in subpart H.

In sum, FRA believes that the information collection requirements and corresponding burden associated with this proposed rule will not have a significant impact on a substantial number of small entities.

6. DESCRIBE THE CONSEQUENCE TO FEDERAL PROGRAM OR POLICY ACTIVITIES IF THE COLLECTION IS NOT CONDUCTED OR IS CONDUCTED LESS FREQUENTLY, AS WELL AS ANY TECHNICAL OR LEGAL OBSTACLES TO REDUCING BURDEN.

If the information required under Subpart H and new Subpart I were not collected, or collected less frequently, FRA believes its ability to maintain rail safety in the United States might be seriously jeopardized. New, more cost-effective (processor-based) signal and train control systems, which can increase current safety levels, are now emerging. These new systems can also improve train travel times and make rail transportation more attractive for greater numbers of people, as well as reduce the time required to ship goods. In order to fulfill its primary mission as well as the statutory mandate under the

Railroad Safety Improvement Act (RSIA) of 2008, FRA needs to be able to make accurate and informed determinations that proposed "Positive Train Control (PTC)" systems meet a crucial high-level performance standard before carriers design and deploy these systems. It is essential, therefore, that FRA obtain extensive documentation of the safety of "PTC" systems, as well as subsystems and components thereof, before any "PTC" system is actually placed in revenue service in order to confirm that rail carriers meet this high-level performance standard (no loss of safety). FRA demands that such systems provide for positive train separation and be compatible nationwide. The required information, particularly the risk assessment data, can be used by FRA as a basis to measure and identify the likelihood of a hazardous event and the potential for the system to function as intended, as well as to confirm compliance with the performance standard.

If FRA were unable to collect the required information or to collect it less frequently than stipulated, it would not meet the RSIA mandate and there might be more incidents of train-to-train collisions like the ones in Graniteville, South Carolina, and Chatsworth, California, with multiple accompanying injuries and fatalities. In the case of a high speed accident between two trains, the results could be catastrophic. Scores of people, including train crews, passengers, and bystanders, could be killed or injured. In the case of a train(s) carrying hazardous materials, there could also be severe damage to the environment and substantial harm to surrounding communities. Moreover, if FRA were unable to collect the required information and carefully review it, "PTC" systems might be put into place or installed at unauthorized/improper locations. This could result in other accidents/incidents, including train derailments, with corresponding casualties that could have been prevented.

Without the required information, FRA could not be assured that railroads establish and implement a PTC training program. Also, if FRA were unable to collect this information, FRA would have no way to know that essential personnel responsible for installing, operating, maintaining, modifying, inspecting, repairing, and testing safety-critical elements of systems were properly trained to carry out their assigned duties regarding vital PTC systems. Without the ability to oversee the adoption and implementation of each railroad's required PTC training program and the proper training of its personnel, there would most likely be increased numbers of accidents/incidents, such as those mentioned above, with even greater numbers of injuries and fatalities to train crews, roadway and other rail (signal) workers, and members of the traveling public. The core part of FRA's safety program is to reduce, to the greatest extent possible, the annual number of rail collisions and derailments that cause loss of life and serious injuries, severe damage to rail equipment, and damage to the natural environment and to surrounding communities whenever a rail accident/incident occurs.

In sum, the collection of information serves to meet the RSIA congressional mandate and advances the goal of enhancing rail safety nationwide. Thus, it aids FRA in fulfilling its

main mission.

7. EXPLAIN ANY SPECIAL CIRCUMSTANCES THAT WOULD CAUSE AN INFORMATION COLLECTION TO BE CONDUCTED IN A MANNER:

- **REQUIRING RESPONDENTS TO REPORT INFORMATION TO THE AGENCY MORE OFTEN THAN QUARTERLY;**

- **REQUIRING RESPONDENTS TO PREPARE A WRITTEN RESPONSE TO A COLLECTION OF INFORMATION IN FEWER THAN 30 DAYS AFTER RECEIPT OF IT;**

- **REQUIRING RESPONDENTS TO SUBMIT MORE THAN AN ORIGINAL AND TWO COPIES OF ANY DOCUMENT;**

- **REQUIRING RESPONDENTS TO RETAIN RECORDS, OTHER THAN HEALTH, MEDICAL, GOVERNMENT CONTRACT, GRANT-IN-AID, OR TAX RECORDS FOR MORE THAN THREE YEARS;**

- **IN CONNECTION WITH A STATISTICAL SURVEY, THAT IS NOT DESIGNED TO PRODUCE VALID AND RELIABLE RESULTS THAT CAN BE GENERALIZED TO THE UNIVERSE OF STUDY;**
- **REQUIRING THE USE OF A STATISTICAL DATA CLASSIFICATION THAT HAS NOT BEEN REVIEWED AND APPROVED BY OMB;**

- **THAT INCLUDES A PLEDGE OF CONFIDENTIALITY THAT IS NOT SUPPORTED BY AUTHORITY ESTABLISHED IN STATUE OR REGULATION, THAT IS NOT SUPPORTED BY DISCLOSURE AND DATA SECURITY POLICIES THAT ARE CONSISTENT WITH THE PLEDGE, OR WHICH UNNECESSARILY IMPEDES SHARING OF DATA WITH OTHER AGENCIES FOR COMPATIBLE CONFIDENTIAL USE; OR**

- **REQUIRING RESPONDENTS TO SUBMIT PROPRIETARY TRADE SECRET, OR OTHER CONFIDENTIAL INFORMATION UNLESS THE AGENCY CAN DEMONSTRATE THAT IT HAS INSTITUTED PROCEDURES TO PROTECT THE INFORMATION'S CONFIDENTIALITY TO THE EXTENT PERMITTED BY LAW.**

Under § 236.917(b), railroads may have to report information to FRA more often than quarterly if the frequency of the safety-relevant hazards exceeds the threshold set forth in the Product Safety Plan (PSP). Once the product is placed in service, railroads must

report the inconsistency to the FRA Director, Office of Safety Assurance and Compliance, at agency headquarters within 15 days of discovery. Railroads are also required to provide a final report to the FRA Director, Office of Safety Assurance and Compliance, on the results of the analysis and countermeasures taken to reduce the frequency of the safety-relevant hazard(s) below the threshold set forth in the PSP when the problem is resolved.

Additionally, under § 236.917(a), railroads must retain at a designated office, for the life cycle of the product (about 25 years), the following: (i) Adequate documentation to demonstrate that the PSP meets the safety requirements of the Railroad's Safety Program Plan (RSPP) and applicable standards in this subpart, including the risk assessment; (ii) An Operations and Maintenance Manual, pursuant to § 236.919; and (iii) training records pursuant to § 236.923(b).

Furthermore, under § 236.1005(g)(1)(i) of new Subpart I, written or telephonic notification to the applicable FRA Regional Administrator of temporary emergency rerouting of trains equipped with a PTC system onto a track not equipped with a PTC system and of trains not equipped with a PTC system onto a track equipped with a PTC system must be made within one business day of the beginning of the rerouting. Also, under § 236.1005(g)(2)(ii), rerouting requests of trains equipped with a PTC system onto a track not equipped with a PTC system and of trains not equipped with a PTC system onto a track equipped with a PTC system due to planned maintenance must be filed with the applicable FRA Regional Administrator no less than 10 days prior to the planned rerouting. Both requirements are to ensure rail safety and prevent avoidable collisions and derailments.

Moreover, under § 236.1037(d), if the frequency of safety-relevant hazards exceeds the threshold set forth in either the PTCDP or PTCSP, reports of the inconsistency must be made in writing by mail, facsimile, e-mail, or hand delivery to the FRA Director of Safety Assurance and Compliance within 15 days of discovery. Again, this is to ensure rail safety.

Finally, under § 236.1043(b), employers must retain training records of those employees who are qualified under this section until new designations are recorded, or for at least one year after such persons leave applicable service. These records are necessary so that FRA inspectors can verify that employees are properly trained and qualified to perform their duties related to the installation, repair, modification, inspection, and testing of PTC systems and safety-critical elements of the railroad's PTC system. These records are also essential for FRA/NTSB investigators in the event of a rail accident/incident.

All other reporting and recordkeeping requirements are in compliance with this section.

8. IF APPLICABLE, PROVIDE A COPY AND IDENTIFY THE DATE AND PAGE NUMBER OF PUBLICATION IN THE FEDERAL REGISTER OF THE AGENCY'S NOTICE, REQUIRED BY 5 CFR 1320.8(d), SOLICITING COMMENTS ON THE INFORMATION COLLECTION PRIOR TO SUBMISSION TO OMB. SUMMARIZE PUBLIC COMMENTS RECEIVED IN RESPONSE TO THAT NOTICE AND DESCRIBE ACTIONS TAKEN BY THE AGENCY IN RESPONSE TO THOSE COMMENTS. SPECIFICALLY ADDRESS COMMENTS RECEIVED ON COST AND HOUR BURDEN.
DESCRIBE EFFORTS TO CONSULT WITH PERSONS OUTSIDE THE AGENCY TO OBTAIN THEIR VIEWS ON THE AVAILABILITY OF DATA, FREQUENCY OF COLLECTION, THE CLARITY OF INSTRUCTIONS AND RECORDKEEPING, DISCLOSURE, OR REPORTING FORMAT (IF ANY), AND ON THE DATA ELEMENTS TO BE RECORDED, DISCLOSED, OR REPORTED.

CONSULTATION WITH REPRESENTATIVES OF THOSE FROM WHOM INFORMATION IS TO BE OBTAINED OR THOSE WHO MUST COMPILE RECORDS SHOULD OCCUR AT LEAST ONCE EVERY 3 YEARS--EVEN IF THE COLLECTION OF INFORMATION ACTIVITY IS THE SAME AS IN PRIOR PERIODS. THERE MAY BE CIRCUMSTANCES THAT MAY PRECLUDE CONSULTATION IN A SPECIFIC SITUATION. THESE CIRCUMSTANCES SHOULD BE EXPLAINED.

FRA is publishing this Notice of Proposed Rulemaking (NPRM) on July 21, 2009, in the Federal Register. *See* 74 FR 35950. With publication of this NPRM, FRA is soliciting public comments both on the contents of the NPRM and the associated information collection requirements. FRA plans on responding to any comments received in the PTC Final Rule and its associated information collection submission.

Background

In March 1996, FRA established the RSAC, which provides a forum for collaborative rulemaking and program development. The RSAC includes representatives from all of the agency's major customer groups, including railroads, labor organizations, suppliers and manufacturers, and other interested parties. When appropriate, FRA assigns a task to RSAC, and after consideration and debate, RSAC may accept or reject the task. If accepted, RSAC establishes a working group that possesses the appropriate expertise and representation of interests to develop recommendations to FRA for action on the task. These recommendations are developed by consensus. The working group may establish one or more task forces or other subgroups to develop facts and options on a particular aspect of a given task. The task force, or other subgroup, reports to the working group. If a working group comes to consensus on recommendations for action, the package is presented to the RSAC for a vote. If the proposal is accepted by a simple majority of the

RSAC, the proposal is formally recommended to FRA. FRA then determines what action to take on the recommendation. Because FRA staff has played an active role at the working group and subgroup levels in discussing the issues and options and in drafting the language of the consensus proposal, and because the RSAC recommendation constitutes the consensus of some of the industry's leading experts on a given subject, FRA is generally favorably inclined toward the RSAC recommendation. However, FRA is in no way bound to follow the recommendation and the agency exercises its independent judgment on whether the recommended rule achieves the agency's regulatory goals, is soundly supported, and is developed in accordance with the applicable policy and legal requirements. Often, FRA varies in some respects from the RSAC recommendation in developing the actual regulatory proposal.

In developing this proposal, FRA adopted the RSAC PTC Working Group approach. As part of this effort, FRA is working with the major stakeholders affected by this subpart in as much a collaborative manner as possible. FRA believes establishing a collaborative relationship early in the product development and regulatory development cycles can help bridge the divide between the railroad carrier's management, railroad labor organizations, the suppliers, and FRA by ensuring that all stakeholders are working with the same set of data and have a common understanding of product characteristics or their related processes production methods, including the regulatory provisions, with which compliance is mandatory. However, where the group failed to reach consensus on an issue, FRA has the authority to resolve the issue on its own, attempting to reconcile as many of the divergent positions as possible through traditional rulemaking proceedings.

On December 10, 2008, the RSAC accepted a task (No. 08-04) entitled "Implementation of Positive Train Control Systems." The purpose of this task was defined as follows: "To provide advice regarding development of implementing regulations for Positive Train Control (PTC) systems and their deployment under the Rail Safety Improvement Act of 2008." The task called for the RSAC PTC Working Group to perform the following:

- Review the mandates and objectives of the Act related to deployment of PTC systems;

- Help to describe the specific functional attributes of systems meeting the statutory purposes in light of available technology;

- Review impacts on small entities and ascertain how best to address them in harmony with the statutory requirements;

- Help to describe the details that should be included in the implementation plans that railroads must file within 18 months of enactment of the Act;

- Offer recommendations on the specific content of implementing regulations; and

The task also required the PTC Working Group to:

- Report on the functionalities of PTC systems;

- Describe the essential elements bearing on interoperability and the requirements for consultation with other railroads in joint operations; and

- Determine how PTC systems will work with the operation of non-equipped trains.

The PTC Working Group was formed from interested organizations that are members of the RSAC. The following organizations contributed members:

American Association of State Highway & Transportation Officials (AAHSTO)
American Chemistry Council (ACC)
American Public Transportation Association (APTA)
American Short Line and Regional Railroad Association (ASLRRA)
Association of American Railroads (AAR)
Association of State Rail Safety Managers (ASRSM)
Brotherhood of Maintenance of Way Employes Division (BMWED)
Brotherhood of Locomotive Engineers and Trainmen Division (BLETD)
Brotherhood of Railroad Signalmen
Federal Transit Administration*
International Brotherhood of Electrical Workers
National Railroad Construction and Maintenance Association
National Railroad Passenger Corporation (Amtrak)
National Transportation Safety Board (NTSB)*
Railway Supply Institute (RSI)
Transport Canada*
Tourist Railway Association Inc.
United Transportation Union (UTU)
*Indicates associate (non-voting) member.

From January to April 2009, FRA met with the entire PTC Working Group five times over the course of twelve days. During those meetings, in order to efficiently accomplish the tasks assigned to it, the PTC Working Group empowered three task forces to work concurrently. These task forces included the passenger, short line and regional railroad, and the radio and communications task forces. Each discussed issues specific to their particular interests and needs, and produced proposed rule language for the PTC Working Group's consideration. The majority of the proposals were adopted into the rule as agreed upon by the working group, with rule language related to a remaining few issues being further discussed and enhanced for inclusion into the rule by the PTC Working Group.

The passenger task force discussed testing issues relating to parts 236 and 238 and the definition of "main line" under the statute, including possible passenger terminal and limited operations exceptions to PTC implementation. Recommendations of the task force were presented to the PTC Working Group, which adopted or refined each suggestion.

The short line and regional railroad task group was formed to address the questions pertaining to Class II and Class III railroads. Specifically, the group discussed issues regarding the trackage rights of Class II and III railroads using trains not equipped with PTC technology over a Class I railroad's PTC territory, passenger service over track owned by a Class II or Class III railroads where PTC would not otherwise be required, and railroad crossings-at-grade involving a Class I railroad's PTC equipped train and a Class II or III railroad's PTC unequipped train. After much discussion, there were no resolutions reached to any of the main issues raised. However, the discussion yielded insights utilized by FRA in preparing this proposed rule.

The radio and communications task force addressed wireless communications issues, particularly as it relates to communications security, and recommended language for proposed § 236.1033.

FRA staff worked with the PTC Working Group and its task forces in developing many facets of this proposal. FRA gratefully acknowledges the participation and leadership of representatives who served on the PTC Working Group and its task forces. These points are discussed to show the origin of certain issues and the course of discussion on these issues at the task force and working group levels. FRA believes this helps illuminate the factors that the agency weighed in making its regulatory decisions regarding this proposed rule and the logic behind those decisions.

In general, the PTC Working Group agreed on the process for implementing PTC under the statute, including decisional criteria to be applied by FRA in evaluating safety plans, adaptation of subpart H principles to support this mandatory implementation, and refinements to subpart H and the part 236 appendices necessary to dovetail the two regulatory regimes and take lessons from early implementation of subpart H, including most aspects of the training requirements. Notable accords were reached, as well, on major functionalities of PTC and on exceptions applicable to passenger service (terminal areas and main line exceptions). Major areas of disagreement included whether to allow non-equipped trains on PTC lines, extension of PTC to lines not within the statutory mandate, and whether to provide for additional onboard displays when two or more persons are regularly assigned duties in the cab. Some additional areas of concern were discussed, but could not be resolved in the time available. It was understood that where discussion did not yield agreement, FRA would make proposals and receive public comment.

9. EXPLAIN ANY DECISION TO PROVIDE ANY PAYMENT OR GIFT TO RESPONDENTS, OTHER THAN REMUNERATION OF CONTRACTORS OR GRANTEES.

No payment or gifts will be made to respondents.

10. DESCRIBE ANY ASSURANCE OF CONFIDENTIALITY PROVIDED TO RESPONDENTS AND THE BASIS FOR THE ASSURANCE IN STATUTE, REGULATION, OR AGENCY POLICY.

While FRA continues to believe that there is no need at this time to substantially revise § 209.11, FRA proposes in subpart I to require an additional document to assist FRA in efficiently and correctly reviewing confidential information. Under § 209.11, a redacted and an un-redacted copy of the same document must be submitted. When FRA review is required to determine whether confidentiality should be afforded, FRA personnel must painstakingly compare side-by-side the two versions to determine what information has been redacted. To reduce this burden, FRA proposes that any material submitted for confidential treatment under subpart I and § 209.11 must include a third version that would indicate, without fully obscuring, the redacted portions. For instance, to indicate, without obscuring, the plan's redacted portions, the railroad may use the color or light gray highlighting, underlining, or strikethrough functions of its word processing program. This document will also be treated as confidential under § 209.11. While FRA could instead amend § 209.11 to include this requirement, FRA does not believe it to be necessary at this time. If more regulatory procedures in other subparts or parts provide for confidential treatment under § 209.11, FRA will then consider whether amendment of § 209.11 would be appropriate at that time.

11. PROVIDE ADDITIONAL JUSTIFICATION FOR ANY QUESTIONS OF A SENSITIVE NATURE, SUCH AS SEXUAL BEHAVIOR AND ATTITUDES, RELIGIOUS BELIEFS, AND OTHER MATTERS THAT ARE COMMONLY CONSIDERED PRIVATE. THIS JUSTIFICATION SHOULD INCLUDE THE REASONS WHY THE AGENCY CONSIDERS THE QUESTIONS NECESSARY, THE SPECIFIC USES TO BE MADE OF THE INFORMATION, THE EXPLANATION TO BE GIVEN TO PERSONS FROM WHOM THE INFORMATION IS REQUESTED, AND ANY STEPS TO BE TAKEN TO OBTAIN THEIR CONSENT.

This information collection does not contain any questions of a personal or sensitive nature.

12. PROVIDE ESTIMATES OF THE HOUR BURDEN OF THE COLLECTION OF INFORMATION. THE STATEMENT SHOULD:

- **INDICATE THE NUMBER OF RESPONDENTS, FREQUENCY OF RESPONSE, ANNUAL HOUR BURDEN, AND AN EXPLANATION OF HOW THE BURDEN WAS ESTIMATED. UNLESS DIRECTED TO DO SO, AGENCIES SHOULD NOT CONDUCT SPECIAL SURVEYS TO OBTAIN INFORMATION ON WHICH TO BASE HOUR BURDEN ESTIMATES. CONSULTATION WITH A SAMPLE (FEWER THAN 10) OF POTENTIAL RESPONDENTS IS DESIRABLE. IF THE HOUR BURDEN ON RESPONDENTS IS EXPECTED TO VARY WIDELY BECAUSE OF DIFFERENCES IN ACTIVITY, SIZE, OR COMPLEXITY, SHOW THE RANGE OF ESTIMATED HOUR BURDEN, AND EXPLAIN THE REASONS FOR THE VARIANCE. GENERALLY, ESTIMATES SHOULD NOT INCLUDE BURDEN HOUR FOR CUSTOMARY AND USUAL BUSINESS PRACTICES.**

- **IF THIS REQUEST FOR APPROVAL COVERS MORE THAN ONE FORM, PROVIDE SEPARATE HOUR BURDEN ESTIMATES FOR EACH FORM AND AGGREGATE THE HOUR BURDENS IN ITEMS 13 OF OMB FORM 83-I.**

- **PROVIDE ESTIMATES OF ANNUALIZED COST TO RESPONDENTS FOR THE HOUR BURDENS FOR COLLECTIONS OF INFORMATION, IDENTIFYING AND USING APPROPRIATE WAGE RATE CATEGORIES. THE COST OF CONTRACTING OUT OR PAYING OUTSIDE PARTIES FOR INFORMATION COLLECTION ACTIVITIES SHOULD NOT BE INCLUDED HERE. INSTEAD, THIS COST SHOULD BE INCLUDED IN ITEM 14.**

Note: Burden estimates were obtained by consulting the FRA Positive Train Control Technical Expert (Chief Electrical Engineer) who is most knowledgeable of both the Part 236 requirements under Subpart H and the new requirements under Subpart I. In thoroughly reviewing all the requirements of this rule, the Chief Electrical Engineer explained that the complexity of each of the requirements under Subpart H and the level of effort needed to fulfill them and complete the necessary documents by railroads or suppliers were greatly underestimated in the previous submission. As a result, burden time estimates in this submission have greatly increased. According to the latest available agency data, there are currently approximately 728 railroads operating in the United States.

§ 229.135 – Event Recorders

(b) *Equipment requirements*. Event recorders must monitor and record data elements required under this paragraph with at least the accuracy required of the indicators displaying any of the required elements to the engineer.

(3) A lead locomotive, a lead manned helper locomotive, and a controlling remotely distributed power locomotive, other than a DMU or MU locomotive, originally ordered on or after October 1, 2006 or placed in service on or after October 1, 2009, shall be equipped with an event recorder with a certified crashworthy event recorder memory module that meets the requirements of Appendix D of this part. The certified event recorder memory module shall be mounted for its maximum protection. (Although other mounting standards may meet this standard, an event recorder memory module mounted behind and below the top of the collision posts and above the platform level is deemed to be mounted "for its maximum protection.") The event recorder shall record, and the certified crashworthy event recorder memory module shall retain, the following data elements: * * *

(xxv) Safety-critical control data routed to the locomotive engineer's display with which the engineer is required to comply, specifically including text messages conveying mandatory directives, and maximum authorized speed. The format, content, and proposed duration for retention of such data must be specified in the Product Safety Plan or PTC Safety Plan (PTCSP) submitted for the train control system under subparts H or I, respectively, of Part 236 of this chapter, subject to FRA approval under this paragraph. If it can be calibrated against other data required by this Part, such control data may, at the election of the railroad, be retained in a separate certified crashworthy memory module.

(4) A DMU locomotive and an MU locomotive originally ordered on or after October 1, 2006 or placed in service on or after October 1, 2009, shall be equipped with an event recorder with a certified crashworthy event recorder memory module that meets the requirements of Appendix D of this part. The certified event recorder memory module shall be mounted for its maximum protection. (Although other mounting standards may meet this standard, an event recorder memory module mounted behind the collision posts and above the platform level is deemed to be mounted "for its maximum protection.") The event recorder shall record, and the certified crashworthy event recorder memory module shall retain, the following data elements: * * *

(xxi) Safety-critical train control data routed to the locomotive engineer's display with which the engineer is required to comply, specifically including text messages conveying mandatory directives, and maximum authorized speed. The format, content, and proposed duration for retention of such data shall be specified in the product safety plan or PTC Safety Plan submitted for the train control system under subparts H or I, respectively, of part 236 of this chapter, subject to FRA approval under this paragraph. If it can be calibrated against other data required by this part, such train control data may, at the election of the railroad, be retained in a separate certified crashworthy memory module.

The burden for these provisions are included under that of § 236.907 relating to the Product Safety Plan (PSP) and under§ 236.1015 relating to the PTC Safety Plan. Consequently, there is no additional burden associated with these requirements.

§ 234.275 - Processor-based systems

The Product Safety Plan must explain how the performance objective sought to be addressed by each of the particular requirements of this subpart is met by the product, why the objective is not relevant to the product's design, or how safety requirements are satisfied using alternative means. Deviation from those particular requirements is authorized if an adequate explanation is provided, making reference to relevant elements of the Product Safety Plan (PSP), and if the product satisfies the performance standard set forth in § 236.909 of this chapter.

The burden for the first part of this requirement regarding the Product Safety Plan (PSP) is included under that of § 236.907. Consequently, there is no additional burden associated with it.

Regarding the second part of the above requirement, FRA estimates that approximately 25 letters explaining deviations of a product from the requirements of this subpart will be received by the agency. It is estimated that it will take approximately four (4) hours to compose each letter, making reference to the relevant elements of the PSP. Total annual burden for this requirement is 100 hours.

Respondent Universe:

20 railroads

Burden time per response:

4 hours

Frequency of Response: On occasion
Annual number of Responses: 25 letters
Annual Burden: 100 hours

Calculation: 25 letters x 4 hrs. = 100 hours

Deviation from the requirement of § 234.203 (Control circuits) that circuits be designed on a fail-safe principle must be separately justified at the component, subsystem, and system level using the criteria of § 236.909 of this chapter.

The burden for this requirement is included under § 236.907. Consequently, there is no additional burden associated with it.

Any processor-based system, subsystem, or component subject to this part, which is not subject to the requirements of part 236, subpart H of this chapter but which provides safety-critical data to a signal or train control system must be included in the software management control plan as required in § 236.18 of this chapter.

The burden for this requirement is included under § 236.18. Consequently, there is no additional burden associated with it.

§ 236.0 - Applicability, minimum requirements, and penalties.

(c)(2) On and after [insert date 24 months from publication of the final rule in the **Federal Register]**, where a passenger train is permitted to operate at a speed of 60 or more miles per hour, or a freight train is permitted to operate at a speed of 50 or more miles per hour, a block signal system complying with the provisions of this part shall be installed, unless an FRA approved PTC system meeting the requirements of this part for the subject speed and other operating conditions, is installed.

The burden for this requirement is included under that of § 236.1009. Consequently, there is no additional burden associated with this requirement.

(d)(1) Prior to December 31, 2015, where any train is permitted to operate at a speed of 80 or more miles per hour, an automatic cab signal, automatic train stop, or automatic train control system complying with the provisions of this part shall be installed, unless an FRA approved PTC system meeting the requirements of this part for the subject speed and other operating conditions, is installed.

The burden for this requirement is included under that of § 236.1009. Consequently, there is no additional burden associated with this requirement

(e) Nothing in this section authorizes the discontinuance of a block signal system, interlocking, traffic control system, automatic train control or train stop system, cab signal system, or PTC system without approval by the FRA under part 235 of this title. However, a railroad may apply for approval of discontinuance or material modification of a signal or train control system in connection with a request for approval of a Positive Train Control Development Plan (PTCDP) or Positive Train Control Safety Plan (PTCSP) as provided in subpart I of this part.

The burden for this requirement is included under that of § 236.1009. Consequently, there is no additional burden associated with this requirement

§ 236.18 - Software management control plan

Within six (6) months of June 6, 2005, each railroad must develop and adopt a software management control plan for its signal and train control systems. A railroad commencing operations after June 6, 2005, must adopt a software management control plan for its signal and train control systems prior to commencing operations. Within 30 months of the completion of the software management control plan, each railroad must have fully implemented such plan.

For purposes of this section, "software management control plan" means a plan designed to ensure that the proper and intended software version for each specific site and location is documented (mapped) and maintained through the life cycle of the system. The plan must further describe how the proper software configuration is to be identified and confirmed in the event of replacement, modification, or disarrangement of any part of the system.

FRA estimates that no Class I railroads, 50 percent of Class II railroads, and 25 percent of Class III railroads will be affected by the above requirement. Consequently, there are approximately 184 railroads that will be affected and that will need to prepare and adopt software management control plans. It is estimated that it will take each railroad approximately 6,440 hours to develop and complete its software management control plan. This includes the time to prepare the plan (approximately 40 hours for each railroad), develop procedures (approximately 160 hours for each railroad), and conduct the necessary site inventory (a total of 2,080 sites that will take approximately three (3) hours each). However, since this is a one-time burden and since OMB approvals are normally for three years, the average burden time of 6,440 hours per plan must be divided by three to calculate the annual burden of 2,150 hours per plan (2,146 hours rounded off). Total annual burden then for this requirement is 395,600 hours.

Respondent Universe:

184 railroads

Burden time per response:

2,150 hours

Frequency of Response: One-time
Annual number of Responses: 184 plans
Annual Burden: 395,600 hours

Calculation: 184 plans x 2,150 hours = 395,600 hours

Subsequent Years

Whenever necessary, railroads will update their software management control plans. Approximately half of the original 184 railroads or approximately 90 railroads will fall into this category. Of these 90, approximately 20 railroads will revise their software management control plans each year and submit them to FRA. It is estimated that these revisions will not be major and that each updated software management control plan will take approximately 1.50 hours to complete and send to FRA. Total annual burden then for this requirement is 30 hours.

Respondent Universe:

90 railroads

Burden time per response:

1.50 hours

Frequency of Response: Annually
Annual number of Responses: 20 updated plans
Annual Burden: 30 hours

Calculation: 20 updated plans x 1.50 hours = 30 hours

Total annual burden then for this entire requirement is 398,630 hours (395,600 + 30).

§ 236.110 - Results of tests

Results of tests made in compliance with §§ 236.102 to 236.109, inclusive; 236.376 to 236.387, inclusive; 236.576; 236.577; 236.586 to 236.589, inclusive; and 236.917(a) must be recorded on pre-printed forms provided by the railroad or by electronic means, subject to approval by the FRA Associate Administrator for Safety. These records must

show the name of the railroad, place, and date, equipment tested, results of tests, repairs, replacements, adjustments made, and condition in which the apparatus was left. Each record must be: (1) signed by the employee making the test, or electronically coded or identified by the number of the automated test equipment (where applicable); (2) unless otherwise noted, filed in the office of a supervisory official having jurisdiction; and (3) available for inspection and replication by FRA and FRA certified-State inspectors.

Results of tests made in compliance with § 236.587 must be retained for 92 days. Results of tests made in compliance with § 236.917(a) must be retained as follows: (1) Results of tests that pertain to installation or modification must be retained for the life cycle of the equipment tested and may be kept in any office designated by the railroad; and (2) Results of periodic tests required for maintenance or repair of the equipment tested must be retained until the next record is filed but in no case less than one year. Results of all other tests listed in this section must be retained until the next record is filed but in no case less than one year.

Electronic or automated tracking systems used to meet the requirements contained in paragraph (a) of this section must be capable of being reviewed and monitored by FRA at any time to ensure the integrity of the system. FRA's Associate Administrator for Safety may prohibit or revoke a railroad's authority to utilize an electronic or automated tracking system in lieu of pre-printed forms if FRA finds that the electronic or automated tracking system is not properly secured; is inaccessible to FRA, FRA certified-State inspectors or railroad employees requiring access to discharge their assigned duties; or fails to adequately track and monitor the equipment. The Associate Administrator for Safety will provide the affected railroad with a written statement of the basis for his or her decision prohibiting or revoking the railroad from utilizing an electronic or automated tracking system.

The burden for this requirement is covered under OMB No. 2130-0006.

Subpart H - Safety of Processor-Based Signal and Control Systems

§ 236.901 - Purpose and scope

This subpart does not exempt a railroad from compliance with the requirements of subparts A through G of this part, except to the extent a Product Safety Plan (PSP) explains to the FRA Associate Administrator for Safety's satisfaction the following: (i) How the objectives of any such requirements are met by the product; (ii) Why the objectives of any such requirements are not relevant to the product; or (iii) How the requirement is satisfied using alternative means.

The burden for this requirement is included under § 236.907.

§ 236.905 - Railroad Safety Program Plan (RSPP)

A. A railroad subject to this subpart shall develop a Railroad Safety Program Plan (RSPP), subject to FRA approval, that serves as its principal safety document for all safety-critical products. The RSPP must establish the minimum Product Safety Plan (PSP) requirements that will govern the development and implementation of all products subject to this subpart, consistent with the provisions contained in § 236.907.

The railroad's RSPP must address, at a minimum, the following subject areas:

(1) *Requirements and concepts*. The RSPP must require a description of the preliminary hazard analysis, including: (i) A complete description of methods used to evaluate a system's behavioral characteristics; (ii) A complete description of risk assessment procedures; (iii) The system safety precedence followed; and (iv)The identification of the safety assessment process.

(2) *Design for verification and validation.* The RSPP must require the identification of validation and verification methods for the preliminary safety analysis, initial development process, and future incremental changes, including standards to be used in the validation and verification process, consistent with Appendix C to this part. The RSPP must require that references to any non-published standards be included in the PSP.

(3) *Design for human factors.* The RSPP must require a description of the process used during product development to identify human factors issues and develop design requirements which address those issues.

(4) *Configuration management control plan.* The RSPP must specify requirements for configuration management for all products to which this subpart applies.
Each railroad must submit a petition for approval of a RSPP in triplicate to the Associate Administrator for Safety, FRA, 1200 New Jersey Avenue, S.E., Mail Stop 25, Washington, D.C. 20590. The petition must contain a copy of the proposed RSPP and the name, title, address, and telephone number of the railroad's primary contact person for review of the petition.

This is a one-time requirement. FRA estimates that only six (6) Class II and Class III railroads will be affected by the above requirement. It is estimated that each RSPP will be approximately 50 pages long. It is estimated that it will take approximately 400 hours (8 hours per page) to meet all the above requirements and for the assigned railroad person to write the petition, and complete the RSPP. However, since this is a one-time burden and since OMB approvals are normally for three years, the average burden time of 400 hours per RSPP must be divided by three to calculate the annual burden of 135 hours per plan (133 hours rounded off). Total annual burden for this requirement is 810 hours.

Respondent Universe: 78 railroads

Burden time per response: 135 hours

Frequency of Response: One-time

Annual number of Responses: 6 plans/RSPPs
Annual Burden: 810 hours

Calculation: 6 plans/RSPPs x 135 hours = 810 hours

(i) Normally within 180 days of receipt of a petition for approval of an RSPP, FRA: (i) Grants the petition, if FRA finds that the petition complies with applicable requirements of this subpart, attaching any special conditions to the approval of the petition as necessary to carry out the requirements of this subpart; (ii) Denies the petition, setting forth the reasons for denial; or (iii) Requests additional information.

FRA estimates that additional information will be requested by the agency in approximately one (1) case per year. It is estimated that the required document will be approximately 50 pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the document. Thus, it is estimated that it will take each railroad approximately 400 hours to complete the required document

and send it to FRA. Total annual burden for this requirement is 400 hours.

Respondent Universe: 78 railroads

Burden time per response: 400 hours

Frequency of Response: On occasion

Annual number of Responses: 1 document
Annual Burden: 400 hours

Calculation: 1 document x 400 hours = 400 hours

B. Railroads must obtain FRA approval for any modification to their RSPP which affects a safety-critical requirement of a PSP. Other modifications do not require FRA approval.

Petitions for FRA approval of RSPP modifications are subject to the same procedures as petitions for initial RSPP approval, as specified in paragraph (c) of this section (§ 236.905). In addition, such petitions must identify the proposed modifications to be made, the reason for the modification(s), and the effect of the modification(s) on safety.

FRA estimates that approximately one (1) request for modification to a Railroad Safety Program Plan (RSPP) will be made by railroads each year under the above requirement. Again, it is estimated that the RSPP modified document will be approximately 50 pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each RSPP modification request/amendment. Thus, it is estimated that it will take each railroad approximately 400 hours to complete each RSPP amendment and send it to FRA. Total annual burden for this requirement is 400 hours.

Respondent Universe: 78 railroads

Burden time per response:

400
hours

Frequency of Response:	On occasion
Annual number of Responses:	1 RSPP modification request/amendment
Annual Burden:	400 hours
Calculation:	1 RSPP modification request/amendment x 400 hours = 400 hours

The total burden for this entire requirement is 1,610 hours (810 + 400 + 400).

§ 236.907 - Product Safety Plan (PSP)

The Product Safety Plan must include the following: (1) A complete description of the product, including a list of all product components and their physical relationship in the subsystem or system; (2) A description of the railroad operation or categories of operations on which the product is designed to be used, including train movement density, gross tonnage, passenger train movement density, hazardous materials volume, railroad operating rules, and operating speeds; (3) An operational concepts document, including a complete description of the product functionality and information flows; (4) A safety requirements document, including a list with complete descriptions of all functions which the product performs to enhance or preserve safety; (5) A document describing the manner in which product architecture satisfies safety requirements; (6) A hazard log consisting of a comprehensive description of all safety-relevant hazards to be addressed during the life cycle of the product, including maximum threshold limits for each hazard (for unidentified hazards, the threshold shall be exceeded at one occurrence); (7) A risk assessment, as prescribed in § 236.909 and Appendix B to this part; (8) A hazard mitigation analysis, including a complete and comprehensive description of all hazards to be addressed in the system design and development, mitigation techniques used, and system safety precedence followed, as prescribed by the applicable RSPP; (9) A complete description of the safety assessment and validation and verification processes applied to the product and the results of these processes, describing how subject areas covered in Appendix C to this part are either: addressed directly, addressed using other safety criteria, or are not applicable; (10) A complete description of the safety assurance concepts used in the product design, including an explanation of the design principles and assumptions; (11) A human factors analysis, including a complete description of all human-machine interfaces, a complete description of all functions performed by humans in connection with the product to enhance or preserve safety, and an analysis in accordance with Appendix E to this part or in accordance with other criteria if demonstrated to the satisfaction of the Associate

Administrator for Safety to be equally suitable; (12) A complete description of the specific training of railroad and contractor employees and supervisors necessary to ensure the safe and proper installation, implementation, operation, maintenance, repair, inspection, testing, and modification of the product; (13) A complete description of the specific procedures and test equipment necessary to ensure the safe and proper installation, implementation, operation, maintenance, repair, inspection, testing, and modification of the product. These procedures, including calibration requirements, must be consistent with or explain deviations from the equipment manufacturer's recommendations; (14) An analysis of the applicability of the requirements of subparts A-G of this part to the product that may no longer apply or are satisfied by the product using an alternative method, and a complete explanation of the manner in which those requirements are otherwise fulfilled (see § 234.275 of this chapter, and § 236.901(c)); (15) A complete description of the necessary security measures for the product over its life-cycle; (16) A complete description of each warning to be placed in the Operations and Maintenance Manual identified in § 236.919 and of all warning labels required to be placed on equipment as necessary to ensure safety; (17) A complete description of all initial implementation testing procedures necessary to establish that safety-functional requirements are met and safety-critical hazards are appropriately mitigated; (18) A complete description of: (i) All post-implementation testing (validation) and monitoring procedures, including the intervals necessary to establish that safety-functional requirements, safety-critical hazard mitigation processes, and safety-critical tolerances are not compromised over time, through use, or after maintenance (repair, replacement, adjustment) is performed; and (ii) Each record necessary to ensure the safety of the system that is associated with periodic maintenance, inspections, tests, repairs, replacements, adjustments, and the system's resulting conditions, including records of component failures resulting in safety-relevant hazards (see § 236.917(e)(3)); (19) A complete description of any safety-critical assumptions regarding availability of the product, and a complete description of all backup methods of operation; and (20) A complete description of all incremental and pre-defined changes (see paragraphs (b) and (c) of this section).

Predefined changes are not considered design modifications requiring an entirely new safety verification process, a revised PSP, and informational filing or petition for approval in accordance with § 236.915. However, the risk assessment for the product must demonstrate that operation of the product, as modified by any predefined change, satisfies the minimum performance standard.
The PSP must identify configuration/revision control measures designed to ensure that safety-functional requirements and safety-critical hazard mitigation processes are not compromised as a result of any such change.

Incremental changes are planned product version changes described in the initial PSP where slightly different specifications are used to allow the gradual enhancement of the product's capabilities. Incremental changes shall require verification and validation to the extent the changes involve safety-critical functions. Changes classified as maintenance

require validation.

The PSP must specify all contractual arrangements with hardware and software suppliers for immediate notification of any and all safety critical software upgrades, patches, or revisions for their processor-based system, sub-system, or component, and the reasons for such changes from the suppliers, whether or not the railroad has experienced a failure of that safety critical system, sub-system, or component.

The PSP must specify the railroad's procedures for action upon notification of a safety critical upgrade, patch, or revision for this processor-based system, sub-system, or component, and until the upgrade, patch, or revision has been installed; and such action shall be consistent with the criterion set forth in §236.915(d) as if the failure had occurred on that railroad.

The PSP must identify configuration/revision control measures designed to ensure that safety-functional requirements and safety-critical hazard mitigation processes are not compromised as a result of any such change, and that such change can be audited.

Product suppliers entering into contractual arrangements for product support described in a PSP must promptly report any safety-relevant failures and previously unidentified hazards to each railroad using the product.

FRA estimates that approximately five (5) Product Safety Plans (PSPs) will be developed by railroads/suppliers to meet the above requirement. FRA estimates that each PSP will amount to approximately 1,200 pages. On average, FRA estimates that it will take approximately 19,200 hours (16 hours per page) to develop each PSP and take appropriate action in notifying FRA. However, since this is a one-time burden and since OMB approvals are normally for three years, the average burden time of 19,200 hours per PSP must be divided by three to calculate the annual burden of 6,400 hours per plan. Total annual burden for this requirement is 32,000 hours.

Respondent Universe:

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Burden time per response: 6,400 hours

Frequency of Response: One-time
Annual number of Responses: 5 plans (PSPs)
Annual Burden: 32,000 hours

Calculation: 5 plans x 6,400 hours = 32,000 hours

§ 236.909 - Minimum Performance Standard

(a) The safety analysis included in the railroad's PSP must establish with a high degree of confidence that introduction of the product will not result in risk that exceeds the previous condition. The railroad shall determine, prior to filing its petition for approval or informational filing, that this standard has been met and shall make available the necessary analyses and documentation as provided in this subpart.

The burden for this requirement is included under § 236.907 above.

(b) With respect to any FRA review of a PSP, the Associate Administrator for Safety independently determines whether the railroad's safety case establishes with a high degree of confidence that introduction of the product will not result in risk that exceeds the previous condition. In evaluating the sufficiency of the railroad's case for the product, the Associate Administrator for Safety considers, as applicable, the factors pertinent to evaluation of risk assessments, listed in § 236.913(g)(2).

FRA estimates that approximately two (2) petitions for review and approval of product safety plans (PSPs) will be submitted by the railroads to the agency under the above requirement. It is estimated that it will take approximately 19,200 hours to prepare each petition/PSP and mail them to FRA. Again, each document will be approximately 1,200 pages and will take approximately 16 hours per page to complete. Total annual burden for this requirement is 38,400 hours.

Respondent Universe: 5 railroads

Burden time per response: 19,200 hours

Frequency of Response: On occasion

Annual number of Responses: 2 petitions/PSPs
Annual Burden: 38,400 hours

Calculation: 2 petitions/PSPs x 19,200 hrs. = 38,400 hours

(c) A full risk assessment performed under this subpart must address the safety risks affected by the introduction, modification, replacement, or enhancement of a product. This includes risks associated with the previous condition which are no longer present as a result of the change, new risks not present in the previous condition, and risks neither newly created nor eliminated whose nature (probability of occurrence or severity) is nonetheless affected by the change.

The burden for this requirement is included under § 236.907 and that of § 236.909(b) above. Consequently, there is no additional burden associated with this requirement.

(d) An abbreviated risk assessment may be used in lieu of a full risk assessment to show compliance with the performance standard if: (i) No new hazards are introduced as a result of the change; (ii) Severity of each hazard associated with the previous condition does not increase from the previous condition; and (iii) Exposure to such hazards does not change from the previous condition.

An abbreviated risk assessment supports the finding required by paragraph (a) of this section if it establishes that the resulting Mean Time To Hazardous Event (MTTHE) for the proposed product is greater than or equal to the MTTHE for the system, component or method performing the same function in the previous condition. This determination must be supported by credible safety analysis sufficient to persuade the Associate Administrator for Safety that the likelihood of the new product's MTTHE being less than the MTTHE for the system, component, or method performing the same function in the previous condition is very small.

Alternatively, an abbreviated risk assessment supports the finding required by paragraph (a) of this section if: (i) The probability of failure for each hazard of the product is equal to or less than the corresponding recommended Specific Quantitative Hazard Probability Ratings classified as more favorable than "undesirable" by AREMA Manual Part 17.3.5 (Recommended Procedure for Hazard Identification and Management of Vital Electronic/Software-Based Equipment Used in Signal and Train Control Applications) or, in the case of a hazard classified as undesirable, the Associate Administrator for Safety concurs that mitigation of the hazard within the framework of the electronic system is not practical and the railroad proposes reasonable steps to undertake other mitigation. The Director of the Federal Register approves the incorporation by reference of the entire AREMA Communications and Signal Manual, Volume 4, Section 17, Quality Principles (2005) in this section in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.; (ii) The product is developed in accordance with: (A) AREMA Manual Part 17.3.1 (Communications and Signal Manual of Recommended Practices, Recommended Safety Assurance Program for Electronic/Software Based Products Used in Vital Signal Applications); (B) AREMA Manual Part 17.3.3 (Communications and Signal Manual of Recommended Practices, Recommended Practice for Hardware Analysis for Vital Electronic/Software-Based Equipment Used in Signal and Train Control Applications); (C) AREMA Manual Part 17.3.5 (Communications and Signal Manual of Recommended Practices, Recommended Practice for Hazard Identification and Management of Vital Electronic/Software-Based Equipment Used in Signal and Train Control Applications); (D) Appendix C of this subpart; and (iii) Analysis supporting the PSP suggests no credible reason for believing that the product will be less safe than the previous condition.

The burden for this requirement is included under § 236.907 and that of § 236.909(b) above. Consequently, there is no additional burden associated with this requirement.

(e) Risk assessment techniques, including both qualitative and quantitative methods, are

recognized as providing credible and useful results for purposes of this section if they apply to the following:

(1) The total risk assessment must have a supporting sensitivity analysis. The analysis must confirm that the risk metrics of the system are not negatively affected by sensitivity analysis input parameters including, for example, component failure rates, human factor error rates, and variations in train traffic affecting exposure. The sensitivity analysis must document the sensitivity to worst case failure scenarios:

FRA estimates that approximately five (5) sensitivity analyses will be completed under the above requirement. FRA estimates that each sensitivity analysis will amount to approximately 20 pages and that it will take approximately eight (8) hours to gather the necessary information and complete each page. Thus, it is estimated that each sensitivity analysis will take approximately 160 hours to complete. Total annual burden for this requirement is 800 hours.

Respondent Universe:

5 railroads

Burden time per response:

160 hours

Frequency of Response: On occasion
Annual number of Responses: 5 sensitivity analyses
Annual Burden: 800 hours

Calculation: 5 sensitivity analyses x 160 hours = 800 hours

(e)(2) For the previous condition and for the life-cycle of the product, risk levels must be expressed in units of consequences per unit of exposure. (i) In all cases exposure must be expressed as total train miles traveled per year over the relevant railroad infrastructure. Consequences must identify the total cost, including fatalities, injuries, property damage, and other incidental costs, such as potential consequences of hazardous materials involvement, resulting from preventable accidents associated with the function(s) performed by the system. (ii) In those cases where there is passenger traffic, a second risk metric must be calculated, using passenger-miles traveled per year as the exposure, and total societal costs of passenger injuries and fatalities, resulting from preventable accidents associated with the function(s) performed by the system, as the consequences.

The burden for this requirement is incorporated in the risk assessment in each PSP and thus included in the burden for § 236.907 and that of § 236.909(b) above. Consequently, there is no additional burden associated with this requirement.

(e)(3) If the description of railroad operations for the product required by § 236.907(a)(2) involves changes to the physical or operating conditions on the railroad prior to or within the expected life cycle of the product subject to review under this subpart, the previous condition must be adjusted to reflect the lower risk associated with systems needed to maintain safety and performance at higher speeds or traffic volumes. In particular, the previous condition must be adjusted for assumed implementation of systems necessary to support higher train speeds as specified in §236.0, as well as other changes required to support projected increases in train operations. The following specific requirements apply:

(i) If the current method of operation would not be adequate under §236.0 for the proposed operations, then the adjusted previous condition must include a system as required under §236.0, applied as follows:

(A) The minimum system where a passenger train is operated at a speed of 60 or more miles per hour, or a freight train is operated at a speed of 50 or more miles per hour, shall be a traffic control system; (B) The minimum system where a train is operated at a speed of 80 or more miles per hour, but not more than 110 miles per hour, shall be an automatic cab signal system with automatic train control; and (C) The minimum system where a train is operated at a speed of more than 110 miles per hour shall be a system determined by the Associate Administrator for Safety to provide an equivalent level of safety to systems required or authorized by FRA for comparable operations.

(ii) If the current method of operation would be adequate under §236.0 for the proposed operations, but the current system is not at least as safe as a traffic control system, then the adjusted previous condition must include a traffic control system in the event of any change that results in: (A) An annual average daily train density of more than twelve trains per day; or (B) An increase in the annual average daily density of passenger trains of more than four trains per day.

(iii) Paragraph (e)(3)(ii)(A) above shall apply in all situations where train volume will exceed more than 20 trains per day but shall not apply to situations where train volume will exceed 12 trains per day but not exceed 20 trains per day, if in its Product Safety Plan (PSP) the railroad makes a showing sufficient to establish, in the judgment of the Associate Administrator for Safety, that the current method of operation is adequate for a specified volume of traffic in excess of twelve trains per day, but not more than 20 trains per day, without material delay in the movement of trains over the territory and without unreasonable expenditures to expedite those movements when compared with the expense of installing and maintaining a traffic control system.

(e)(4) In the case review of a PSP that has been consolidated with a proceeding pursuant to part 235 of this subchapter (*see* section 236.911(b) of this part), the base case shall be determined as follows:

(i) If FRA determines that discontinuance or modification of the system should be granted without regard to whether the product is installed on the territory, then the base case shall be the conditions that would obtain on the territory following the discontinuance or modification. (NOTE: This is an instance in which the base case is posited as greater risk than the actual (unadjusted) previous condition because the railroad would have obtained relief from the requirement to maintain the existing signal or train control system even if no new product had been proffered.)

(ii) If FRA determines that discontinuance or modification of the system should be denied without regard to whether the product is installed on the territory, then the base case shall remain the previous condition (unadjusted).
(iii) If, after consideration of the application and review of the PSP, FRA determines that neither paragraph (e)(4)(i) nor paragraph (e)(4)(ii) should apply, FRA will establish a base case that is consistent with safety and in the public interest.

The burden for this requirement is included in § 236.907 and § 236.909(b) above. Consequently, there is no additional burden associated with this requirement.

The burden for this entire requirement is 39,200 hours (38,400 + 800).

§ 236.911 - Exclusions

(a) Products designed in accordance with subparts A through G of this part which are not in service but are developed or are in the developmental stage prior to March 7, 2005, may be excluded upon notification to FRA by June 6, 2005, if placed in service by March 7, 2008. Railroads may continue to implement and use these products and components from these existing products.

*Since it has been more than three years since the final rule was published in the **Federal Register**, railroads can no longer submit exclusion notifications to FRA. Consequently, there is no burden associated with this requirement*.

A railroad may at any time elect to have products that are excluded made subject to this subpart by submitting a PSP as prescribed in § 236.913 and otherwise complying with this subpart.
The requirements of this subpart do not apply to existing office systems and future deployments of existing office system technology. However, a subsystem or component of an office system must comply with the requirements of this subpart if it performs safety-critical functions within, or affects the safety performance of, a new or next-generation train control system. For purposes of this section, "office system" means a centralized computer-aided train-dispatching system or centralized traffic control board.

Changes or modifications to products otherwise excluded from the requirements of this subpart by this section are not excluded from the requirements of this subpart if they result in a degradation of safety or a material increase in safety-critical functionality. Products excluded by this section from the requirements of this subpart remain subject to subparts A through G of this part as applicable.

Since the above requirement is voluntary and railroads are loath to impose burdens on themselves, FRA estimates that it will receive zero (0)PSPs under the above provision. Consequently, there is no additional burden associated with this requirement.

§ 236.913 - Filing and Approval of PSPs.

(a) A PSP must be prepared for each product covered by this subpart. A joint PSP must be prepared when: (1) The territory on which a product covered by this subpart is normally subject to joint operations, or is operated upon by more than one railroad; and (2) The PSP involves a change in method of operation.

Out of the total number of PSPs submitted to the agency, FRA estimates that it will receive approximately one (1) Joint PSP with the accompanying notification. It is estimated that each Joint PSP will be approximately 1,600 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page.

Thus, it is estimated that it will take approximately 25,600 hours to complete each joint PSP and accompanying notification. Total annual burden for this requirement is 25,600 hours.

Respondent Universe: 6 railroads

Burden time per response: 25,600 hours
Frequency of Response: On occasion
Annual number of Responses: 1 Joint PSP/notification
Annual Burden: 25,600 hours

Calculation: 1 Joint PSP/notification x 25,600 hrs. = 25,600 hours

(b) Depending on the nature of the proposed product or change, the railroad must submit either an informational filing or a petition for approval. Submission of a petition for approval is required for PSPs or PSP amendments concerning installation of new or next-generation train control systems.
All other actions that result in the creation of a PSP or PSP amendment require an informational filing and are handled according to the procedures outlined in paragraph (c) of this section. Applications for discontinuance and material modification of signal and train control systems remain governed by parts 235 and 211 of this chapter; and petitions subject to this section may be consolidated with any relevant application for administrative handling.

FRA estimates that it will receive approximately six (6) informational filings/petitions for approval under the above requirement. It is estimated that it will take approximately eight (8) hours to complete each cover letter and that each modification to the PSP will be approximately 240 pages long and take approximately eight (8) hours per page to gather the required information and complete. Thus, it is estimated that it will take approximately 1,928 hours to complete each informational filing/approval petition and mail it to FRA. Total annual burden for this requirement is 11,568 hours.

Respondent Universe: 6 railroads

Burden time per response: 1,928 hours

Frequency of Response: On occasion
Annual number of Responses: 6 filings/approval petitions
Annual Burden: 11,568 hours

Calculation: 6 filings/approval petitions x 1,928 hrs. = 11,568 hours

(c) The following procedures apply to PSPs and PSP amendments which do not require submission of a petition for approval, but rather require an informational filing: (1) Not less than 180 days prior to planned use of the product in revenue service as described in the PSP or PSP amendment, the railroad must submit an informational filing to the Associate Administrator for Safety, FRA, 1200 New Jersey Avenue, S.E., Mail Stop 25, Washington, D.C. 20590. The informational filing must provide a summary description of the PSP or PSP amendment, including the intended use of the product, and specify the location where the documentation as described in § 236.917(e)(1) is maintained.

The burden for this requirement is included under § 236.913(b) above.

(2) Within 60 days of receipt of the informational filing, FRA: (i) Acknowledges receipt of the filing; (ii) Acknowledges receipt of the informational filing and requests further information; or (iii) Acknowledges receipt of the filing and notifies the railroad, for good cause, that the filing will be considered as a petition for approval as set forth in paragraph (d) of this section, and requests such further information as may be required to initiate action on the petition. Examples of good cause, any one of which is sufficient, include: the PSP describes a product with unique architectural concepts; the PSP describes a product that uses design or safety assurance concepts considered outside existing accepted practices (*see* Appendix C); and the PSP describes a locomotive-borne product that commingles safety-critical train control processing functions with locomotive operational functions. In addition, good cause would include any instance where the PSP or PSP amendment does not appear to support its safety claim of satisfaction of the performance standard, after FRA has requested further information as provided in (c)(2)(ii) of this section.

FRA estimates that it will request further information in approximately two (2) instances under the above requirement. It is estimated that each additional document will be approximately 100 pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page. Thus, it is estimated that it will take approximately 800 hours to complete the additional document and send it to FRA. Total annual burden for this requirement is 1,600 hours.

Respondent Universe:

6 railroads

Burden time per response:

800 hours

Frequency of Response: On occasion
Annual number of Responses: 2 data calls/additional documents
Annual Burden: 1,600 hours

Calculation: 2 data calls x 800 hrs. = 1,600 hours

(d) The following procedures apply to PSPs and PSP amendments which require submission of a petition for approval: (1) *Petitions for approval involving prior FRA consultation.* (i) The railroad may file a Notice of Product Development with the Associate Administrator for Safety not less than 30 days prior to the end of the system design review phase of product development and 180 days prior to planned implementation, inviting FRA to participate in the design review process and receive periodic briefings and updates as needed to follow the course of product development. At a minimum, the Notice of Product Development must contain a summary description of the product to be developed and a brief description of goals for improved safety.

The burden for this requirement is included under § 236.913(b) above.

(ii) Within 15 days of receipt of the Notice of Product Development, the Associate Administrator for Safety either acknowledges receipt, or acknowledges and requests more information.

FRA estimates that it will request more information in approximately six (6) cases under the above requirement. It is estimated that each additional document will be approximately two (2) pages long and that it will take approximately eight (8) hours to gather all the necessary information and complete each page. Thus, it will take approximately 16 hours to complete the additional documents and sent them to FRA. Total annual burden for this requirement is 96 hours.

Respondent Universe:

6 railroads

Burden time per response:

16

hours

Frequency of Response: On occasion
Annual number of Responses: 6 data calls/additional documents
Annual Burden: 96 hours

Calculation: 6 data calls x 16 hrs. = 96 hours

(iii) If FRA concludes the Notice of Product Development contains sufficient information, the Associate Administrator for Safety determines the extent and nature of the assessment and review necessary for final product approval. FRA may convene a technical consultation as necessary to discuss issues related to the design and planned development of the product.

FRA estimates that it will convene approximately six (6) technical consultations under this requirement where information will be communicated verbally by railroad representatives. FRA will most likely meet with railroad signal supervisors and product consultants. It is estimated each consultation will take approximately 120 hours. Total annual burden for this requirement is 600 hours.

Respondent Universe:

6 railroads

Burden time per response:

120 hours

Frequency of Response: On occasion
Annual number of Responses: 6 consultations
Annual Burden: 720 hours

Calculation: 6 consultations x 120 hrs. = 720 hours

(iv) Not less than 60 days prior to use of the product in revenue service, the railroad must file with the Associate Administrator for Safety a petition for final approval.

FRA estimates that it will receive approximately six (6) petitions for final approval under

this requirement. It is estimated that it each final approval petition will be approximately two (2) pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page. Thus, it will take approximately 16 hours to complete each petition for final approval and send it to FRA. Total annual burden for this requirement is 96 hours.

Respondent Universe:

6 railroads

Burden time per response:

16 hours

Frequency of Response: On occasion
Annual number of Responses: 6 final approval petitions
Annual Burden: 96 hours
Calculation: 6 final approval petitions x 16 hrs. = 96 hours

(v) Within 30 days of receipt of the petition for final approval, the Associate Administrator for Safety either acknowledges receipt or acknowledges receipt and requests more information.

The burden for this requirement is included under that of § 236.913(d)(ii) above. Consequently, there is no additional burden associated with this requirement.

(vi) Whenever possible, FRA acts on the petition for final approval within 60 days of its filing by either granting it or denying it. If FRA neither grants nor denies the petition for approval within 60 days, FRA advises the petitioner of the projected time for decision and conducts any further consultations or inquiries necessary to decide the matter.

The burden for this requirement is included under that of § 236.913(d)(iii) above. Consequently, there is no additional burden associated with this requirement.

(2) *Other petitions for approval*. The following procedures apply to petitions for approval of PSPs which do not involve prior FRA consultation as described in paragraph (d)(1) of this section: (i) Not less than 180 days prior to use of a product in revenue service, the railroad must file with the Associate Administrator for Safety a petition for approval.

FRA estimates that it will receive zero (0) petitions for special approval under the above

requirement. Consequently, there is no additional burden associated with this requirement.

(ii) Within 60 days of receipt of the petition for approval, FRA either acknowledges receipt, or acknowledges receipt and requests more information.

Since FRA estimates that it will receive zero (0) petitions for special approval under the above requirement, there will be no need for the agency to request any additional information. Consequently, there is no additional burden associated with this requirement.

(e) Interested parties may submit to FRA information and views pertinent to FRA's consideration of an informational filing or petition for approval. FRA considers comments to the extent practicable within the periods set forth in this section. In a proceeding consolidated with a proceeding under part 235 of this title, FRA considers all comments received.

FRA estimates that it will receive approximately seven (7) comments pertaining to informational filings and petitions for approval. The comments will most likely be written and take the form of a letter and document. It is estimated that each comment will be approximately 30 pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page. Thus, it is estimated that it will take approximately 240 hours to complete each comment and send it to FRA. Total annual burden for this requirement is 1,680 hours.

Respondent Universe:	Public/railroad community
Burden time per response:	240 hours
Frequency of Response:	On occasion
Annual number of Responses:	7 comments/letters
Annual Burden:	1,680 hours

Calculation: 7 comments/letters x 240 hrs. = 1,680 hours

(f) A railroad may file a petition for approval prior to completion of field testing of the product. The petition for approval should additionally include information sufficient for FRA to arrange monitoring of the tests. The Associate Administrator for Safety may approve a petition for approval contingent upon successful completion of the test program contained in the PSP or hold the petition for approval pending completion of the tests.

The burden for this requirement is included in §236.913(b) above.

(h) The PSP must be supported by an independent third party assessment of the product when FRA concludes it is necessary based on consideration of the following factors: (i) Those factors listed in subparagraphs (g)(2)(i) through (g)(2)(vii) of this section; (ii) The sufficiency of the assessment or audit previously conducted at the election of a supplier or railroad; and (iii) Whether applicable requirements of subparts A through G of this Part are satisfied.

As used in this section, "independent third party" means a technically competent entity responsible to and compensated by the railroad (or an association on behalf of one or more railroads) that is independent of the supplier of the product. An entity that is owned or controlled by the supplier, that is under common ownership or control with the supplier, or that is otherwise involved in the development of the product is not considered "independent" within the meaning of this section. FRA may maintain a roster of recognized technically competent entities as a service to railroads selecting reviewers under this section; however, a railroad is not limited to entities currently listed on any such roster.

The third party assessment must, at a minimum, consist of the activities and result in the production of documentation meeting the requirements of Appendix D to this part. However, when requiring an assessment pursuant to this section, FRA specifies any requirements in Appendix D to this part which the agency has determined are not relevant to its concerns and, therefore, need not be included in the assessment. The railroad must make the final assessment report available to FRA upon request.

FRA estimates that approximately one (1) third party assessment will be completed under this requirement. It is estimated that each third party assessment will be approximately 100 pages long and that it will take a five (5) person team approximately 1,040 hours (208 hours each x 5 persons) to complete each page of the assessment. Thus, it is estimated that it will take approximately 104,000 hours to complete the assessment and produce the necessary report. Total annual burden for this requirement is 104,000 hours.

Respondent Universe:

6

railroads

Burden time per response:

104,000 hours

Frequency of Response: One-time
Annual number of Responses: 1 third party final assessment report
Annual Burden: 104,000 hours

Calculation: 1 third party assessment report x 104,000 hrs. = 104,000 hours

(i) A railroad may submit an amendment to a PSP at any time in the same manner as the initial PSP. Notwithstanding the otherwise applicable requirements found in this section and § 236.915, changes affecting the safety-critical functionality of a product may be made prior to the submission and approval of the PSP amendment as necessary in order to mitigate risk.

FRA estimates that approximately 15 amendments will be submitted under the above requirement. It is estimated that each amendment will be approximately 20 pages long and that it will take approximately eight (8) hours per page to gather the necessary information, complete the amendment, and submit it to FRA. Total annual burden for this requirement is 2,400 hours.

Respondent Universe:

6 railroads

Burden time per response:

160 hours

Frequency of Response: On occasion
Annual number of Responses: 15 amendments
Annual Burden: 2,400 hours

Calculation: 15 amendments x 160 hrs. = 2,400 hours

(j) Field testing of a product may be conducted prior to approval of a PSP by the submission of an informational filing by a railroad. The FRA will arrange to monitor the tests based on the information provided in the filing, which must include: (i) A complete description of the product; (ii) An operational concepts document; (iii) A complete description of the specific test procedures, including the measures that will be taken to protect trains and on-track equipment; (iv) An analysis of the applicability of the requirements of subparts A-G of this part to the product that will not apply during testing; (v) The date testing will begin; (vi) The location of the testing; and (vii) A description of any effect the testing will have on the current method of operation. FRA may impose such additional conditions on this testing as may be necessary for the safety of train operations. Exemptions from regulations other than those contained in this part must be requested through waiver procedures in part 211 of this chapter.

FRA estimates that approximately six (6) field testing documents/informational filings will be submitted under the above requirement. It is estimated that each field testing/information filing document will be approximately 400 pages long and that it will take approximately eight (8) hours per page to gather the necessary information and complete the field testing document. Thus, it will take approximately 3,200 hours to complete each field testing document, and submit it to FRA. Total annual burden for this requirement is 19,200 hours.

Respondent Universe: 6 railroads

Burden time per response: 3,200 hours

Frequency of Response: On occasion
Annual number of Responses: 6 field testing/informational filing docs.
Annual Burden: 19,200 hours

Calculation: 6 field testing/informational filing docs. x 3,200 hrs. = 19,200 hours

The burden for this entire requirement is 166,960 hours (25,600 + 11,568 + 1,600 + 96 + 720 + 96 + 1,680 + 104,000 + 2,400 + 19,200).

§ 236.917 - Retention of records.

(a) The railroad must maintain at a designated office on the railroad: (i) For the life cycle of the product, adequate documentation to demonstrate that the PSP meets the safety requirements of the railroad's RSPP and applicable standards in this subpart, including the risk assessment; (ii) An Operations and Maintenance Manual, pursuant to § 236.919; and (iii) Training records pursuant to § 236.923(b). Results of inspections and tests specified in the PSP must be recorded as prescribed in § 236.110. Contractors of the railroad must maintain at a designated office training records pursuant to §236.923(b).

The burden for the first part of this requirement is included under that of § 236.905 and that of § 236.907. Consequently, there is no additional burden associated with this part of the above requirement.

The burden for the second part of this requirement is included under that of § 236.919. Consequently, there is no additional burden associated with this part of the above requirement.
Regarding the results of inspections and test specified in the PSP and that must be recorded as prescribed in § 236.110, FRA estimates that three documents or records will be kept by railroads/contractors under this part of the above requirement. The first document/record will involve testing approximately 5,000 locomotives four times a year, which will then take eight (8) hours to complete. Thus, the first document will take approximately 160,000 hours to complete (5,000 locomotives x 4 times p/yr. x 8 hours). The second document will involve testing approximately 5,000 locomotives two times a year, which will take approximately 16 hours to complete. Thus, the second document will also take approximately 160,000 hours to complete (5,000 locomotives x 2 times p/yr. x 16 hours). The third document will involve 500 miles of track and 10 way devices that will take eight (8) hours to test/record. Thus, the third document will take approximately 40,000 hours to complete (500 track miles x 10 way devices x 8 hours). Total annual burden for this requirement is 360,000 hours.

Respondent Universe:	6 railroads
Burden time per response:	160,000 hours/1 60,000

hours/4
0,000
hours

Frequency of Response: On occasion
Annual number of Responses: 3 documents/records
Annual Burden: 360,000 hours

Calculation: 1 document/record x 160,000 hrs. + 1 document/record x 160,000 hrs. + 1 document/record x 40,000 hrs. = 360,000 hours

(b) After the product is placed in service, the railroad must maintain a database of all safety-relevant hazards as set forth in the PSP and those that had not been previously identified in the PSP. If the frequency of the safety-relevant hazards exceeds the threshold set forth in the PSP (see § 236.907(a)(6)), then the railroad must: (1) Report the inconsistency in writing (by mail, facsimile, e-mail, or hand delivery to the Director, Office of Safety Assurance and Compliance, Federal Railroad Administration, 1200 New Jersey Ave., S.E., Mail Stop 25, Washington, D.C. 20590), within 15 days of discovery. Documents that are hand-delivered must not be enclosed in an envelope; (2) Take prompt countermeasures to reduce the frequency of the safety-relevant hazard(s) below the threshold set forth in the PSP; and (3) Provide a final report to the FRA Director, Office of Safety Assurance and Compliance, on the results of the analysis and countermeasures taken to reduce the frequency of the safety-relevant hazard(s) below the threshold set forth in the PSP when the problem is resolved.

FRA estimates that it will receive approximately one (1) report under the above requirement. It is estimated that it will take approximately eight (8) hours to prepare the initial report, another eight (8) hours to take prompt mitigating countermeasures, another 80 hours to fix the problems/eliminate the safety-relevant hazards, and eight (8) more hours to prepare the final report. Total annual burden for this requirement is 104 hours.

Respondent Universe:

6
railroads

Burden time per response:

104
hours

Frequency of Response: On occasion
Annual number of Responses: 1 report

Annual Burden: 104 hours

Calculation: 1 report x 104 hrs. = 104 hours

The burden for this entire requirement is 360,104 hours (360,000 + 104).

§ 236.919 - Operations and Maintenance Manual

(a) The railroad must catalog and maintain all documents as specified in the PSP for the installation, maintenance, repair, modification, inspection, and testing of the product and have them in one Operations and Maintenance Manual, readily available to persons required to perform such tasks and for inspection by FRA and FRA certified state inspectors.

The required Operations and Maintenance Manual (OMM) will initially be included in the PSP. However, FRA estimates that six (6) OMM updates will be completed each year and that it will take approximately 40 hours to gather the necessary information and complete each update. Total annual burden for this part of the requirement is 240 hours.

Respondent Universe: 6 railroads

Burden time per response: 40 hours

Frequency of Response: On occasion
Annual number of Responses: 6 OMM updates
Annual Burden: 240 hours

Calculation: 6 OMM updates x 40 hrs. = 240 hours

(b) Plans required for proper maintenance, repair, inspection, and testing of safety-critical products must be adequate in detail and must be made available for inspection by FRA and FRA certified state inspectors where such products are deployed or maintained. They

must identify all software versions, revisions, and revision dates. Plans must be legible and correct.

This is a one-time requirement that involves another set of tests. FRA estimates that approximately six (6) plans for proper maintenance, repair, inspection, and testing of safety-critical products will be completed under the above requirement. Each plan will involve testing 5,000 locomotives four times a year, which will take approximately eight (8) hours to complete each test. Thus, it will take approximately 160,000 hours to gather the necessary information and complete each plan (5,000 locomotives x 4 times p/yr. x 8 hours). However, since this is a one-time requirement and since OMB approvals are usually for three years, the burden of 160,000 hours must be divided by three to be an accurate annual burden. Thus, it is estimated that it will take railroads approximately 53,335 hours (rounded off) complete each plan. Total annual burden for this requirement is 320,010 hours.

Respondent Universe:

6 railroads

Burden time per response:

53,335 hours

Frequency of Response: On occasion
Annual number of Responses: 6 plans
Annual Burden: 320,010 hours

Calculation: 6 plans x 53,335 hrs. = 320,010 hours

(c) Hardware, software, and firmware revisions must be documented in the Operations and Maintenance Manual according to the railroad's configuration management control plan and any additional configuration/revision control measures specified in the PSP.

FRA estimates that approximately six (6) hardware, software, and firmware revisions/modifications will be documented in the Operation and Maintenance Manual under the above requirement. It is estimated that it will take each railroad approximately 6,440 hours to prepare and document each hardware, software, and firmware revision. Total annual burden for this requirement is 38,640 hours.

Respondent Universe:

6
railroads

Burden time per response:

6,440
hours

Frequency of Response: On occasion
Annual number of Responses: 6 revisions (hardware/software/firmware)
Annual Burden: 38,640 hours

Calculation: 6 revisions x 6,440 hrs. = 38,640 hours

(d) Safety-critical components, including spare equipment, must be positively identified, handled, replaced, and repaired in accordance with the procedures specified in the PSP.

The burden for this requirement is included under that of § 236.919(c) above. Consequently, there is no additional burden associated with this requirement.

The burden for this entire requirement is 358,890 hours (240 + 320,010 + 38,640).

TRAINING

§ 236.921-Training and qualification program, general

(a) Employers must establish and implement training and qualification programs for products subject to this subpart. These programs must meet the minimum requirements set forth in the PSP and in §§ 236.923 through 236.929 as appropriate, for the following personnel: (1) Persons whose duties include installing, maintaining, repairing, modifying, inspecting, and testing safety-critical elements of the railroad's products, including central office, wayside, or onboard subsystems; (2) Persons who dispatch train operations (issue or communicate any mandatory directive that is executed or enforced, or is intended to be executed or enforced, by a train control system subject to this subpart); (3) Persons who operate trains or serve as a train or engine crew member subject to instruction and testing under part 217 of this chapter, on a train operating in territory where a train control system subject to this subpart is in use; (4) Roadway workers whose duties require them to know

and understand how a train control system affects their safety and how to avoid interfering with its proper functioning; and (5) The direct supervisors of persons listed in paragraphs (a)(1) through (a)(4) of this section.

FRA estimates that approximately six (6) railroads will establish and implement training and qualifications programs for products subject to this part. It is estimated that it will take approximately 400 hours to establish and implement training programs under this provision. Total annual burden for this requirement is 2,000 hours.

Respondent Universe:

6 railroads

Burden time per response:

400 hours

Frequency of Response: On occasion
Annual number of Responses: 6 training programs
Annual Burden: 2,400 hours

Calculation: 6 training programs x 400 hrs. = 2,400 hours

(b) The employer's program must provide training for persons who perform the functions described in paragraph (a) of this section to ensure that they have the necessary knowledge and skills to effectively complete their duties related to processor-based signal and train control equipment.

The burden for roadway workers training program is included in OMB No. 2130-0539. Consequently, there is no additional burden associated with this part of the requirement.

Railroad signalmen and dispatchers will also have to be trained. FRA estimates that there are approximately 300 signalmen and 20 dispatchers who will be trained under this requirement. It is estimated that these employees will be trained in groups or classes and that there will be approximately 20 railroad employees in each training session/class. Consequently, there will be approximately 15 training sessions/classes for signalmen and one (1) training session/class for dispatchers. Each class will be conducted or lead by a consultant. FRA further estimates that each training session/class for signalmen will last approximately 40 hours and that each training session/class for dispatchers will last approximately 20 hours. Total annual burden for this requirement is 12,400 hours.

Respondent Universe:

6 railroads

Burden time per response:

40 hours/2

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Frequency of Response: On occasion
Annual number of Responses: 300 trained signalmen + 20 trained dispatchers
Annual Burden: 12,400 hours

Calculation: 300 trained signalmen x 40 hrs. + 20 trained dispatchers x 20 hrs. = 12,400 hours

The burden for this entire requirement is 14,800 hours (2,400 + 12,400).

§ 236.923 - Task Analysis and basic requirements

(a) As part of the program required by § 236.921, the railroad must, at a minimum: (1) Identify the specific goals of the training program with regard to the target population (craft, experience level, scope of work, etc.), task(s) and desired success rate; (2) Based on a formal task analysis, identify the installation, maintenance, repair, modification, inspection, testing, and operating tasks that must be performed on the railroad's products. This includes the development of failure scenarios and the actions expected under such scenarios; (3) Develop written procedures for the performance of the tasks identified; (4) Identify the additional knowledge, skills, and abilities above those required for basic job performance necessary to perform each task; (5) Develop a training curriculum that includes classroom, simulator, computer-based, hands-on, or other formally structured training designed to impart the knowledge, skills, and abilities identified as necessary to perform each task; (6) Prior to assignment of related tasks, require all persons mentioned in § 236.921(a) to successfully complete a training curriculum and pass an examination that covers the product and appropriate rules and tasks for which they are responsible (however, such persons may perform such tasks under the direct on-site supervision of a qualified person prior to completing such training and passing the examination); (7) Require periodic refresher training at intervals specified in the PSP that includes classroom, simulator, computer-based, hands-on, or other formally structured training and testing, except with respect to basic skills for which proficiency is known to remain high as a result of frequent repetition of the task; and (8) Conduct regular and periodic

evaluations of the effectiveness of the training program specified in § 236.923(a)(1) verifying the adequacy of the training material and its validity with respect to current railroads products and operations.

FRA estimates that approximately six (6) documents will be completed that meet all the above requirements. It is estimated that each document will take approximately 720 hours to complete. Total annual burden for this requirement is 4,320 hours.

Respondent Universe:

6 railroads

Burden time per response:

720 hours

Frequency of Response: On occasion
Annual number of Responses: 6 documents
Annual Burden: 4,320 hours

Calculation: 6 documents x 720 hrs. = 4,320 hours

(b) Employer's must retain records which designate persons who are qualified under this section until new designations are recorded or for at least one year after such persons leave applicable service. These records must be kept in a designated location and available for inspection and replication by FRA and FRA-certified State inspectors.

The burden for this requirement regarding roadway workers is also included in OMB No. 2130-0539. Consequently, there is no additional burden associated with this part of the requirement.

FRA estimates that approximately 350 records designating other qualified persons (30 managers + 300 signalmen + 20 dispatchers) will be kept under this requirement. It is estimated that it will take approximately 10 minutes to prepare each record. Total annual burden for this requirement is 58 hours.

Respondent Universe: 6 railroads

Burden time per response: 10 minutes

Frequency of Response: On occasion

Annual number of Responses: 350 records
Annual Burden: 58 hours

Calculation: 350 records x 10 min. = 58 hours

The burden for this entire requirement is 4,378 hours (4,320 + 58).

§ 236.925 - Training specific to control office personnel

Any person responsible for issuing or communicating mandatory directives in territory where products are or will be in use must be trained in the following areas, as applicable: (a) Instructions concerning the interface between the computer-aided dispatching system and the train control system, with respect to the safe movement of trains and other on-track equipment; (b) Railroad operating rules applicable to the train control system, including provision for movement and protection of roadway workers, unequipped trains, trains with failed or cut out train control onboard systems, and other on-track equipment; and (c) Instructions concerning control of trains and other on-track equipment in case the train control system fails, including periodic practical exercises or simulations and operational testing under part 217 of this chapter to ensure the continued capability of the personnel to provide for safe operations under the alternative method of operation.

The burden for this requirement, which refers to dispatchers, is included under § 236.921(b) above. Consequently, there is no additional burden associated with this requirement.

§ 236.927- Training specific to locomotive engineers and other operating personnel

Training provided under this subpart for any locomotive engineer or other person who participates in the operation of a train in train control territory must be defined in the PSP and the following elements must be addressed: (1) Familiarization with train control equipment onboard the locomotive and the functioning of that equipment as part of the system and in relation to other onboard systems under that person's control; (2) Any actions required of the onboard personnel to enable, or enter data to, the system, such as consist data, and the role of that function in the safe operation of the train; (3) Sequencing of interventions by the system, including pre-enforcement notification, enforcement notification, penalty application initiation, and post-penalty application procedures; (4) Railroad operating rules applicable to the train control system, including provisions for movement and protection of any unequipped trains, or trains with failed or cut out train control onboard systems and other on-track equipment; (5) Means to detect deviations from proper functioning of onboard train control equipment and instructions regarding the actions to be taken with respect to control of the train and notification of designated railroad personnel; and (6) Information needed to prevent unintentional interference with the proper functioning of onboard train control equipment.

The burden for this requirement is included under OMB No. 2130-0533, Qualifications for Locomotive Engineers. Consequently, there is no additional burden associated with this requirement.

(b) Training required under this subpart for a locomotive engineer, together with required records, must be integrated into the program of training required by part 240 of this chapter.

The burden for this requirement is included under OMB No. 2130-0533. Consequently, there is no additional burden associated with this requirement.

(c) The following special requirements apply in the event a train control system is used to effect full automatic operation of the train: (1) The PSP must identify all safety hazards to be mitigated by the locomotive engineer. (2) The PSP must address and describe the training required with provisions for the maintenance of skills proficiency. As a minimum, the training program must: (i) As described in § 236.923(a)(2), develop failure scenarios which incorporate the safety hazards identified in the PSP, including the return of train operations to a fully manual mode; (ii) Provide training, consistent with § 236.923(a), for safe train operations under all failure scenarios and identified safety hazards that affect train operations; (iii) Provide training, consistent with § 236.923(a), for safe train operations under manual control; and (iv) Consistent with § 236.923(a), ensure maintenance of manual train operating skills by requiring manual starting and stopping of the train for an appropriate number of trips and by one or more of the following methods: (A) Manual operation of a train for a 4-hour work period; (B) Simulated manual operation of a train for a minimum of four (4) hours in a Type I simulator as required; or (C) Other means as determined following consultation between the railroad and designated representatives of the affected employees and approved by the FRA. The PSP must designate the appropriate frequency when manual operation, starting, and stopping must be conducted, and the appropriate frequency of simulated manual operation.

The burden for this requirement is included under § 236.907 above. Consequently, there is no additional burden associated with this requirement.

§ 236.929 - Training specific to roadway workers

(a) Training required under this subpart for a roadway worker must be integrated into the program of instruction required under part 214, Subpart C of this chapter ("Roadway Worker Protection"), consistent with the task analysis requirements of § 236.923. This training must provide instruction for roadway workers who provide protection for themselves or roadway work groups.

(b)(1) Instruction for roadway workers must ensure an understanding of the role of

processor-based signal and train control equipment in establishing protection for roadway workers and their equipment; (2) Instruction for roadway workers must ensure recognition of processor-based signal and train control equipment on the wayside and an understanding of how to avoid interference with its proper functioning; (3) Instructions concerning the recognition of system failures and the provision of alternative methods of on-track safety in the case the train control system fails, including periodic practical exercises or simulations and operational testing under part 217 of this chapter to ensure the continued capability of roadway workers to be free from the danger of being struck by a moving train or other on-track equipment.

The burden for this requirement is included under OMB No. 2130-0539, Roadway Worker Protection. Consequently, there is no additional burden associated with this requirement.

The total burden for Part 234 and for Subparts A and H of Part 236 is 1,373,672 hours.

Subpart I – Positive Train Control Systems

§ 236.1001 - Purpose and scope.

(a) This subpart prescribes minimum, performance-based safety standards for PTC systems required by 49 U.S.C. § 20157, this subpart, or an FRA order including requirements to ensure that the development, functionality, architecture, installation, implementation, inspection, testing, operation, maintenance, repair, and modification of those PTC systems will achieve and maintain an acceptable level of safety. This subpart also prescribes standards to ensure that personnel working with, and affected by, safety-critical PTC system related products receive appropriate training and testing.

(b) Each railroad may prescribe additional or more stringent rules, and other special instructions, that are not inconsistent with this subpart.

FRA estimates that approximately three (3) railroads will develop additional or more stringent rules under the above requirement. It is estimated that it will take each railroad approximately 80 hours to develop and complete the additional or more stringent rules document. Total annual burden for this requirement is 240 hours.

Respondent Universe:

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Burden time per response: 80 hours

Frequency of Response: On occasion
Annual number of Responses: 3 rules
Annual Burden: 240 hours

Calculation: 3 additional or more stringent rules x 80 hrs. = 240 hours

(c) This subpart does not exempt a railroad from compliance with any requirement of subpart A through H of this part or parts 233, 234, and 235 of this chapter, unless: (1) it is otherwise explicitly excepted by this subpart; or (2) the applicable PTCSP, as defined under § 236.1003 and approved by FRA under § 236.1015 provides for such an exception per § 236.1013.

The burden for exceptions under the PTCSP is included under that § 236.1015. Consequently, there is no additional burden associated with this requirement.

Total burden for this entire requirement is 240 hours.

§ 236.1005 – Requirements for Positive Train Control Systems

(a) PTC system requirements. Each PTC system required to be installed under this subpart shall:

(1) reliably and functionally prevent: (i) train-to-train collisions—including collisions between trains operating over at-grade crossings of rail lines—where the risk associated

with such collisions is unacceptable in accordance with the table show in this section or alternative arrangements providing an equivalent level of safety as specified in an FRA approved PTCSP: (ii) overspeed derailments, including derailments related to railroad civil engineering speed restrictions, slow orders, and excessive speeds over switches and through turnouts; (iii) incursions into established work zone limits without first receiving appropriate authority and verification from the dispatcher or roadway worker in charge, as applicable and in accordance with part 214 of this chapter; and (iv) the movement of a train through a main line switch in the improper position as further described in paragraph (e) of this section.

(2) include safety-critical integration of all authorities and indications of a wayside or cab signal system, or other similar appliance, method, device, or system of equivalent safety, in a manner by which the PTC system shall provide associated warning and enforcement to the extent, and except as, described and justified in the FRA approved PTCDP or PTCSP, as applicable;

(3) as applicable, perform the additional functions specified in this subpart;

(4) provide an appropriate warning or enforcement when: (i) a derail or switch protecting access to the main line required by § 236.1007, or otherwise provided for in the applicable PTCSP, is not in its derailing or protecting position, respectively; (ii) an operational restriction is issued associated with a highway-rail grade crossing warning system malfunction as required by §§ 234.105, 234.106, or 234.107; (iii) an after-arrival mandatory directive has been issued and the train or trains to be waited on has not yet passed the location of the receiving train; (iv) any movable bridge within the route ahead is not in a position to allow permissive indication for a train movement pursuant to § 236.312; and (v) a hazard detector integrated into the PTC system that is required by paragraph (c) of this section, or otherwise provided for in the applicable PTCSP, detects an unsafe condition or transmits an alarm; and

(5) limit the speed of passenger and freight trains to 59 miles per hour and 49 miles per hour, respectively, in areas without broken rail detection or equivalent safeguards.

The burden associated with the PTCDP and the PTCSP is included under that of § 236.1013 and that of § 236.1015, respectively. Consequently, there is no additional burden associated with this requirement.

(b) PTC system installation. (1) After December 31, 2015, a PTC system certified under § 236.1015 shall be installed by the host railroad on each:

(i) main line over which is transported any quantity of poison- or toxic-by-inhalation (TIH) hazardous materials, as defined in §§ 171.8, 173.115 and 173.132 of this title;

(ii) main line used for regularly provided intercity or commuter passenger service, except as provided in § 236.1019; and

(iii) additional line of railroad as required by the applicable FRA approved PTCSP, this subpart, or an FRA order requiring installation of a PTC system.

(2) For the purposes of paragraph (b)(1)(i) of this section, the information necessary to determine whether a Class I railroad's track segment shall be equipped with a PTC system shall be determined and reported as follows:

(i) The traffic density threshold of 5 million gross tons shall be based upon calendar year 2008 gross tonnage.

(ii) The presence or absence of any quantity of TIH hazardous materials shall be determined by whether one or more cars containing such product(s) was transported over the line segment in calendar year 2008.

The burden associated with the PTCSP is included under that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(3) To the extent increases in freight rail traffic occur subsequent to calendar year 2008 that might affect the requirement to install a PTC system on any line not yet equipped, the railroad shall seek to amend its PTCIP by promptly filing a Request For Amendment (RFA) in accordance with § 236.1021. The following criteria apply:

(i) To the extent rail traffic exceeds 5 million gross tons in any year after 2008, the tonnage shall be calculated for the preceding two calendar years in determining whether a PTCIP amendment is required.

(ii) To the extent TIH traffic is carried on a line segment other than as authorized under paragraph (g) (temporary rerouting) of this section or as a result of a request for rail service routing or rerouting warranted under part 172 of this title, and if the line carries in excess of 5 million gross tons of rail traffic as determined under this paragraph. This does not apply when temporary rerouting is authorized in accordance with paragraph (g) of this section.

(iii) Once a railroad is notified by FRA that its RFA filed in accordance with this paragraph has been approved, the railroad must equip the line with the applicable PTC system by December 31, 2015, or within 24 months, whichever is later.

The burden associated with amendments to the PTCIP is included under that of § 236.1021. Consequently, there is no additional burden associated with this requirement.

(4) If a railroad has filed, and FRA has approved, its initial PTCIP, a railroad may file an RFA to request review of the requirement to install PTC on a line segment where a PTC system is required, but has not yet been installed, based upon changes in rail traffic such as reductions in total traffic volume or cessation of local Poisonous-by-Inhalation (PIH) service. Any such RFA shall be accompanied by estimated traffic projections for the next 5 years (e.g., as a result of planned rerouting, coordinations, location of new business on the line). Where the request involves prior or planned rerouting of PIH traffic, the railroad must provide a supporting analysis that takes into consideration the requirements of subpart I, part 172 of this title, including any railroad-specific and interline routing impacts. FRA may approve the RFA if FRA finds that it would be consistent with safety and in the public interest.

The burden associated with the PTCIP is included under that of § 236.1009, and the burden for Requests for Amendments (RFAs) is included under that § 236.1021. Consequently, there is no additional burden associated with this requirement.

(c) Hazard detectors. (1) All hazard detectors integrated into a signal or train control system on or after October 16, 2008, must be integrated into PTC systems required by this subpart; and their warnings shall be appropriately and timely enforced as described in the applicable PTCSP.

(2) The applicable PTCSP may provide for receipt and presentation to the locomotive engineer and other train crew of warnings from additional hazard detectors using the PTC data network, onboard displays, and audible alerts. If the PTCSP so provides, the action to be taken by the system and by the crew members shall be specified.
(3) The PTCDP (as applicable) and PTCSP for any service described in § 236.1007 to be conducted above 90 miles per hour shall include a hazard analysis describing the hazards relevant to the specific route(s) in question (e.g., potential for track obstruction due to events such as falling rock or undermining of the track structure due to high water or displacement of a bridge over navigable waters), the basis for decisions concerning hazard detectors provided, and the manner in which such additional hazard detectors will be interfaced with the PTC system.

The burden associated with the PTCDP is included under that of § 236.1013, and the burden associated with the PTCSP is included under that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(d) Event Recorders. (1) Each lead locomotive, as defined in part 229, of a train equipped and operating with a PTC system required by this subpart must be equipped with an operative event recorder, which shall:

(i) record safety-critical train control data routed to the locomotive engineer's display that the engineer is required to comply with;

(ii) specifically include text messages conveying mandatory directives and maximum authorized speeds; and

(iii) include the display format, content, and data retention duration requirements specified in the PTC safety plan (PTCSP) submitted and approved pursuant to this paragraph. If such train control data can be calibrated against other data required by this part, it may, at the election of the railroad, be retained in a separate memory module.

The burden associated with the PTCSP is included under that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(e) Switch Position. The following requirements apply with respect to determining proper switch position under this section. When a main line switch position is unknown or improperly aligned for a train's route in advance of the train's movement, the PTC system will provide warning of the condition associated with the following enforcement:

(1) A PTC system must enforce restricted speed over any switch: (i) where train movements are made with the benefit of the indications of a wayside or cab signal system or other similar appliance, method, device, or system of equivalent safety proposed to FRA and approved by the Associate Administrator in accordance with this part; and (ii) where wayside or cab signal system or other similar appliance, method, device, or system of equivalent safety requires the train to be operated at restricted speed.

(2) A PTC system must enforce a positive stop short of any main line switch, and any switch on a siding where the allowable speed is in excess of 20 miles per hour, if movement of the train over the switch: (i) is made without the benefit of the indications of a wayside or cab signal system or other similar appliance, method, device, or system of equivalent safety proposed to FRA and approved by the Associate Administrator in accordance with this part; or (ii) would create an unacceptable risk. Unacceptable risk includes conditions when traversing the switch, even at low speeds, could result in direct conflict with the movement of another train (including hand-operated crossover between main tracks and an adjoining siding or auxiliary track, or a hand-operated switch providing access to another subdivision or branch line, etc.)

(3) A PTC system required by this subpart shall be designed, installed, and maintained to perform the switch position detection and enforcement described in paragraphs (e)(1) and (e)(2) of this section, except as provided for and justified in the applicable, FRA approved PTCDP or PTCSP.

(4) The control circuit or electronic equivalent for any movement authorities over any switches, movable-point frogs, or derails shall be selected through circuit controller or functionally equivalent device operated directly by switch points, derail, or by switch locking mechanism, or through relay or electronic device controlled by such circuit controller or functionally equivalent device, for each switch, movable-point frog, or derail in the route governed. Circuits or electronic equivalent shall be arranged so that any movement authorities can only be provided when each switch, movable-point frog, or derail in the route governed is in proper position, and shall be in accordance with subparts A through G of this part unless it is otherwise provided in a PTCSP approved under this subpart.

The burden associated with wayside or cab signal systems or other similar appliances, methods, devices, or systems of equivalent safety proposed to FRA and approved by FRA is included under OMB No. 2130-0006. The burden associated with the PTCSP is included below under that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(g) Temporary rerouting. A train equipped with a PTC system as required by this subpart may be temporarily rerouted onto a track not equipped with a PTC system and a train not equipped with a PTC system may be temporarily rerouted onto a track equipped with a PTC system as required by this subpart in the following circumstances:

(1) Emergencies. In the event of an emergency—including conditions such as derailment, flood, fire, tornado, hurricane, or other similar circumstance outside of the railroad's control—that would prevent usage of the regularly used track if: (i) the rerouting is applicable only until the emergency condition ceases to exist and for no more than 14 consecutive calendar days, unless otherwise extended by approval of the Associate Administrator.

FRA estimates that there will be approximately 1,000 reroutes a year and that approximately five (5) percent or 50 of these reroutes will fall into the circumstance listed above. Thus, FRA estimates that it will receive approximately 50 requests to extend temporarily rerouted trains equipped with PTC systems on to a track not equipped with a PTC system or train not equipped with a PTC system temporarily rerouted onto a track equipped with a PTC system for more than 14 consecutive calendar days. It is estimated that it will take approximately eight (8) hours to gather the necessary information and complete the extension request and send it to FRA. Total annual burden for this requirement is 400 hours.

Respondent Universe:

railroads

Burden time per response: 8 hours

Frequency of Response: On occasion
Annual number of Responses: 50 extension requests
Annual Burden: 400 hours

Calculation: 50 extension requests x 8hrs. = 400 hours

(ii) the railroad provides written or telephonic notification to the applicable Regional Administrator of the information listed in paragraph (i) within one business day of the beginning of the rerouting made in accordance with this paragraph; and (iii) the conditions under paragraph (j) are followed.

FRA estimates that approximately 50 written or telephonic notifications to the applicable Regional Administrator of the information listed in paragraph (i) will be made under the above requirement. It is estimated that it will take approximately two (2) hours to complete each written or telephonic notification. Total annual burden for this requirement is 100 hours.

Respondent Universe: 30

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Burden time per response:

2 hours

Frequency of Response: On occasion
Annual number of Responses: 50 written or telephonic notifications
Annual Burden: 100 hours

Calculation: 50 written or telephonic notifications x 2 hrs. = 100 hours

(2) Planned Maintenance. In the event planned maintenance that would prevent usage of the regularly used if: (i) the maintenance period does not to exceed 30 days; (ii) a request is filed with the applicable Regional Administrator in accordance with paragraph (i) of this section no less than 10 days prior to the planned rerouting; and (iii) the conditions contained in paragraph (j) of this section are followed.

FRA estimates that approximately 95 temporary rerouting requests will be filed with the applicable Regional Administrator in accordance with paragraph (i) of this section. These will generally be in the form of written notifications. It is estimated that it will take approximately eight (8) hours to gather the necessary information and complete each rerouting request. Total annual burden for this requirement is 760 hours.

Respondent Universe:

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Burden time per response: 8 hours

Frequency of Response: On occasion
Annual number of Responses: 95 rerouting requests
Annual Burden: 760 hours

Calculation: 95 rerouting requests x 8 hrs. = 760 hours

(h) Rerouting requests. (1) For the purposes of paragraph (g)(2) of this section, the rerouting request shall be self-executing unless the applicable Regional Administrator responds with a notice disapproving of the rerouting or providing instructions to allow rerouting. Such instructions may include providing additional information to the Regional Administrator or Associate Administrator prior to the commencement of rerouting. Once the Regional Administrator responds with a notice under this paragraph, no rerouting may occur until the Regional Administrator or Associate Administrator provides his or her approval.

The burden for this requirement is included in that of § 236.1005(g)(1) above. Consequently, there is no additional burden associated with this requirement.

(2) In the event the temporary rerouting described in paragraph (g)(2) of this section is to exceed 30 days: (i) the railroad shall provide a request in accordance with paragraphs (i) and (j) of this section with the Associate Administrator no less than 10 business days prior to the planned rerouting; and (ii) the rerouting contemplated by this paragraph shall not commence until receipt of approval from the Associate Administrator.

FRA estimates that approximately 800 rerouting requests will be filed with the Associate Administrator no less than 10 business days prior to the planned rerouting. It is estimated that it will take approximately eight (8) hours to gather the necessary information and complete each rerouting request. Total annual burden for this requirement is 6,400 hours.

Respondent Universe:

30 railroads

Burden time per response:

8 hours

Frequency of Response: On occasion
Annual number of Responses: 800 rerouting requests
Annual Burden: 6,400 hours

Calculation: 800 rerouting requests x 8 hrs. = 6,400 hours

(i) Content of request. Each notice or request referenced in paragraph (g) must indicate: (1) the dates that such temporary rerouting will occur; (2) the number and types of trains that will be rerouted; (3) the location of the affected tracks; and (4) a description of the necessity for the temporary rerouting.

(j) Rerouting conditions. Rerouting of operations under paragraph (g) of this section may only occur if: (1) an absolute block is established in advance of each rerouted train movement; and (2) each rerouted train movement shall not exceed 59 miles per hour for passenger and 49 miles per hour for freight.

The burden for this requirement is included under that of 236.1005(g) above. Consequently, there is no additional burden associated with this requirement.

The total burden for this entire requirement is 7,660 hours (400 + 100 + 760 + 6,400).

§ 236.1006 – Requirements for Equipping Locomotives Operating in PTC Territory

(a) Except as provided in paragraph (b) of this section, each train operating on any line of railroad equipped with PTC shall be controlled by a locomotive equipped with on-board PTC apparatus that is fully operative and functioning in accord with the PTCSP approved under this subpart.

The burden associated with the PTCSP is included below under that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(b) Exceptions. (1) Prior to December 31, 2015, each train controlled by a locomotive not-equipped with an on-board PTC apparatus is permitted to operate.

(2) Prior to December 31, 2013, each train controlled by a locomotive equipped with an onboard PTC apparatus that is not fully operative is permitted only if:

(i) The subject locomotive failed initialization at the point of origin for the train or at the location where the locomotive was added to the train;

(ii) the railroad has included in its PTC Implementation Plan a system for identifying PTC reliability exceptions and responding with appropriate remedial actions, the railroad executes that plan, and the documentation for execution of the plan is currently available to FRA upon request; and

The burden associated with the PTCIP is included below under that of § 236.1009. Consequently, there is no additional burden associated with this requirement.

(iii) The percentage of controlling locomotives operating out of each railroad's initial terminals after receiving a failed initialization and over a track segment equipped with a PTC system, does not during each calendar month exceed: (A) 20 percent until December 31, 2011; (B) 15 percent from the end of the period in paragraph (A) to December 31, 2012; and (C) 10 percent from the end of the period in paragraph (B) to December 31, 2013.

(3) A train controlled by a locomotive with an onboard PTC apparatus that has failed en route is permitted to operate in accordance with § 236.1029.

(4) A train operated by a Class II or Class III railroad, including a tourist or excursion railroad, and controlled by a locomotive not equipped with an onboard PTC apparatus is permitted to operate on a PTC operated track segment: (i)That either: (A) Has no regularly scheduled intercity or passenger rail passenger transportation traffic; or (B) Has regularly scheduled intercity or passenger rail passenger transportation traffic and the applicable PTCIP permits the operation of a train operated by a Class II or III railroad and controlled by a locomotive not equipped with an onboard PTC apparatus;

The burden associated with the PTCIP is included below under that of § 236.1009. Consequently, there is no additional burden associated with this requirement.

(ii) Where operations are restricted to less than four such unequipped trains per day, whereas a train conducting a "turn" operation (e.g., moving to a point of interchange to drop off or pick up cars and returning to the track owned by a Class II or III railroad) is considered two trains for this purpose; and

(iii) Where each movement shall either (A) Not exceed 20 miles in length; or
(B) To the extent any movement exceeds 20 miles in length, such movement is not permitted without the controlling locomotive being equipped with an onboard PTC system after December 31, 2020, and each applicable Class II or III railroad shall report to FRA its progress in equipping each necessary locomotive with an onboard PTC apparatus to facilitate continuation of the movement. The progress reports shall be filed not later than December 31, 2017 and, if all necessary locomotives are not yet equipped, on December 31, 2019.

Over the next three years, FRA estimates that it will receive approximately 35 reports each year under the above requirement. It is estimated that it will take approximately 16 hours to gather the necessary information and to complete each report. Total annual burden for this requirement is 560 hours.

Respondent Universe:

35 railroads

Burden time per response:

16 hours

Frequency of Response:		On occasion
Annual number of Responses:	35 reports	
Annual Burden:		560 hours
Calculation:	35 reports x 16 hrs. = 560 hours	

(c) When a train movement is conducted under the exceptions described in paragraph (b)(4) of this section, that movement shall be made in accordance with § 236.1029.

Any burden associated with the above is included below under that of § 236.1029. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this entire requirement is 560 hours.

§ 236.1007 – Additional Requirements for High-Speed Service

(a) A PTC railroad that conducts passenger operations at or greater than 60 miles per hour or freight operations at or greater than 50 miles per hour shall have installed a PTC system including or working in concert with technology that includes all of the safety-critical functional attributes of a block signal system meeting the requirements of this part, including appropriate fouling circuits and broken rail detection (or equivalent safeguards).

(b) In addition to the requirements of paragraph (a), a host railroad that conducts a freight or passenger operation at more than 90 miles per hour shall: (1) have an approved PTCSP establishing that the system was designed and will be operated to meet the failsafe operation criteria described in Appendix C to this part; and (2) prevent unauthorized or unintended entry onto the main line from any track not equipped with a PTC system compliant with this subpart by placement of split-point derails or equivalent means integrated into the PTC system; and (3) comply with § 236.1029(c).

The burden associated with the PTCSP is included below under that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(c) In addition to the requirements of paragraphs (a) and (b) of this section, a host railroad that conducts a freight or passenger operation at more than 125 miles per hour shall have an approved PTCSP accompanied by a document ("HSR-125") establishing that the system: (1) will be operated at a level of safety comparable to that achieved over the five (5) year period prior to the submission of the PTCSP by other train control systems that perform PTC functions required by this subpart, and which have been utilized on high-speed rail systems with similar technical and operational characteristics in the United States or in foreign service, provided that the use of foreign service data must be approved by the Associate Administrator before submittal of the PTCSP; and (2) has been designed

to detect incursions into the right-of-way, including incidents involving motor vehicles diverting from adjacent roads and bridges, where conditions warrant.

FRA estimates that approximately 11 approved PTCSPs will be accompanied by "HSR-125" documents under the above requirement. It is estimated that each document will be approximately 200 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page. Thus, it is estimated that it will take approximately 3,200 hours to complete each "HSR-125" document. Total annual burden for this requirement is 35,200 hours.

Respondent Universe:

30 railroads

Burden time per response:

3,200 hours

Frequency of Response:	On occasion
Annual number of Responses:	11 HSR-125 documents
Annual Burden:	35,200 hours
Calculation:	11 HSR-125 documents x 3,200 hrs. = 35,200 hours

Additionally, FRA estimates that approximately two (2) requests to use foreign service data before submittal of the PTCSP will be made under the above requirement. It is

estimated that each document will be approximately 1,000 pages long, and that it will take approximately eight (8) hours to gather the necessary information and complete each page. Thus, it is estimated that it will take approximately 8,000 hours to gather the foreign service data and complete each request. Total annual burden for this requirement is 16,000 hours.

Respondent Universe:

30 railroads

Burden time per response:

8,000 hours

Frequency of Response: On occasion
Annual number of Responses: 2 data requests
Annual Burden: 16,000 hours

Calculation: 2 data requests x 8,000 hrs. = 16,000 hours

(d) In addition to the requirements of paragraphs (a) through (c), a host railroad that conducts a freight or passenger operation at more than 150 miles per hour, which is governed by a Rule of Particular Applicability, shall have an approved PTCSP accompanied by a HSR-125 developed as part of an overall system safety plan approved by the Associate Administrator.

FRA estimates that approximately 11 PTCSPs be accompanied by "HSR-125" documents will be submitted under the above requirement. It is estimated that each document will be approximately 250 pages long and that it will take approximately 16 hours to gather the

necessary information and complete each page of the PTCSP and accompanying "HSR-125 document." Thus, it is estimated that it will take approximately 4,000 hours to complete each PTCSP and accompanying "HSR-125 document." Total annual burden for this requirement is 44,000 hours.

Respondent Universe:

30 railroads

Burden time per response:

4,000 hours

Frequency of Response:	On occasion
Annual number of Responses:	11 PTCSPs w/HSR-125 documents
Annual Burden:	44,000 hours

Calculation: 11 PTCSPs w/HSR-125 documents x 4,000 hrs. = 44,000 hours

Total annual burden for this entire requirement is 95,200 hours (35,200 + 16,000 + 44,000).

§ 236.1009 – Procedural Requirements

(a) PTC Implementation Plan (PTCIP). (1) By April 16, 2010, each host railroad that is required to implement and operate a PTC system in accordance with § 236.1005(b) shall develop and submit in accordance with § 236.1011(a) a PTCIP for implementing a PTC system required under § 236.1005. Filing of the PTCIP shall not exempt the required filings of a PTCSP, PTCDP, or Type Approval.

FRA estimates that approximately 30 PTCIPs will be submitted under the above requirement. It is estimated that each PTCIP will be approximately 100 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the PTCIP. Thus, it is estimated that it will take approximately 1,600 hours to complete each PTCIP. However, since this is a one-time requirement and since OMB approvals are for three years, this number needs to be divided by three to accurately calculate the annual burden (1,600 hours divided by three = 535 hours (rounded off)). Total annual burden for this requirement is 16,050 hours.

Respondent Universe:

30 railroads

Burden time per response:

535 hours

Frequency of Response: One-time
Annual number of Responses: 30 PTCIPs
Annual Burden: 16,050 hours

Calculation: 30 PTCIPs x 535 hrs. = 16,050 hours

The burden associated with the PTCSP is included below under that of § 236.1015. The burden associated with the PTCDP and Type Approval is included under that of § 236.1013. Consequently, there is no additional burden associated with this requirement.

(2) After April 16, 2010, a host railroad shall file: (i) a PTCIP if it becomes a host railroad of a main line track; or (ii) a request for amendment ("RFA") of its current and approved PTCIP in accordance with § 236.1021 if it intends to: (A) initiate a new category of service (i.e., passenger or freight); or (B) add, subtract, or otherwise materially modify one or more lines of railroad for which installation of a PTC system is required.

FRA estimates that there will be approximately one (1) new rail start each year that will require a PTCIP and that approximately 15 requests for amendments (RFAs) will be submitted under the above requirement. It is estimated that the PTCIP will be approximately 100 pages long and that it will take approximately 16 hours to gather the necessary information and complete the PTCIP. It is also estimated that each RFA will be approximately 20 pages long and that it will take approximately 16 hours to gather the necessary information and complete each RFA page. Thus, it is estimated that it will take approximately 1,600 hours to complete the PTCIP and 320 hours to complete each RFA. However, again the PTCIP is a one-time requirement and since OMB approvals are normally for three years, the 1,600 hour estimate needs to be divided by three, to accurately calculate the annual burden (535 hours rounded off). Total annual burden for this requirement is 5,335 hours.

Respondent Universe:

30 railroads

Burden time per response:

535 hours; 320

hours

Frequency of Response: One-time; On occasion

Annual number of Responses: 1 PTCIP + 15 RFAs
Annual Burden: 5,335 hours

Calculation: 1 PTCIP x 535 hrs. + 15 RFAs x 320 hrs. = 5,335 hours

(3) If the host railroad is a freight railroad, and the subject trackage would require installation and operation of a PTC system in accordance with §§ 236.1005(b)(2) or (b)(3), then a PTCIP required to be filed in accordance with paragraph (a)(1) or (a)(2) of this section must be jointly filed with each entity providing regularly scheduled intercity or commuter rail passenger transportation over that subject trackage.

FRA estimates that there will be zero (0) jointly filed PTCIPs under the above requirement. Consequently, there is no additional burden associated with this requirement.

If railroads are unable to jointly file a PTCIP in accordance with paragraphs (a)(1) and (a)(3) of this section, then they each shall: (i) separately file a PTCIP in accordance with paragraph (a)(1).

FRA estimates that there will be zero (0) PTCIPs filed under the above requirement. Consequently, there is no additional burden associated with this requirement.

(ii) notify the Associate Administrator that the subject railroads were unable to agree on a PTCIP to be jointly filed;

FRA estimates that approximately 30 notifications to the Associate Administrator will be sent under the above requirement. It is estimated that each notification will be approximately two (2) pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the notification. Thus, it is estimated that it will take approximately 32 hours to complete each notification. Total annual burden for this requirement is 960 hours.

Respondent Universe:

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Burden time per response: 32 hours

Frequency of Response: On occasion
Annual number of Responses: 30 notifications
Annual Burden: 960 hours

Calculation: 30 notifications x 32 hrs. = 960 hours

(iii) provide the Associate Administrator with a comprehensive list of all issues not in agreement between the railroads that would prevent the subject railroads from jointly filing the PTCIP.

FRA estimates that approximately 30 comprehensive lists of issues will be provided to the Associate Administrator under the above requirement. It is estimated that each list will be approximately five (5) pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the list. Thus, it is estimated that it will take approximately 80 hours to complete each list. Total annual burden for this requirement is 2,400 hours.

Respondent Universe:

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Burden time per response: 80 hours

Frequency of Response: On occasion
Annual number of Responses: 30 comprehensive lists
Annual Burden: 2,400 hours

Calculation: 30 comprehensive lists x 80 hrs. = 2,400 hours

(iv) And confer with the Associate Administrator to develop a PTCIP mutually acceptable to all subject railroads.

FRA estimates that approximately three (3) conference calls with the Associate Administrator will be take place under the above requirement. It is estimated that each conference call will involve a group of 10 railroads and that each call will take approximately 30 minutes to complete. Total annual burden for this requirement is two (2) hours.

Respondent Universe: 30 railroads

Burden time per response: 30 minutes
Frequency of Response: On occasion
Annual number of Responses: 3 conferences
Annual Burden: 2 hours

Calculation: 3 conference calls x 30 min. = 2 hours

(a) Type Approval. A host railroad, or one or more system suppliers and one or more host railroads, shall file prior to or simultaneously with the filing made in accordance with paragraph (a) of this section:

(1) an unmodified Type Approval previously issued by the Associate Administrator in accordance with § 236.1013 or § 236.1031(b) with its associated docket number.

FRA estimates that approximately 10 railroads will be affected and thus 10 unmodified previously issued Type Approvals will be filed with FRA under the above requirement. It is estimated that each Type Approval will be approximately one (1) page long and that it will take approximately eight (8) hours to gather the necessary information and complete the document. Thus, it is estimated that it will take approximately eight (8) hours to file each Type Approval document. Total annual burden for this requirement is 80 hours.

Respondent Universe: 30 railroads
Burden time per response: 8 hours
Frequency of Response: On occasion
Annual number of Responses: 10 Type Approval documents
Annual Burden: 80 hours

Calculation: 10 Type Approval documents x 8 hrs. = 80 hours

(2) a PTCDP requesting a Type Approval for: (i) a PTC system that does not have a Type Approval; or (ii) a PTC system with a previously issued Type Approval that requires one or more variances.

FRA estimates that approximately 20 cover letters accompanying 20 Type Approvals and five (5) PTCDPs will be completed under the above requirement. It is estimated that each cover letter will be approximately one (1) page long; that each Type approval will be one (1) page long; and that each PTCDP will be approximately 400 pages long. It is estimated that each cover letter and Type Approval will take approximately eight (8) hours to gather the necessary information and complete each page of that document and that each PTCDP

will take approximately 16 hours to gather the necessary information and complete each page of the PTCDP. Thus, it is estimated that it will take approximately eight (8) hours, eight (8) hours, and 6,400 hours, respectively, to complete each document. Total annual burden for this requirement is 32,320 hours.

Respondent Universe:

30 railroads

Burden time per response:

8 hours; 8 hours; 6,400 hours

Frequency of Response:	On occasion
Annual number of Responses:	20 cover letters + 20 Type Approvals + 5 PTCDPs
Annual Burden:	32,320 hours

Calculation: 20 cover letters x 8 hrs. + 20 Type Approvals x 8 hrs. + 5 PTCDPs x 6,400 hrs. = 32,320 hours

(3) a PTCSP subject to the conditions set forth in paragraph (c) of this section, with or without a Type Approval; or (4) a document attesting that a Type Approval is not necessary since the host railroad has no territory for which a PTC system is required under this subpart.

(c) PTCSP and PTC system certification. The following apply to PTCSP and PTC system certifications.

(1) A PTC System Certification for a PTC system may be obtained by submitting an acceptable PTCSP. If the PTC system is the subject of a Type Approval, the safety case elements contained in the PTCDP may be incorporated by reference into the PTCSP, subject to finalization of the human factors analysis contained in the PTCDP.

(2) Each PTCSP requirement under § 236.1015 shall be supported by information and analysis sufficient to establish that the requirements of this subpart have been satisfied.

The burden associated with the PTCSP is included below under that of § 236.1015. The burden associated with the PTCDP and Type Approval is included under that of § 236.1013. Consequently, there is no additional burden associated with this requirement.

(3) If the Associate Administrator finds that the PTCSP and supporting documentation support a finding that the system complies with this part, the Associate Administrator may approve the PTCSP. If the Associate Administrator approves the PTCSP, the railroad shall receive PTC System Certification for the subject PTC system and shall implement the PTC system according to the PTCSP.

(4) A required PTC system shall not: (i) be used in service until it receives from FRA a PTC System Certification; and (ii) receive a PTC System Certification unless FRA receives and approves an applicable: (A) PTCIP and PTCSP; or (B) Request for Expedited Certification (REC) as defined by § 236.1031(a).

The burden associated with the PTCIP is included above. The burden associated with the PTCSP is included below under that of § 236.1015. The burden associated with the Request for Expedited Certification (REC) is included under that of § 236.1031(a). Consequently, there is no additional burden associated with this requirement.

(d) Plan contents. (1) No PTCIP shall receive approval unless it complies with § 236.1011. No railroad shall receive a Type Approval or PTC System Certification unless the applicable PTCDP or PTCSP, respectively, comply with §§ 236.1013 and 236.1015, respectively.

(2) All materials filed in accordance with this subpart must be in the English language, or have been translated into English and attested as true and correct.

FRA estimates that approximately one (1) document filed in accordance with this subpart will not be in English and will need to be translated into English and certified as true and correct. It is estimated that each translated document will be approximately 1,000 pages long (including cover letter) and that it will take approximately eight (8) hours to gather the necessary information/translate the document. Thus, it is estimated that it will take approximately 8,000 hours to complete the document. Total annual burden for this

requirement is 8,000 hours.

Respondent Universe:	30 railroads	
Burden time per response:	8,000 hours	
Frequency of Response:		On occasion
Annual number of Responses:	1 document	
Annual Burden:	8,000 hours	

Calculation: 1 document x 8,000 hrs. = 8,000 hours

(3) Each filing referenced in this section may include a request for full or partial confidentiality in accordance with § 209.11 of this chapter. If confidentiality is requested as to a portion of any applicable document, then in addition to the filing requirements under § 209.11 of this chapter, the person filing the document shall also file a copy of the original un-redacted document, marked to indicate which portions are redacted in the document's confidential version without obscuring the original document's contents.

FRA estimates that approximately 30 cover letters and 30 requests for confidentiality with a copy of the original un-redacted document properly marked will be made under the above requirement. It is estimated that each cover letter will be approximately one (1) page long and take approximately eight (8) hours to gather the necessary information and complete; and that each request for confidentiality will be approximately 200 pages long and that it will take approximately four (4) to properly mark/redact each page to complete the document. Thus, it is estimated that it will take eight (8) hours and 800 hours, respectively, to complete the cover letter and confidentiality request. Total annual burden for this requirement is 24,240 hours.

Respondent Universe:

30 railroads

Burden time per response:

8 hours; 800 hours

Frequency of Response: On occasion
Annual number of Responses: 30 cover letters + 30 requests for confidentiality
Annual Burden: 24,240 hours

Calculation: 30 cover letters x 8 hrs. + 30 confidentiality requests x 800 hrs. = 24,240 hours

(e) Supporting documentation and information.

(1) Issuance of a Type Approval or PTC System Certification is contingent upon FRA's confidence in the implementation and operation of the subject PTC system. This confidence may be based on FRA-monitored field testing or an independent assessment performed in accordance with § 236.1035 or § 236.1017, respectively.

The burden associated with FRA-monitored field testing or independent assessments is included under that of § 236.1035 and that of § 236.1017, respectively. Consequently, there is no additional burden associated with this requirement.

(2) Upon request by FRA, the railroad requesting a Type Approval or PTC System Certification must engage in field testing or independent assessment performed in accordance with § 236.1035 or § 236.1017, respectively, to support assertions made in any of the plans submitted under this subpart. These assertions include any of the plans' content requirements under this subpart.

This requirement is above and beyond the earlier requirement. As a result, FRA estimates that all 30 railroads will be affected. It is estimated that these 30 railroads will each conduct approximately five (5) sets of field tests (150 tests in all); that each field test document will be approximately 100 pages long; and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the field test. Thus, it is estimated that each field test will take approximately 800 hours to complete.

Further, FRA estimates that approximately two (2) independent assessments, in accordance with § 236.1035 or § 236.1017, will be conducted under the above requirement; that each independent assessment document will be approximately 100 pages long; and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the assessment. Thus, it is estimated that each independent assessment will also take approximately 800 hours to complete. Total annual burden for this requirement is 121,600 hours.

Respondent Universe:

30 railroads

Burden time per response:

800 hours

Frequency of Response: On occasion
Annual number of Responses: 150 field tests + 2 independent assessments
Annual Burden: 121,600 hours

Calculation: 150 field tests x 800 hrs. + 2 independent assessments x 800 hrs. = 121,600 hours

(g) FRA access. The Associate Administrator, or that person's designated representatives, shall be afforded reasonable access to monitor, test, and inspect processes, procedures, facilities, documents, records, design and testing materials, artifacts, training materials and programs, and any other information used in the design, development, manufacture, test, implementation, and operation of the system, as well as interview any personnel: (1) associated with a PTC system for which a Type Approval or PTC System Certification has been requested or provided; and (2) to determine whether a railroad has been in compliance with this subpart.

FRA estimates that approximately 60 interviews of personnel associated with a PTC system for which a Type Approval or PTC System Certification has been requested/provided will be conducted by FRA representatives under the above requirement. It is estimated that each interview will take approximately 30 minutes to complete. Total annual burden for this requirement is 30 hours.

Respondent Universe:

30 railroads

Burden time per response: 30 minutes

Frequency of Response: On occasion
Annual number of Responses: 60 interviews
Annual Burden: 30 hours

Calculation: 60 interviews x 30 min. = 30 hours

(h) Foreign regulatory entity verification. Information that has been certified under the auspices of a foreign regulatory entity recognized by the Associate Administrator may, at the Associate Administrator's sole discretion, be accepted as independently Verified and Validated and used to support each railroad's development of the PTCSP.

The burden for this requirement is included under that of § 236.10009(d)(2) above. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this entire requirement is 211,017 hours (16,050 + 5,335 + 960 + 2,400 + 2 + 80 + 32,320 + 8,000 + 24,240 + 121,600 + 30).

§ 236.1011 – PTC IP Content Requirements

(a) Contents. A PTCIP filed pursuant to this subpart shall, at a minimum, describe: (1) the technology that will be employed; (2) how the PTC railroad intends to comply with § 236.1009(c); (3) how the PTC system will provide for interoperability of the system between the host and all tenant railroads on the lines required to be equipped with PTC systems under this subpart and: (i) include copies of relevant provisions of any agreements, executed by all applicable railroads, in place to achieve interoperability;

(ii) list all technologies used to obtain interoperability; and (iii) identify any railroads with respect to which interoperability agreements or compatible technology have not been achieved as of the time the plan is filed, the practical obstacles that were encountered that prevented resolution, and the further steps planned to overcome those obstacles; (4) how, to the extent practical, the PTC system will be implemented to address areas of greater risk to the public and railroad employees before areas of lesser risk; (5) the sequence and schedule in which line segments will be equipped and the basis for those decisions, and shall at a minimum address the following risk factors by line segment: (i) Segment traffic characteristics such as typical annual passenger and freight train volume and volume of poison- or toxic-by-inhalation (PIH or TIH) shipments (loads, residue); (ii) Segment operational characteristics such as current method of operation (including presence or absence of a block signal system), number of tracks, and maximum allowable train speeds, including planned modifications; and (iii) Route attributes bearing on risk, including ruling grades and extreme curvature; (6) the following information relating to rolling stock: (i) what rolling stock will be equipped with PTC technology; (ii) the schedule to equip that rolling stock by December 31, 2015; and (iii) unless the tenant railroad is filing its own PTCIP, the host railroad's PTCIP shall: (A) attest that the host railroad has made a formal written request to each tenant railroad requesting identification of each rolling stock to be PTC system equipped and the date each will be equipped; and (B) include each tenant railroad's response to the host railroad's written request made in accordance with paragraph (a)(6)(iii)(A) of this section; (7) the number of wayside devices required for each line segment and the installation schedule to complete wayside equipment installation by December 31, 2015; (8) which track segments the railroad considers mainline and non-mainline track. If the PTCIP includes a Mainline Track Exclusion Addendum (MTEA), as defined by § 236.1019, the PTCIP should identify the tracks included in the MTEA as main line track with a reference to the MTEA; (9) to the extent the railroad determines that risk-based prioritization required by paragraph (a)(4) of this section is not practical, the basis for this determination.

(b) Additional Class I PTC Requirements. (1) Each Class I railroad shall include in its PTCIP a strategy for full deployment of its PTC system, describing the criteria that it will apply in identifying additional rail lines on its own network, and rail lines of entities that it controls or engages in joint operations with, for which full or partial deployment of PTC technologies is appropriate, beyond those required to be equipped under this subpart. Such criteria shall include consideration of the policies established by 49 U.S.C. § 20156 (railroad safety risk reduction program), and regulations issued thereunder, as well as non-safety business benefits that may accrue.

(2) In the Technology Implementation Plan of its Risk Reduction Program, when first required to be filed in accordance with 49 U.S.C. § 20156 and any regulation promulgated thereunder, a specification of rail lines selected for full or partial deployment of PTC under the criteria identified in its PTCIP.

(3) Nothing in this paragraph shall be construed to create an expectation or requirement than additional rail lines beyond those required to be equipped by this subpart must be equipped or that such lines will be equipped during the period of primary implementation ending December 31, 2015.

(4) As used in this paragraph "partial implementation" of a PTC system refers to use, pursuant to subpart H of this part, of technology embedded in PTC systems that does not employ all of the functionalities required by this subpart.

(c) FRA review. Within 90 days of receipt of a PTCIP, the Associate Administrator will approve or disapprove of the plan and notify in writing the affected railroad or other entity. If the PTCIP is not approved, the notification will include the plan's deficiencies. Within 30 days of receipt of that notification, the railroad or other entity that submitted the plan shall correct all deficiencies and resubmit the plan in accordance with § 236.1009 and paragraph (a) of this section, as applicable.

(d) Subpart H. A railroad that elects to install a PTC system when not required to do so may elect to proceed under this subpart or under subpart H.

(e) Upon receipt of a PTCIP, PTCDP, or PTCSP, FRA posts on its public website notice of receipt and reference to the public docket in which a copy of the filing has been placed. FRA may consider any public comment on each document to the extent practicable within the time allowed by the law and without delaying implementation of PTC systems.

The burden associated with PTCIPs is included under that of § 236.1009 above. The burden associated with MTEAs is included under that of§ 236.1019. At this time, no rule has yet been developed concerning a Risk Reduction Program and filing of a Technology Implementation Plan (TIP). Consequently, there is no additional burden associated with the above requirements.

Public Comment. Concerning item (e) above and public comments on PTCIPs, PTCDPs, and PTCSPs submitted to the agency, FRA estimates that there will be approximately seven (7) interested groups and that each group will review PTCIPs, PCTDPs, and PTCSPs. Thus, it is estimated that 21 reviews of these documents will be conducted by these groups and that, because of the complexity of the documents, each review will take approximately 143 hours to complete. Further, FRA estimates that it will receive 20 comments per PTCIP, PTCDP, and PTCSP, or a total of approximately 60 comments from these groups. It is estimated that each comment will take approximately eight (8) hours to complete. Total annual burden for this requirement is 3,483 hours.

Respondent Universe:

7 interested groups

Burden time per response: 143 hours; 8 hours

Frequency of Response:	On occasion
Annual number of Responses:	21 reviews + 60 public comments
Annual Burden:	3,483 hours

Calculation: 21 reviews x 143 hrs. + 60 public comments x 8 hrs. = 3,483 hours

Total annual burden for this entire requirement is 3,483 hours.

§ 236.1013 – PTCDP Content Requirements and Type Approval

(a) For a PTC system to obtain a Type Approval from FRA, the PTCDP shall be filed in accordance with § 236.1009 and shall include: (1) A complete description of the PTC system, including a list of all PTC system components and their physical relationships in the subsystem or system; (2) A description of the railroad operation or categories of operations on which the PTC system is designed to be used, including train movement density (passenger, freight), operating speeds, track characteristics, and railroad operating rules; (3) An operational concepts document, including a list with complete descriptions of all functions which the PTC system will perform to enhance or preserve safety; (4) A

document describing the manner in which the PTC architecture satisfies safety requirements; (5)A description of the safety assurance concepts that are to be used for system development, including an explanation of the design principles and assumptions; (6) A preliminary human factors analysis, including a complete description of all human-machine interfaces and the impact of interoperability requirements on the same; (7) An analysis of the applicability to the PTC system of the requirements of subparts A-G of this part that may no longer apply or are satisfied by the PTC system using an alternative method, and a complete explanation of the manner in which those requirements are otherwise fulfilled; (8) A description of the necessary security measures for the system; (9) A description of target safety levels (e.g., MTTHE for major subsystems as defined in subpart H), including requirements for system availability and a description of all backup methods of operation and any critical assumptions associated with the target levels; (10) A complete description of how the PTC system will enforce authorities and signal indications; (11) A description of the deviation required under § 236.1029(c), if applicable; and (12) A complete description of how the PTC system will appropriate and timely enforce all integrated hazard detectors in accordance with § 236.1005(c)(3), if applicable.

(b) If the Associate Administrator finds that the system described in the PTCDP would satisfy the requirements for PTC systems under this subpart and that the applicant has made a reasonable showing that a system built to the stated requirements would achieve the level of safety mandated for such a system under § 236.1015, the Associate Administrator may grant a numbered Type Approval for the system.

(c) Each Type Approval shall be valid for a period of five (5) years, subject to automatic and indefinite extension provided that at least one PTC System Certification using the subject PTC system has been issued within that period and not revoked.
(d) A PTCSP submitted under this subpart may reference and utilize in accordance with this subpart any Type Approval previously issued by the Associate Administrator to any railroad, provided that the railroad: (1) maintains a continually updated PTCPVL pursuant to § 236.1023; (2) provides the applicable licensing information.

(e) A railroad submitting a PTCDP under this subpart must show that the supplier from which they are procuring the PTC system has established and can maintain a quality control system for PTC system design and manufacturing acceptable to the Associate Administrator.

(f) The Associate Administrator may prescribe special conditions, amendments, and restrictions to any Type Approval as necessary for safety.

The burden for this requirement is included under that of § 236.1009 above and that of § 236.1023 below. Consequently, there is no additional burden associated with this requirement.

§ 236.1015 – PTCSP Content Requirements and PTC System Certification

(a) Before placing a PTC system required under this part in service, the host railroad must submit to FRA a PTCSP and receive a PTC System Certification. If the Associate Administrator finds that the PTCSP and supporting documentation support a finding that the system complies with this part, the Associate Administrator approves the PTCSP and issues a PTC System Certification. Receipt of a PTC System Certification affirms that the PTC system has been reviewed and approved by FRA in accordance with, and meets the requirements of, this part.

(b) A PTCSP submitted in accordance with this subpart must: (1) Include the applicable FRA approved PTCIP and, if applicable, the PTCDP and Type Approval; (2) (i) Specifically and rigorously document each variance, including the significance of each variance between the PTC system and its applicable operating conditions as described in the applicable PTCIP and any applicable PTCDP from that as described in the PTCSP, and attest that are no other such variances; or (ii) Attest that there are no variances between the PTC system and its applicable operating conditions as described in the applicable PTCIP and any applicable PTCDP from that as described in the PTCSP; and (3) Attest that the system was otherwise built in accordance with the applicable PTCDP and PTCSP and achieves the level of safety represented therein.

(c) A PTCSP shall include the same information required for a PTCDP under § 236.1013(a). If a PTCDP has been filed and approved prior to filing of the PTCSP, PTCSP may incorporate the PTCDP by reference, with the exception that a final human factors analysis shall be provided. The PTCSP must contain the following additional elements:

(1) A hazard log consisting of a comprehensive description of all safety-relevant hazards not previously addressed by the vendor to be addressed during the life cycle of the PTC system, including maximum threshold limits for each hazard (for unidentified hazards, the threshold shall be exceeded at one occurrence); (2) A risk assessment of the as-built PTC system described; (3) A hazard mitigation analysis, including a complete and comprehensive description of each hazard and the mitigation techniques used; (4) A complete description of the safety assessment and Verification and Validation processes applied to the PTC system, their results, and whether these processes address the safety principles described in Appendix C to this part directly, using other safety criteria, or not at all; (5) A complete description of the railroad's training plan for railroad and contractor employees and supervisors necessary to ensure safe and proper installation, implementation, operation, maintenance, repair, inspection, testing, and modification of the PTC system; (6) A complete description of the specific procedures and test equipment necessary to ensure the safe and proper installation, implementation, operation, maintenance, repair, inspection, testing, and modification of the PTC system on the

railroad and establish safety-critical hazards are appropriately mitigated. These procedures, including calibration requirements, shall be consistent with or explain deviations from the equipment manufacturer's recommendations; (7) A complete description of any additional warning to be placed in the Operations and Maintenance Manual in the same manner specified in § 236.919 and all warning labels to be placed on equipment as necessary to ensure safety; (8) A complete description of the configuration or revision control measures designed to ensure that the railroad or its contractor does not adversely affect the safety-functional requirements and that safety-critical hazard mitigation processes are not compromised as a result of any such change; (9) A complete description of all initial implementation testing procedures necessary to establish that safety-functional requirements are met and safety-critical hazards are appropriately mitigated; (10)A complete description of all post-implementation testing (validation) and monitoring procedures, including the intervals necessary to establish that safety-functional requirements, safety-critical hazard mitigation processes, and safety-critical tolerances are not compromised over time, through use, or after maintenance (adjustment, repair, or replacement) is performed; (11) A complete description of each record necessary to ensure the safety of the system that is associated with periodic maintenance, inspections, tests, adjustments, repairs, or replacements, and the system's resulting conditions, including records of component failures resulting in safety-relevant hazards (see § 236.1033); (12) A safety analysis to determine whether, when the system is in operation, any risk remains of an unintended incursion into a roadway work zone due to human error. If the analysis reveals any such risk, the PTCDP and PTCSP shall describe how that risk will be mitigated; (13) A more detailed description of any alternative arrangements as already provided under § 236.1011(a)(10); (14) A complete description of how the PTC system will enforce authorities and signal indications, unless already completely provided for in the PTCDP; (15) A description of how the PTCSP complies with § 236.1019(e), if applicable; (16) A description of the deviation required under § 236.1029(c), if applicable and unless already completely provided for in the PTCDP; (17) A complete description of how the PTC system will appropriate and timely enforce all integrated hazard detectors in accordance with § 236.1005; (18) An emergency and planned maintenance temporary rerouting plan indicating how operations on the subject PTC system will take advantage of the benefits provided under § 236.1005(g)-(k); and (19) Any alternative arrangements for each rail at-grade crossing not adhering to the table under § 236.1005(a)(1)(i).

The burden for the above requirements is included under that of (d)(1), (2), and (3) below. Consequently, there is no additional burden associated with this requirement.

(d) The following additional requirements apply to:

(1) Non-vital overlay. A PTC system proposed as an overlay on the existing method of operation and not built in accordance with the safety assurance principles set forth in Appendix C of this part must, to the satisfaction of the Associate Administrator, be shown to: (i) Reliably execute the functions set forth in § 236.1005; (ii) Obtain at least 80 percent

reduction of the risk associated with accidents preventable by the functions set forth in § 236.1005, when all effects of the change associated with the PTC system are taken into account. The supporting risk assessment shall evaluate all intended changes in railroad operations coincident with the introduction of the new system; and (iii) Maintain a level of safety for each subsequent system modification that is equal to or greater than the level of safety for the previous PTC systems.

FRA estimates that it will receive approximately two (2) PTCSPs, which will include the required supporting risk assessments, under the above requirement. It is estimated that each PTCSP will be approximately 1,000 pages long and that it will take approximately 16 hours per page to gather the necessary information and complete each page of the document. Thus, it is estimated that it will take approximately 16,000 hours to complete each PTCSP. Total annual burden for this requirement is 32,000 hours.

Respondent Universe: 30 railroads

Burden time per response: 16,000 hours

Frequency of Response: On occasion
Annual number of Responses: 2 PTCSPs
Annual Burden: 32,000 hours

Calculation: 2 PTCSPs x 16,000 hrs. = 32,000 hours

(2) Vital overlay. A PTC system proposed on a newly constructed track or as an overlay on the existing method of operation and is built in accordance with the safety assurance principles set forth in Appendix C of this part must, to the satisfaction of the Associate Administrator, be shown to: (i) Reliably execute the functions set forth in § 236.1005; and

(ii) Have sufficient documentation to demonstrate that the PTC system, as built, fulfills the safety assurance principles set forth in Appendix C of this part. The supporting risk assessment may be abbreviated as that term is used in subpart H of this part.

FRA estimates that it will receive approximately 16 PTCSPs, which will include supporting risk assessments, under the above requirement. The system complexity is much greater here than with non-vital overlays above. As a result, it is estimated that each PTCSP will be approximately 1,400 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the document. Thus, it is estimated that it will take approximately 22,400 hours to complete each PTCSP. Total annual burden for this requirement is 358,400 hours.

Respondent Universe: 30 railroads

Burden time per response: 22,400 hours

Frequency of Response: On occasion
Annual number of Responses: 16 PTCSPs
Annual Burden: 358,400 hours
Calculation: 16 PTCSPs x 22,400 hrs. = 358,400 hours

(3) Stand-alone. A PTC system proposed on a newly constructed track, an existing track for which no signal system exists, as a replacement for an existing signal or train control system, or to otherwise intend to replace or materially modify the existing method of operation, must: (i) Demonstrate to reliably execute the functions required by § 236.1005; and (ii) Have a PTCSP establishing, with a high degree of confidence, that the system will not introduce new hazards that have not been mitigated. The supporting risk assessment shall evaluate all intended changes in railroad operations in relation to the introduction of

the new system and shall examine in detail the direct and indirect effects of all changes in the method of operations.

FRA estimates that it will receive approximately 10 PTCSPs, which will include the required supporting risk assessments, under the above requirement. It is estimated that each PTCSP will be approximately 2,000 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the document. Thus, it is estimated that it will take approximately 32,000 hours to complete each PTCSP. Total annual burden for this requirement is 320,000 hours.

Respondent Universe:

30 railroads

Burden time per response:

32,000 hours

Frequency of Response: On occasion
Annual number of Responses: 10 PTCSPs
Annual Burden: 320,000 hours

Calculation: 10 PTCSPs x 32,000 hrs. = 320,000 hours

(4) Mixed systems. If a PTC system combining overlay, stand-alone, vital, or non-vital characteristics is proposed, the railroad shall confer with the Associate Administrator regarding appropriate structuring of the safety case and analysis.

FRA estimates that approximately three (3) sit-down conferences with the Associate Administrator will be held under the above requirement. It is estimated that each conference will include two railroads (and FRA representatives) and be held over two eight hour days. Thus, it is estimated that each conference will take approximately 32

hours (2 RRs x 2 days x 8 hrs p/day) to complete. Total annual burden for this requirement is 96 hours.

Respondent Universe: 30 railroads

Burden time per response: 32 hours

Frequency of Response: On occasion
Annual number of Responses: 3 conferences
Annual Burden: 96 hours

Calculation: 3 conferences x 32 hrs. = 96 hours

Additionally, FRA estimates that it will receive approximately two (2) PTCSPs that include the appropriate structure of the safety case and analysis resulting from the above conferences. It is estimated that each PTCSP will be approximately 1,800 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the PTCSP. Thus, it is estimated that each PTCSP will take approximately 28,800 hours to complete. Total annual burden for this requirement is 57,600 hours.

Respondent Universe: 30 ra

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Burden time per response: 28,800 hours

Frequency of Response: On occasion
Annual number of Responses: 2 PTCSPs
Annual Burden: 57,600 hours

Calculation: 2 PTCSPs x 28,800 hrs. = 57,600 hours

(e) When determining whether the PTCSP fulfills the requirements under paragraph (d) of this section, the Associate Administrator may consider all available evidence concerning the reliability and availability of the proposed system and any and all safety consequences of the proposed changes. In any case where the PTCSP lacks data regarding safety impacts of the proposed changes, the Associate Administrator may request the necessary data from the applicant. If the requested data is not provided, the Associate Administrator may find that potential hazards could or will arise.

In approximately 15 cases, FRA estimates that the Associate Administrator will request additional PTCSP data and it will be provided under the above requirement. It is estimated that each document will be approximately 200 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the requested document. Thus, it is estimated that it will take approximately 3,200 hours to complete each requested document. Total annual burden for this requirement is 48,000 hours.

Respondent Universe: 30 r a i l

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Burden time per response: 3,200 hours

Frequency of Response: On occasion
Annual number of Responses: 15 additional requested documents
Annual Burden: 48,000 hours

Calculation: 15 additional requested documents x 3,200 hrs. = 48,000 hours

(f) If a PTCSP applies to a system designed to replace an existing certified PTC system, the PTCSP will be approved provided that the PTCSP establishes with a high degree of confidence that the new system will provide a level of safety not less than the level of safety provided by the system to be replaced.

FRA estimates that it will receive approximately 15 PTCSPs under the above requirement. It is estimated that each PTCSP will be approximately 200 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the PTCSP. Thus, it is estimated that it will take approximately 3,200 hours to complete each PTCSP. Total annual burden for this requirement is 48,000 hours.

Respondent Universe:

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Burden time per response:

3,200 hours

Frequency of Response: On occasion
Annual number of Responses: 15 PTCSPs
Annual Burden: 48,000 hours

Calculation: 15 PTCSPs x 3,200 hrs. = 48,000 hours

(g) When reviewing the issue of the potential data errors (for example, errors arising from data supplied from other business systems needed to execute the braking algorithm, survey data needed for location determination, or mandatory directives issued through the computer-aided dispatching system), the PTCSP must include a careful identification of each of the risks and a discussion of each applicable mitigation. In an appropriate case, such as a case in which the residual risk after mitigation is substantial or the underlying method of operation will be significantly altered, the Associate Administrator may require submission of a quantitative risk assessment addressing these potential errors.

The burden for this requirement is included under that § 236.1015(e) above. Consequently, there is no additional burden associated with this requirement.

Additionally, FRA estimates that it will receive approximately 15 non-quantitative risk assessments with the necessary information under the above requirement. It is estimated that each non-quantitative risk assessment will be approximately 200 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the non-quantitative risk assessment. Thus, it is estimated that it will take approximately 3,200 hours to complete each non-quantitative risk assessment. Total annual burden for this requirement is 48,000 hours.

Respondent Universe:

30 railroad

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Burden time per response: 3,200 hours

Frequency of Response: On occasion
Annual number of Responses: 15 non-quantitative risk assessments
Annual Burden: 48,000 hours

Calculation: 15 non-quantitative risk assessments x 3,200 min. = 48,000 hours Total annual burden for this entire requirement is 912,096 hours (32,000 + 358,400 + 320,000 + 96 + 57,600 + 48,000 + 48,000 + 48,000).

§ 236.1017 – Independent Third Party Verification and Validation

(a) The PTCSP must be supported by an independent third-party assessment when the Associate Administrator concludes that it is necessary based upon the same criteria set forth in § 236.913 of this chapter, with the exception that consideration of the methodology used in the risk assessment (§ 236.913(g)(2)(vii)) shall apply only to the extent that a comparative risk assessment was required. To the extent practicable, FRA makes this determination not later than review of the PTCIP and the accompanying PTCDP or PTCSP. If an independent assessment is required, the assessment may apply to the entire system or a designated portion of the system.

In approximately one (1) case, FRA estimates that the Associate Administrator will determine an independent third party assessment is necessary and that it will be provided to the agency. It is estimated that the third party assessment will be approximately 500 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the third party risk assessment. Thus, it is estimated that it will take approximately 8,000 hours to complete each third party assessment. Total annual burden for this requirement is 8,000 hours.

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Burden time per response: 8,000 hours

Frequency of Response: On occasion
Annual number of Responses: 1 third party assessment
Annual Burden: 8,000 hours

Calculation: 1 third party assessment x 8,000 hrs. = 8,000 hours

(b) If a PTC system is to undergo an independent assessment in accordance with this section, it may submit to the Associate Administrator a written request that FRA confirm whether a particular entity would be considered an independent third party pursuant to this section. The request should include supporting information in accordance with paragraph (c) of this section. FRA may request further information to make a determination or provide its determination in writing.

(c) As used in this section, "independent third party" means a technically competent entity responsible to and compensated by the railroad (or an association on behalf of one or more railroads) that is independent of the PTC system supplier and vendor. An entity that is owned or controlled by the supplier or vendor, that is under common ownership or control with the supplier or vendor, or that is otherwise involved in the development of the PTC system is not considered "independent" within the meaning of this section.

FRA estimates that it will receive approximately one (1) written request with supporting information regarding independent third parties under the above requirement. It is estimated that each written request will be approximately one (1) page long and that it will take approximately eight (8) hours to complete each page of the written request. Total annual burden for this requirement is eight (8) hours.

Respondent Universe:

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Burden time per response: 8 hours

Frequency of Response: On occasion
Annual number of Responses: 1 written request
Annual Burden: 8 hours

Calculation: 1 written request x 8 hrs. = 8 hours

Additionally, in one (1) case, FRA estimates that it will request further information to make a determination or provide its determination in writing under the above requirement. It is estimated that each additional information document will be approximately 10 pages long and that it will take approximately 16 hours to complete each page of the additional information document. Thus, it is estimated that it will take approximately 160 hours to complete each additional information document. Total annual burden for this requirement is 160 hours.

Respondent Universe:

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Burden time per response: 160 hours

Frequency of Response: On occasion

Annual number of Responses: 1 additional information document
Annual Burden: 160 hours

Calculation: 1 additional information document x 160 hrs. = 160 hours

(d) The independent third party assessment must, at a minimum, consist of the activities and result in the production of documentation meeting the requirements of Appendix F to this part, unless excepted by this part or by FRA order or waiver..

FRA estimates that it will receive approximately one (1) waiver request under the above requirement. It is estimated that each waiver request will be approximately 10 pages long and that it will take approximately 16 hours to complete each page of the additional information document. Thus, it is estimated that it will take approximately 160 hours to complete each waiver request. Total annual burden for this requirement is 160 hours.

Respondent Universe:

30 railroads

Burden time per response:

160 hours

Frequency of Response: On occasion
Annual number of Responses: 1 waiver request
Annual Burden: 160 hours

Calculation: 1 waiver request x 160 hrs. = 160 hours

(e) Information provided that has been certified under the auspices of a foreign railroad regulatory entity recognized by the Associate Administrator may, at the Associate Administrator's discretion, be accepted as having been independently verified.

FRA estimates that it will receive approximately one (1) request to accept information certified under the auspices of a foreign railroad regulatory entity as having been independently verified under the above requirement. It is estimated that each request will be approximately two (2) pages long and that it will take approximately 16 hours to complete each page of the request. Thus, it is estimated that it will take approximately 32 hours to complete each request. Total annual burden for this requirement is 32 hours.

Respondent Universe:	30 railroads
Burden time per response:	32 hours
Frequency of Response:	On occasion
Annual number of Responses:	1 request to accept certified information from a foreign RR regulatory entity
Annual Burden:	32 hours
Calculation:	1 requests to accept foreign certified info. x 32 hrs. = 32 hours

Total annual burden for this entire requirement is 8,360 hours (8,000 + 8 + 160 + 160 + 32).

§ 236.1019 – Main Line Track Exceptions

(a) Scope and procedure. This section pertains exclusively to exceptions from the rule that trackage over which scheduled intercity and commuter passenger service is provided is considered main line track requiring installation of a PTC system. One or more intercity

or commuter passenger railroads, or freight railroads conducting joint passenger and freight operation over the same segment of track may file a main line track exclusion addendum ("MTEA") to its PTCIP requesting to designate track as not main line subject to the condition that such trackage may not be trackage otherwise required to be equipped (e.g., because of tonnage and PIH traffic) and to the further conditions set forth in paragraphs (b) and (c) of this section. No track shall be designated as yard or terminal unless it is identified in a MTEA that is part of an FRA approved PTCIP.

FRA estimates that approximately 30 MTEAs will be filed with the agency under the above requirement. It is estimated that each MTEA will be approximately 10 pages long and that it will take approximately 16 hours to complete each page of the MTEA. Thus, it is estimated that it will take approximately 160 hours to complete each MTEA. Total annual burden for this requirement is 4,800 hours.

Respondent Universe: 30 railroads

Burden time per response: 160 hours

Frequency of Response: On occasion
Annual number of Responses: 30 MTEAs
Annual Burden: 4,800 hours

Calculation: 30 MTEAs 160 hrs. = 4,800 hours

(b) Passenger terminal exception. FRA will consider an exception in the case of trackage used exclusively as yard or terminal tracks by or in support of regularly scheduled intercity or commuter passenger service where the MTEA describes in detail the physical boundaries of the trackage in question, its use and characteristics (including track and

signal charts) and all of the following apply: (1) The maximum authorized speed for all movements is not greater than 20 miles per hour, and that maximum is enforced by any available onboard PTC equipment within the confines of the yard or terminal; (2) Interlocking rules are in effect prohibiting reverse movements other than on signal indications without dispatcher permission; and (3) No freight operations are permitted.

FRA estimates that will receive approximately 23 MTEAs under the above requirement. It is estimated that each MTEA will be approximately 10 pages long and that it will take approximately 16 hours to complete each page of the MTEA. Thus, it is estimated that it will take approximately 160 hours to complete each MTEA. Total annual burden for this requirement is 3,680 hours.

Respondent Universe: 30 railroads

Burden time per response: 160 hours

Frequency of Response: On occasion
Annual number of Responses: 23 MTEAs
Annual Burden: 3,680 hours

Calculation: 23 MTEAs 160 hrs. = 3,680 hours

(c) Limited operations exception. FRA will consider an exception in the case of trackage used for limited operations by at least one passenger railroad subject to at least one of the following conditions: (1) All trains are limited to restricted speed; (2) Temporal separation of passenger and other trains is maintained as provided in paragraph (d) of this section; or (3) Passenger service is operated under a risk mitigation plan submitted by all railroads involved in the joint operation and approved by FRA. The risk mitigation plan must be

supported by a risk assessment establishing that the proposed mitigations will achieve a level of safety not less than the level of safety that would obtain if the operations were conducted under paragraph (c)(1) or (c)(2) of this section.
FRA estimates that will receive approximately 30 risk mitigation plans with supporting risk assessments under the above requirement. It is estimated that each risk mitigation plan will be approximately 10 pages long and that it will take approximately 16 hours to complete each page of the risk mitigation plan. Thus, it is estimated that it will take approximately 160 hours to complete each risk mitigation plan. Total annual burden for this requirement is 4,800 hours.

Respondent Universe:

30 railroads

Burden time per response:

160 hours

Frequency of Response:	On occasion
Annual number of Responses:	30 risk mitigation plans
Annual Burden:	4,800 hours
Calculation:	30 risk mitigation plans x 160 hrs. = 4,800 hours

(d) Temporal separation. As used in this section, temporal separation means the processes or physical arrangements, or both, in place to assure that limited passenger and freight operations do not operate on any segment of shared track during the same period. The use of exclusive authorities under mandatory directives is not, by itself, sufficient to establish that temporal separation is achieved. Procedures to ensure temporal separation shall include verification checks between passenger and freight and effective physical means to

positively ensure segregation of passenger and freight operations in accordance with this paragraph.

FRA estimates that approximately 15 procedures to ensure temporal separation will be developed under the above requirement. It is estimated that each temporal separation procedure will be approximately 10 pages long and that it will take approximately 16 hours to complete each page of the temporal separation procedure. Thus, it is estimated that it will take approximately 160 hours to complete each temporal separation procedure. Total annual burden for this requirement is 2,400 hours.

Respondent Universe:

30 railroads

Burden time per response:

160 hours

Frequency of Response:	On occasion
Annual number of Responses:	15 temporal separation procedures
Annual Burden:	2,400 hours

Calculation: 15 temporal separation procedures x 160 hrs. = 2,400 hours

(e) PTCSP requirement. No PTCSP filed after the approval of a PTCIP with an MTEA shall be approved by FRA unless it attests that no changes, except for those included in a FRA approved RFA, have been made to the information in the PTCIP and MTEA required by paragraph (b) or (c) of this section.

The burden associated for MTEAs is included above, and the burden for RFAs is included under that of § 236.1021 below. Consequently, there is no additional burden associated

with this requirement.

(f) Designation modifications. If subsequent to approval of its PTCIP or PTCSP the railroad seeks to modify which track or tracks should be designated as main line or not main line, it shall request modification of its PTCIP or PTCSP, as applicable, in accordance with § 236.1021.

The burden associated with this requirement is included below under that of § 236.1021. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this requirement is 15,680 hours (4,800 + 3,680 + 4,800 + 2,400).

§ 236.1021 – Discontinuances, Material Modifications, and Amendments

(a) No changes, as defined by this section, to a PTC system, PTCIP, PTCDP, or PTCSP, shall be made unless: (1) The railroad files a request for amendment ("RFA") to the applicable PTCIP, PTCDP, or PTCSP with the Associate Administrator; and (2) The Associate Administrator approves the RFA.

(b) After approval of a RFA in accordance with paragraph (a) of this section, the railroad shall immediately adopt and comply with the amendment.

(c) In lieu of a separate filing under part 235 of this chapter, a railroad may request approval of a discontinuance or material modification of a signal or train control system by filing a request for amendment (RFA) to its PTCIP, PTCDP, or PTCSP with the Associate Administrator.

(d) A RFA made in accordance with this section will not be approved by FRA unless the request includes:

(1) the information listed in § 235.10 of this chapter and the railroad provides FRA upon request any additional information necessary to evaluate the RFA (see § 235.12), including:

(2) the proposed modifications;

(3) the reasons for each modification;

(4) the changes to the PTCIP, PTCDP or PTCSP, as applicable;

(5) each modification's effect on PTC system safety;

(6) an approximate timetable for filing of the PTCDP, PTCSP, or both, if the amendment pertains to a PTCIP; and

(7) an explanation of whether each change to the PTCSP is planned or unplanned.

(A) Unplanned changes that affect the Type Approval's PTCDP require submission and approval in accordance with § 236.1013 of a new PTCDP, followed by submission and approval in accordance with § 236.1015 of a new PTCSP for the PTC system.

(B) Unplanned changes that do not affect the Type Approval's PTCDP require submission and approval of a new PTCSP.

(C) Unplanned changes are changes affecting system safety that have not been documented in the PTCSP. The impact of unplanned changes on PTC system safety has not yet been determined.

(D) Planned changes may be implemented after they have undergone suitable regression testing to demonstrate, to the satisfaction of the Associate Administrator, they have been correctly implemented and their implementation does not degrade safety.

(E) Planned changes are changes affecting system safety in the PTCSP and have been included in all required analysis under § 236.1017. The impact of these changes on the PTC system's safety has been incorporated as an integral part of the approved PTCSP safety analysis.

FRA estimates that it will receive approximately 15 requests for amendment (RFAs) under the above requirements. It is estimated that each RFA will be approximately five (5) pages long, and that it will take approximately 16 hours to gather the necessary information and complete each page of the RFA. Thus, it is estimated that it will take approximately 80 hours to complete each RFA and send it to FRA. Total annual burden for this requirement is 1,200 hours.

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Burden time per response:

80 hours

Frequency of Response: On occasion
Annual number of Responses: 15 RFAs
Annual Burden: 1,200 hours

Calculation: 15 RFAs x 80 hrs. = 1,200 hours

(e) If the RFA includes a request for approval of a discontinuance or material modification of a signal or train control system, FRA will publish a notice in the **Federal Register** of the application and will invite public comment in accordance with part 211 of this chapter.

FRA estimates that it will receive approximately 20 RFA public comments under the above requirement. It is estimated that it will take approximately three (3) hours for each of the 7 interested groups to review the RFA or a total of 21 hours to review the RFAs. It is further estimated that seven interested groups will make a total of 20 RFA public comments and that each RFA public comment will be approximately two (2) pages and that will take approximately eight (8) hours per page to gather the necessary information and complete the comment. Thus, each RFA comment will take approximately 16 hours to complete and send it to FRA. Total annual burden for this requirement is 341 hours.

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Burden time per response: 3 hours; 16 hours

Frequency of Response:	On occasion
Annual number of Responses:	7 reviews + 20 RFA public comments
Annual Burden:	341 hours

Calculation: 7 reviews x 3 hrs. + 20 RFA comments x 16 hrs. = 341 hours

(f) When considering the RFA, FRA will review the issue of the discontinuance or material modification and determine whether granting the request is in the public interest and consistent with railroad safety, taking into consideration all changes in the method of operation and system functionalities, both within normal PTC system availability and in the case of a system failed state (unavailable), contemplated in conjunction with installation of the PTC system. The railroad submitting the RFA must, at FRA's request, perform field testing in accordance with § 236.1035 or engage in Verification and Validation in accordance with § 236.1017.

The burden associated with the above requirement is included below under that of § 236.1035 and that of§ 236.1017, respectively. Consequently, there is no additional burden associated with this requirement.

(g) FRA may issue at its discretion a new Type Approval number for a PTC system modified under this section.

(h) Changes requiring filing of an RFA. Except as provided by paragraph (i), an RFA shall be filed to request the following: (1) discontinuance of a PTC system, or other similar appliance or device; (2) decrease of the PTC system's limits; (3) modification of a safety critical element of a PTC system; or (4) modification of a PTC system that affects the safety critical functionality of any other PTC system with which it interoperates.

The burden associated with this requirement is included above. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this entire requirement is 1,541 hours (1,200 + 341).

§ 236.1023 – Errors and Malfunctions

(a) Except as provided in paragraph (g) of this section, when any PTC system, subsystem, component, product, or process fails, malfunctions, or otherwise experiences a defect that decreases, or eliminates, any safety functionality, its vendor—regardless of whether any railroad has indicated whether it experienced the same—shall notify FRA and the affected railroads of the following: (1) the nature and specificity of the failure, malfunction, or defect; (2) the vendor's procedures for responding to the issue until the failure, malfunction, or defect is cured; (3) any corrective action required; (4) the risk mitigation actions to be taken pending resolution of the failure cause and issuance of the corrective action; and (5) the estimated time to correct the failure.

FRA estimates that approximately 60 notifications will be sent to FRA and affected railroads under the above requirement. It is estimated that each notification will be approximately two (2) pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the notification. Thus, it is estimated that it will take approximately 32 hours to complete each notification and send it to FRA and the affected railroad. Total annual burden for this requirement is 1,920 hours.

Respondent Universe:	5 PTC Suppliers
Burden time per response:	32 hours

Frequency of Response: On occasion
Annual number of Responses: 60 notifications
Annual Burden: 1,920 hours

Calculation: 60 notifications x 32 hrs. = 1,920 hours

(b) Any railroad implementing or operating a PTC system, subsystem, component, product, or process that fails, malfunctions, or otherwise experiences a defect that decreases, or eliminates, any safety or interoperability functionality, must: (1) notify the applicable vendor and FRA of the failure, malfunction, or defect that decreased or eliminated the safety functionality; and (2) keep the applicable vendor and FRA apprised on a continual basis of the status of any and all subsequent failures.

FRA estimates that approximately 150 notifications will be made to the applicable vendor and FRA under the above requirement. It is estimated that each notification will be approximately two (2) pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the notification. Thus, it is estimated that it will take approximately 16 hours to complete each notification and send it to FRA and the affected railroad. Total annual burden for this requirement is 2,400 hours.

Respondent Universe: 30 railroads

Burden time per response: 16 hours

Frequency of Response: On occasion
Annual number of Responses: 150 notifications
Annual Burden: 2,400 hours

Calculation: 150 notifications x 16 hrs. = 2,400 hours

(2) Additionally, FRA estimates that 150 notification updates will be made to the applicable vendor and FRA under the above requirement. It is estimated that each notification update will be approximately two (2) pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the notification update. Thus, it is estimated that it will take approximately 16 hours to complete each notification update and send it to FRA and the affected railroad. Total annual burden for this requirement is 2,400 hours.

Respondent Universe: 30 railroads

Burden time per response: 16 hours

Frequency of Response: On occasion
Annual number of Responses: 150 notification updates
Annual Burden: 2,400 hours

Calculation: 150 notification updates x 16 hrs. = 2,400 hours

(c) Each railroad implementing a PTC system on its property shall maintain a PTC Product Vendor List (PTCPVL) continually updated to include all vendors of each PTC system, subsystem, component, product, and process currently used in its PTC system. The PTCPVL shall be made available to FRA upon request and without undue delay.

FRA estimates that approximately 30 PTC Product Vendor Lists (PTCPVLs) will be created, maintained, and continually updated under the above requirement. It is estimated that each list will be approximately one (1) page long and that it will take approximately

eight (8) hours to gather the necessary information and complete each page of the list. Thus, each list will take approximately eight (8) hours to complete and maintain. Total annual burden for this requirement is 240 hours.

Respondent Universe:

30 railroads

Burden time per response: 8 hours

Frequency of Response: On occasion
Annual number of Responses: 30 lists
Annual Burden: 240 hours

Calculation: 30 lists x 8 hrs. = 240 hours

(d) The railroad shall specify to FRA—and the applicable vendor if appropriate—its procedures for action upon notification of a safety critical upgrade, patch, or revision for the PTC system, subsystem, component, product, or process, and until the revision has been installed.

FRA estimates that it will receive approximately 30 procedures for action under the above requirement. It is estimated that each procedure for action document will be approximately two (2) pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the document. Thus, it is estimated that it will take approximately 16 hours to complete each procedures for action document and send it to FRA. Total annual burden for this requirement is 480 hours.

Respondent Universe:

30 railroads

Burden time per response: 16 hours

Frequency of Response: On occasion
Annual number of Responses: 30 procedures for action
Annual Burden: 480 hours

Calculation: 30 procedures for action x 16 hrs. = 480 hours

(e) Each notification required by this section must: (1) be made within 7 days after the vendor or railroad discovers the failure, malfunction, or defect. However, a report that is due on a Saturday or a Sunday may be delivered on the following Monday and one that is due on a holiday may be delivered on the next workday; (2) be transmitted in a manner and form acceptable to the Associate Administrator and by the most expeditious method available; and (3) include as much available and applicable information as possible, including: (i) PTC system name and model; (ii) Identification of the part, component, or system involved. The identification must include the part number; (iii) Nature of the failure, malfunctions, or defects; (iv) Mitigation to ensure the safety of the crews and public; and (v) The estimated time to correct the failure.

The burden associated with notifications is included § 236.1023 (a) and (b) *above. Consequently, there is no additional burden associated with this requirement.*

(f) Whenever any investigation of an accident or service difficulty report shows that an article is unsafe because of a manufacturing or design defect, the manufacturer shall, upon request of the Associate Administrator, report to the Associate Administrator the results of its investigation and any action taken or proposed by the manufacturer to correct that defect.

In approximately five (5) cases, FRA estimates that the Associate Administrator will request a report on the manufacturer's investigation of an accident or service difficulty and thus five (5) reports will be received by FRA from manufacturers indicating the results of their investigations and any actions taken or proposed by the manufacturer to correct that defect. It is estimated that each report will be approximately 25 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of report. Thus, it is estimated that each report will take approximately 400 hours to complete and send to FRA. Total annual burden for this requirement is 2,000 hours.

Respondent Universe: 5 System suppliers

Burden time per response: 400 hours

Frequency of Response: On occasion
Annual number of Responses: 5 reports
Annual Burden: 2,000 hours

Calculation: 5 reports x 400 hrs. = 2,000 hours

(g) The requirements of this section do not apply to failures, malfunctions, or defects that: (1) are caused by improper maintenance or improper usage; or (2) have been previously identified to the FRA, vendor, and applicable railroads.

The burden for this requirement is already included under that of § 236.1023(a) and (b) above. Consequently, there is no additional burden associated with this requirement.

(b) Any railroad experiencing a failure of a system resulting in a more favorable aspect than intended or another condition hazardous to movement of a train shall comply with the reporting requirements, including the making of a telephonic report of an accident or incident under part 233 of this chapter. Filing of one or more reports under part 233 of this chapter does not exempt a railroad or vendor from the reporting requirements contained in paragraphs (a) through (e) of this section.

The burden for this requirement is already included under that of § 236.1023(a) and (b) above. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this entire requirement is 9,440 hours (1,920 + 2,400 + 2,400 + 240 + 480 + 2,000).

§ 236.1027 – Exclusions

Changes or modifications to PTC systems otherwise excluded from the requirements of this subpart by this section do not exclude those PTC systems from the requirements of this subpart if the changes or modifications result in a degradation of safety or a material decrease in safety-critical functionality.

The burden associated with the above requirement is included that of § 236.1021. Consequently, there is no additional burden associated with this requirement.

Primary train control systems cannot be integrated with locomotive electronic systems unless the complete integrated systems: (1) have been shown to be designed on fail safe principles; (2) have demonstrated to operate in a fail safe mode; (3) have a manual fail safe fallback and override to allow the locomotive to be brought to a safe stop in the event of any loss of electronic control; and (4) are included in the approved and applicable PTCDP and PTCSP.

The burden associated with the above requirement is included that of § 236.1013 and that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

§ 236.1029 – PTC System Use and En Route Failures

(a) When any safety-critical PTC system component fails to perform its intended function, the cause must be determined and the faulty component adjusted, repaired, or replaced

without undue delay. Until repair of such essential components are completed, a railroad shall take appropriate action as specified in its PTCSP.

(b)Where a PTC onboard device on a lead locomotive that is operating in or is to be operated within a PTC system fails or is otherwise cut-out while en route (i.e, after the train has departed its initial terminal), the 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.

FRA estimates that approximately 960 reports will be made under the above requirement. It is estimated that it will take approximately 96 hours to gather the necessary information and complete each report to the designated railroad officer. Total annual burden for this requirement is 92,160 hours.

Respondent Universe:

30 railroads

Burden time per response:

96 hours

Frequency of Response: On occasion
Annual number of Responses: 960 reports
Annual Burden: 92,160 hours

Calculation: 960 reports x 96 hrs. = 92,160 hours

(c) In order for a PTC train that operate at speeds above 90 miles per hour to deviate from the operating limitations contain 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.

The burden associated with the above requirement is included that of § 236.1013 and that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(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.

The burden associated with the above requirement is included that of § 236.1009 and that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this entire requirement is 92,160 hours.

§ 236.1031 – Previously Approved PTC Systems

(a) Any PTC system fully implemented and operational prior to [Insert effective date of final rule], 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) recognized or approved by FRA under subpart H 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 five (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 railroad has implemented and is operating a PTC system required by a FRA order issued prior to [Insert effective date of this section].

FRA estimates that it will receive approximately three (3) (grandfathering) REC letters under the above requirement. It is estimated that each letter will be approximately 10 pages long and that it will take approximately 16 hours to gather the necessary information and complete each page of the REC letter and send it to FRA. Thus, it is estimated that it will take approximately 160 hours to complete each REC letter and send it to FRA. Total annual burden for this requirement is 480 hours.

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Burden time per response: 160 hours

Frequency of Response: On occasion
Annual number of Responses: 3 REC letters
Annual Burden: 480 hours

Calculation: 3 REC letters x 160 hrs. = 480 hours

(b) If a 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.

FRA estimates that it will receive approximately three (3) railroad (grandfathering) requests under the above requirement. It is estimated that each request will be approximately 100 pages long and that it will take approximately 16 hours to complete each page of the request. Thus, it is estimated that each request will take approximately 1,600 hours to complete and send to FRA. Total annual burden for this requirement is 4,800 hours.

Respondent Universe:

30 railroads

Burden time per response: 1,600 hours

Frequency of Response: On occasion
Annual number of Responses: 3 requests
Annual Burden: 4,800 hours

Calculation: 3 requests x 1,600 hrs. = 4,800 hours

(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.

The burden associated with the above requirement is included that of § 236.1013 and that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this entire requirement is 5,280 hours (480 + 4,800).

§ 236.1033 – Communications and Security Requirements

Each railroad, or its vendor, 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.

The burden associated with the above requirement is included that of § 236.1009 and that

of § 236.1015. Consequently, there is no additional burden associated with this requirement.

§ 236.1035 – Field Testing Requirements

(a) Before any field testing of an uncertified PTC system, or a product of an uncertified PTC system, or any regression testing of a certified PTC system is conducted on the general rail system, the railroad requesting the testing must provide: (1) a complete description of the PTC system; (2) an operational concepts document; (3) a complete description of the specific test procedures, including the measures that will be taken to protect trains and on-track equipment; (4) an analysis of the applicability of the requirements of subparts A-G of this part to the PTC system that will not apply during testing; (5) the date the proposed testing shall begin; (6) the test locations; and (7) the effect on the current method of the PTC system under test operation.

(b) FRA may impose additional testing conditions that it believes may be necessary for the safety of train operations.

FRA estimates that it will receive approximately 150 requests for field testing with the necessary accompanying documents under the above requirement. It is estimated that each request will be approximately 100 pages long and that it will take approximately eight (8) hours to complete each page of the request. Thus, it is estimated that it will take approximately 800 hours to complete each request with the necessary supporting documents and send them to FRA. Total annual burden for this requirement is 120,000 hours.

Respondent Universe:

30 railroads

Burden time per response:

800 hours

Frequency of Response: On occasion
Annual number of Responses: 150 requests (with necessary documents)
Annual Burden: 120,000 hours

Calculation: 150 requests x 800 hrs. = 120,000 hours

§ 236.1037 – Records Retention

(a) Each railroad with a PTC system required to be installed under this subpart shall maintain at a designated office on the railroad:

(1) a current copy of each FRA approved Type Approval, if any, PTCDP, and PTCSP that it holds;

(2) adequate documentation to demonstrate that the PTCSP and PTCDP meet the safety requirements of this subpart, including the risk assessment;

The burden associated with the above requirements is included that of § 236.1013 and that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(3) An Operations and Maintenance Manual, pursuant to § 236.1039; and

(4) Training and testing records pursuant to § 236.1043(b).

The burden associated with the above requirements is included that of § 236.1039 and that of § 236.1043(b). Consequently, there is no additional burden associated with this requirement.

(b) Results of inspections and tests specified in the PTCSP and PTCDP must be recorded pursuant to § 236.110.

FRA estimates that approximately 960 records will be kept under the above requirement. It is estimated that it will take approximately four (4) hours to gather the necessary information and complete each record. Total annual burden for this requirement is 3,840 hours.

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Burden time per response: 4 hours

Frequency of Response: On occasion

Annual number of Responses: 960 records

Annual Burden: 3,840 hours

Calculation: 960 paper records x 4 hrs. = 3,840 hours

(c) Each contractor providing services relating to the testing, maintenance, or operation of a PTC system required to be installed under this subpart shall maintain at a designated office training records required under §236.1039(b).

FRA estimates that there will be approximately five (5) contractors for each of the 30 railroads and that there will be approximately 20 people for each contractor who will be trained (5 contr. x 30 RRs x 20 tr. people) and thus approximately 3,000 records will be kept under the above requirement. Further, it is estimated that records will be kept three (3) times a year and thus a total of 9,000 records will be kept It is estimated that it will take approximately 30 minutes to gather the necessary information and complete each record. Total annual burden for this requirement is 4,500 hours.

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Burden time per response: 30 minutes

Frequency of Response: On occasion
Annual number of Responses: 9,000 records
Annual Burden: 4,500 hours

Calculation: 9,000 records x 30 min. = 4,500 hours

(d) After the PTC system is placed in service, the railroad shall maintain a database of all safety-relevant hazards as set forth in the PTCSP and PTCDP and those that had not been previously identified in either document.

The burden for this portion of the requirement is already included under that of § 236.1009 and § 236.1015 above. Consequently, there is no additional burden associated with this requirement.

If the frequency of the safety-relevant hazards exceeds the threshold set forth in either of these documents, then the railroad shall: Report the inconsistency in writing by mail, facsimile, e-mail, or hand delivery to the Director, Office of Safety Assurance and Compliance, FRA, 1200 New Jersey Ave, SE, Mail Stop 25, Washington, DC 20590, within 15 days of discovery. Documents that are hand delivered must not be enclosed in an envelope; (2) Take prompt countermeasures to reduce the frequency of each safety-relevant hazard to below the threshold set forth in the PTCSP and PTCDP.

FRA estimates that approximately four (4) initial reports will be sent to FRA's Office of Safety Assurance and Compliance under the above requirement. It is estimated that each report will be approximately one (1) page long and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the report. Thus, it is estimated that it will take eight (8) hours to complete each initial report. Total annual burden for this requirement is 32 hours.

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Burden time per response: 8 hours

Frequency of Response: On occasion
Annual number of Responses: 4 reports
Annual Burden: 32 hours

Calculation: 4 reports x 8 hrs. = 32 hours

(3) Provide a final report when the inconsistency is resolved to the FRA Director, Office of Safety Assurance and Compliance, on the results of the analysis and countermeasures taken to reduce the frequency of the safety-relevant hazard(s) below the threshold set forth in the PTCSP and PTCDP.

FRA estimates that approximately four (4) final reports will be sent to the Director of FRA's Office of Safety Assurance and Compliance under the above requirement. It is estimated that each final report will be approximately 20 pages long and that it will take approximately eight (8) hours to gather the necessary information and complete each page of the report. Thus, it is estimated that it will take 160 hours to complete each final report. Total annual burden for this requirement is 640 hours.

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Burden time per response: 160 hours

Frequency of Response: On occasion
Annual number of Responses: 4 final reports
Annual Burden: 640 hours

Calculation: 4 final reports x 160 hrs. = 640 hours

Total annual burden for this entire requirement is 9,012 hours (3,840 + 4,500 + 32 + 640).

§ 236.1039 – Operations and Maintenance Manual

(a) The railroad shall catalog and maintain all documents as specified in the PTCDP and PTCSP for the installation, maintenance, repair, modification, inspection, and testing of the PTC system and have them in one Operations and Maintenance Manual, readily available to persons required to perform such tasks and for inspection by FRA and FRA-certified State inspectors.

(b) Plans required for proper maintenance, repair, inspection, and testing of safety-critical PTC systems must be adequate in detail and must be made available for inspection by FRA and FRA-certified State inspectors where such PTC systems are deployed or maintained. They must identify all software versions, revisions, and revision dates. Plans must be legible and correct.

(c) Hardware, software, and firmware revisions must be documented in the Operations and Maintenance Manual according to the railroad's configuration management control plan and any additional configuration/revision control measures specified in the PTCDP and PTCSP

FRA estimates that approximately 30 Operations and Maintenance Manuals (OMMs) will be developed under the above requirement. It is estimated that each OMM will be approximately 250 pages long and that it will take approximately one (1) hour to gather then necessary information and complete each page of the manual. Total annual burden for this requirement is 7,500 hours.

Respondent Universe:

30 railroads

Burden time per response: 250 hours

Frequency of Response: On occasion
Annual number of Responses: 30 OMMs
Annual Burden: 7,500 hours

Calculation: 30 OMMs x 250 hrs. = 7,500 hours

(d) Safety-critical components, including spare equipment, must be positively identified, handled, replaced, and repaired in accordance with the procedures specified in the PTCDP and PTCSP.

FRA estimates that approximately 75,000 safety critical components will be positively identified under the above requirement. It is estimated that it will take approximately one (1) hour to gather the necessary information and positively identify each component. Total annual burden for this requirement is 75,000 hours.

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Burden time per response: 1 hour

Frequency of Response: On occasion
Annual number of Responses: 75,000 identified components
Annual Burden: 75,000 hours

Calculation: 75,000 identified components x 1 hr. = 75,000 hours

(e) Each railroad shall designate in its Operations and Maintenance Manual an appropriate railroad officer responsible for issues relating to scheduled interruptions of service contemplated by § 236.1029.

FRA estimates that approximately 60 railroad officers – two for each of the 30 affected railroads -- will be designated under the above requirement. It is estimated that it will take approximately two (2) hours to gather the necessary information and designate each officer. Total annual burden for this requirement is 120 hours.

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Burden time per response: 2 hours

Frequency of Response: On occasion
Annual number of Responses: 60 designated railroad officers

Annual Burden: 120 hours

Calculation: 60 designated railroad officers x 2 hrs. = 120 hours

Total annual burden for this entire requirement is 82,620 hours (7,500 + 75,000 + 120).

§ 236.1041 – Training and qualification program, general

(a) Training program for PTC personnel. Employers shall establish and implement training and qualification programs for PTC systems subject to this subpart. These programs must meet the minimum requirements set forth in the PTCDP and PTCSP in §§ 236.1039 through 236.1045 as appropriate, for the following personnel:

(1) Persons whose duties include installing, maintaining, repairing, modifying, inspecting, and testing safety-critical elements of the railroad's PTC systems, including central office, wayside, or onboard subsystems;

(2) Persons who dispatch train operations (issue or communicate any mandatory directive that is executed or enforced, or is intended to be executed or enforced, by a train control system subject to this subpart);

(3) Persons who operate trains or serve as a train or engine crew member subject to instruction and testing under part 217 of this chapter, on a train operating in territory where a train control system subject to this subpart is in use;

(4) Roadway workers whose duties require them to know and understand how a train control system affects their safety and how to avoid interfering with its proper functioning; and

(5) The direct supervisors of persons listed in paragraphs (a)(1) through (a)(4) of this section.

FRA estimates that approximately 30 PTC training programs will be established and implemented under the above requirement. It is estimated that it will take approximately 400 hours to establish each training program. Total annual burden for this requirement is 12,000 hours.

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Burden time per response: 400 hours

Frequency of Response: On occasion
Annual number of Responses: 30 PTC training programs
Annual Burden: 12,000 hours

Calculation: 30 PTC training programs x 400 hrs. = 12,000 hours

(b) Competencies. The employer's program must provide training for persons who perform the functions described in paragraph (a) of this section to ensure that they have the necessary knowledge and skills to effectively complete their duties related to operation and maintenance of the PTC system.

The burden associated with training employees specified in (a) above is included in that of §§ 236.1045, 236.1047, and 236.1049 below. Consequently, there is no additional burden associated with this requirement.

Total annual burden for this entire requirement is 12,000 hours.

§ 236.1043 – Task Analysis and Basic Requirements

(a) Training structure and delivery. As part of the program required by § 236.1041, the employer shall, at a minimum:

(1) Identify the specific goals of the training program with regard to the target population (craft, experience level, scope of work, etc.), task(s), and desired success rate;

(2) Based on a formal task analysis, identify the installation, maintenance, repair, modification, inspection, testing, and operating tasks that must be performed on a railroad's PTC systems. This includes the development of failure scenarios and the actions expected under such scenarios;

(3) Develop written procedures for the performance of the tasks identified;

(4) Identify the additional knowledge, skills, and abilities above those required for basic job performance necessary to perform each task;

(5) Develop a training and evaluation curriculum that includes classroom, simulator, computer-based, hands-on, or other formally structured training designed to impart the knowledge, skills, and abilities identified as necessary to perform each task;
(6) Prior to assignment of related tasks, require all persons mentioned in § 236.1041(a) to successfully complete a training curriculum and pass an examination that covers the PTC system and appropriate rules and tasks for which they are responsible (however, such persons may perform such tasks under the direct onsite supervision of a qualified person prior to completing such training and passing the examination);

(7) Require periodic refresher training and evaluation at intervals specified in the PTCDP and PTCSP that includes classroom, simulator, computer-based, hands-on, or other formally structured training and testing, except with respect to basic skills for which proficiency is known to remain high as a result of frequent repetition of the task; and

(8) Conduct regular and periodic evaluations of the effectiveness of the training program specified in § 236.1041(a)(1) verifying the adequacy of the training material and its validity with respect to current railroads PTC systems and operations.

The burden associated with training employees specified in (a) above is included in that of §§ 236.1045, 236.1047, and 236.1049 below. Consequently, there is no additional burden associated with this requirement.

FRA estimates that approximately six (6) regular and periodic evaluations of the effectiveness of the training program will be conducted under the above requirement. It is estimated that it will take approximately 720 hours to conduct each evaluation. Total annual burden for this requirement is 4,320 hours.

Respondent Universe:

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Burden time per response:

720
hours

Frequency of Response: On occasion
Annual number of Responses: 6 regular & periodic evaluations
Annual Burden: 4,320 hours

Calculation: 6 regular & periodic evaluations x 720 hrs. = 4,320 hours

(b) Training records. Employers shall retain records which designate persons who are qualified under this section until new designations are recorded or for at least one year after such persons leave applicable service. These records shall be kept in a designated location and be available for inspection and replication by FRA and FRA-certified State inspectors.

FRA estimates that approximately 350 training records (300 signalmen + 20 dispatchers + 30 managers) will be created and retained under the above requirement. It is estimated that it will take approximately 10 minutes to complete each record. Total annual burden for this requirement is 58 hours.

Respondent Universe:

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Burden time per response:

10
minutes

Frequency of Response: On occasion
Annual number of Responses: 350 PTC training records
Annual Burden: 58 hours

Calculation: 350 PTC training records x 10 min. = 58 hours

Total annual burden for this entire requirement is 4,378 hours (4,320 + 58).

§ 236.1045 – Training Specific to Office Control Personnel

(a) Any person responsible for issuing or communicating mandatory directives in territory where PTC systems are or will be in use must be trained in the following areas, as applicable:

(1) Instructions concerning the interface between the computer-aided dispatching system and the train control system, with respect to the safe movement of trains and other on-track equipment;

(2) Railroad operating rules applicable to the train control system, including provision for movement and protection of roadway workers, unequipped trains, trains with failed or cut-out train control onboard systems, and other on-track equipment; and

(3) Instructions concerning control of trains and other on-track equipment in case the train control system fails, including periodic practical exercises or simulations, and operational testing under part 217 of this chapter to ensure the continued capability of the personnel to provide for safe operations under the alternative method of operation.

FRA estimates that approximately 20 railroad employees specified in this section will receive training under the above requirement. It is estimated that it will take approximately 20 hours to train each employee. Total annual burden for this requirement is 400 hours.

Respondent Universe:

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Burden time per response: 20 hours

Frequency of Response: On occasion
Annual number of Responses: 20 PTC trained employees
Annual Burden: 400 hours

Calculation: 20 PTC trained employees x 20 hrs. = 400 hours

§ 236.1047 – Training Specific to Locomotive Engineers and Other Operating Personnel

(a) Operating personnel. Training provided under this subpart for any locomotive engineer or other person who participates in the operation of a train in train control territory must be defined in the PTCDP as well as the PTCSP. The following elements must be addressed:

(1) Familiarization with train control equipment onboard the locomotive and the functioning of that equipment as part of the system and in relation to other onboard systems under that person's control;

(2) Any actions required of the onboard personnel to enable, or enter data to, the system, such as consist data, and the role of that function in the safe operation of the train;'

(3) Sequencing of interventions by the system, including pre-enforcement notification, enforcement notification, penalty application initiation and post-penalty application procedures;

(4) Railroad operating rules and testing (part 217) applicable to the train control system, including provisions for movement and protection of any unequipped trains, or trains with failed or cut-out train control onboard systems and other on-track equipment;

(5) Means to detect deviations from proper functioning of onboard train control equipment and instructions regarding the actions to be taken with respect to control of the train and notification of designated railroad personnel; and

(6) Information needed to prevent unintentional interference with the proper functioning of onboard train control equipment.

The burden associated with the above requirement is covered under that of § 236.1013, and that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(b) Locomotive engineer training. Training required under this subpart for a locomotive engineer, together with required records, must be integrated into the program of training required by part 240 of this chapter.

The burden associated with the above requirement is covered under OMB No. 2130-0533 and will be updated to include all new requirements at the next renewal of that information collection. Consequently, there is no additional burden associated with this requirement.

(c) Full automatic operation. The following special requirements apply in the event a train control system is used to effect full automatic operation of the train:
(1) The PTCDP and PTCSP must identify all safety hazards to be mitigated by the locomotive engineer.

(2) The PTCDP and PTCSP must address and describe the training required with provisions for the maintenance of skills proficiency. As a minimum, the training program must:

(i) As described in § 236.1047(a)(2), develop failure scenarios which incorporate the safety hazards identified in the PTCDP and PTCSP including the return of train operations to a fully manual mode;

(ii) Provide training, consistent with § 236.1047(a), for safe train operations under all failure scenarios and identified safety hazards that affect train operations;

(iii) Provide training, consistent with § 236.1047(a), for safe train operations under manual control; and

(iv) Consistent with § 236.1047(a), ensure maintenance of manual train operating skills by requiring manual starting and stopping of the train for an appropriate number of trips and by one or more of the following methods:

(A) Manual operation of a train for a 4-hour work period;

(B) Simulated manual operation of a train for a minimum of 4 hours in a Type I simulator as required; or

(C) Other means as determined following consultation between the railroad and designated representatives of the affected employees and approved by FRA. The PTCDP and PTCSP must designate the appropriate frequency when manual operation, starting, and stopping must be conducted, and the appropriate frequency of simulated manual operation.

The burden associated with the above requirement is covered under that of § 236.1013, and that of § 236.1015. Consequently, there is no additional burden associated with this requirement.

(d) Conductor training. Training required under this subpart for a conductor, together with required records, must be integrated into the program of training required under this chapter.

FRA estimates that approximately 5,000 railroad conductors will receive training under the above requirement. It is estimated that it will take approximately three (3) hours to train each employee. Total annual burden for this requirement is 15,000 hours.

Respondent Universe: 30 railroads

Burden time per response: 3 hours

Frequency of Response: On occasion
Annual number of Responses: 5,000 PTC trained conductors
Annual Burden: 15,000 hours

Calculation: 5,000 PTC trained conductors x 3 hrs. = 15,000 hours

Total annual burden for this requirement is 15,000 hours.

§ 236.1049 – Training Specific to Locomotive Engineers and Other Operating Personnel

(a) Roadway worker training. Training required under this subpart for a roadway worker must be integrated into the program of instruction required under part 214, subpart C of this chapter ("Roadway Worker Protection"), consistent with task analysis requirements of §236.1039. This training must provide instruction for roadway workers who provide protection for themselves or roadway work groups.
(b) Training subject areas. (1) Instruction for roadway workers must ensure an understanding of the role of processor-based signal and train control equipment in establishing protection for roadway workers and their equipment.

(2) Instruction for all roadway workers working in territories where PTC is required under this subpart must ensure recognition of processor-based signal and train control equipment on the wayside and an understanding of how to avoid interference with its proper functioning.

(3) Instructions concerning the recognition of system failures and the provision of alternative methods of on-track safety in case the train control system fails, including periodic practical exercises or simulations and operational testing under part 217 of this chapter to ensure the continued capability of roadway workers to be free from the danger of being struck by a moving train or other on-track equipment.

The burden associated with the above requirements is covered under OMB No. 2130-0539 and will be updated to include all new requirements at the next renewal of that information collection. Consequently, there is no additional burden associated with this requirement.

Appendix B - Risk Assessment Criteria

The safety-critical performance of each product for which risk assessment is required under this part must be assessed in accordance with the following minimum criteria or other criteria if demonstrated to the Associate Administrator for Safety to be equally suitable: (a) The risk metric for the proposed product must describe with a high degree of confidence the accumulated risk of a train control system that operates over the designated life-cycle of the product. Each risk metric for the proposed product must be expressed with an upper bound, as estimated with a sensitivity analysis, and the risk value selected must be demonstrated to have a high degree of confidence. (b) The risk assessment of each safety-critical system (product) must account not only for the risks associated with each subsystem or component, but also for the risks associated with interactions (interfaces) between such subsystems. (c) The risk for the previous condition must be computed using the same metrics as for the new system being proposed. A full risk

assessment must consider the entire railroad environment where the product is being applied, and show all aspects of the previous condition that are affected by the installation of the product, considering all faults, operating errors, exposure scenarios, and consequences that are related as described in this part. For the full risk assessment, the total societal cost of the potential numbers of accidents assessed for both previous and new system conditions must be computed for comparison. An abbreviated risk assessment must, as a minimum, clearly compute the Mean Time To Hazardous Event (MTTHE) for all of the hazardous events identified for both previous and current conditions. The comparison between MTTHE for both conditions is to determine whether the product implementation meets the safety criteria as required by Subpart H or Subpart I as applicable. (d) Each risk calculation must consider the total signaling and train control system and method of operation, as subjected to a list of hazards to be mitigated by the signaling and train control system. The methodology requirements must include the following major characteristics, when they are relevant to the product being considered: (1) Track plan infrastructure, switches, rail crossings at grade and highway-rail grade crossings as applicable; (2) Train movement density for freight, work, and passenger trains where applicable and computed over a time span of not less than 12 months; (3) Train movement operational rules, as enforced by the dispatcher, roadway worker/Employee in Charge, and train crew behaviors; (4) Wayside subsystems and components; and (5) Onboard subsystems and components. (6) Consist contents such as hazardous material, oversize loads; and (7) Operating speeds if the provisions of Part 236 cite additional requirements for certain type of train control systems to be used at such speeds for freight and passenger trains. (e) In order to derive the frequency of hazardous events (or MTTHE) applicable for a product, subsystem or component included in the risk assessment, the railroad may use various techniques, such as reliability and availability calculations for subsystems and components, Fault Tree Analysis (FTA) of the subsystems, and results of the application of safety design principles as noted in Appendix C. Such failure frequency is to be derived for both fail-safe and non-fail-safe subsystems or components. The lower bounds of the MTTF or MTBF determined from the system sensitivity analysis, which account for all necessary and well justified assumptions, may be used to represent the estimate of MTTHE for the associated non-fail-safe subsystem or component in the risk assessment. (f)(1) An MTTHE value must be calculated for each processor-based subsystem or component, or both, indicating the safety-critical behavior of the integrated hardware/software subsystem or component, or both. The human factor impact must be included in the assessment, whenever applicable, to provide an integrated MTTHE value. The MTTHE calculation must consider the rates of failures caused by permanent, transient, and intermittent faults accounting for the fault coverage of the integrated hardware/software subsystem or component, phased-interval maintenance, and restoration of the detected failures. (2) Software fault/failure analysis must be based on the proper assessment of the design and implementation of the application code, its operating/executive program, and associated device drivers, historical performance data, analytical methods and experimental safety-critical performance testing performed on the subsystem or component. The software assessment process must demonstrate through

repeatable predictive results that all software defects have been identified and corrected by process with a high degree of confidence. (g)(1) The safety-critical behavior of all non-processor-based components, which are part of a processor-based system or subsystem, must be quantified with an MTTHE metric. The MTTHE assessment methodology must consider failures caused by permanent, transient, and intermittent faults, phase-interval maintenance and restoration of operation after failures and the effect of fault coverage of each non-processor-based subsystem or component. (2) MTTHE compliance verification and validation must be based on the assessment of the design for adequacy by a documented verification and validation process, historical performance data, analytical methods and experimental safety-critical performance testing performed on the subsystem or component. The non-processor-based quantification compliance must be demonstrated to have a high degree of confidence.(h)(1) The railroad shall document any assumptions regarding the derivation of risk metrics used. For example, for the full risk assessment, all assumptions made about each value of the parameters used in the calculation of total cost of accidents should be documented. For abbreviated risk assessment, all assumptions made for MTHHE derivation using existing reliability and availability data on the current system components should be documented. The railroad shall document these assumptions in such a form as to permit later automated comparisons with in-service experience. (2) The railroad shall document any assumptions regarding human performance. The documentation shall be in such a form as to facilitate later comparisons with in-service experience. (3) The railroad shall document any assumptions regarding software defects. These assumptions shall be in a form which permits the railroad to project the likelihood of detecting an in-service software defect. These assumptions shall be documented in such a form as to permit later automated comparisons with in-service experience. (4) The railroad shall document all of the identified safety-critical fault paths to a mishap as predicted by the safety analysis methodology. The documentation shall be in such a form as to facilitate later comparisons with in-service faults.

The burden for this requirement is included under § 236.907 and § 236.1013.

Appendix C - Safety Assurance Criteria and Processes

(a) This appendix provides safety criteria and processes that the designer must use to develop and validate the product that meets safety requirements of this part. FRA uses the criteria and processes set forth in this appendix to evaluate the validity of safety targets and the results of system safety analyses provided in the RSPP, PSP, PTCIP, PTCDP, and PTCSP documents as appropriate. An analysis performed under this appendix must: (1) Address each of the safety principles of paragraph (b) of this appendix, or explain why they are not relevant, and (2) Employ a validation and verification process pursuant to paragraph (c) of this appendix.

(b) The designer must address each of the following safety consideration principles when designing and demonstrating the safety of products covered by subpart H or I of this part.

In the event that any of these principles are not followed, the PSP or PTCDP or PTCSP shall state both the reason(s) for departure and the alternative(s) utilized to mitigate or eliminate the hazards associated with the design principle not followed:

(1) System Safety Under Normal Operating Conditions. The system (all its elements including hardware and software) must be designed to assure safe operation with no hazardous events under normal anticipated operating conditions with proper inputs and within the expected range of environmental conditions. All safety-critical functions must be performed properly under these normal conditions. Absence of specific operator actions or procedures will not prevent the system from operating safely. The designer must identify and categorize all hazards that may lead to unsafe system operation. Hazards categorized as unacceptable or undesirable, which is determined by hazard analysis, must be eliminated by design. Those undesirable hazards that cannot be eliminated should be mitigated to the acceptable level as required by this part.

(2) Systematic Safety Under Failures. (i) It must be shown how the product is designed to eliminate or mitigate unsafe systematic failures -- those conditions which can be attributed to human error that could occur at various stages throughout product development. This includes unsafe errors in the software due to human error in the software specification, design or coding phases, or both; human errors that could impact hardware design; unsafe conditions that could occur because of an improperly designed human-machine interface; installation and maintenance errors; and errors associated with making modifications. (ii) The product must be shown to operate safely under conditions of random hardware failure. This includes single as well as multiple hardware failures, particularly in instances where one or more failures could occur, remain undetected (latent) and react in combination with a subsequent failure at a later time to cause an unsafe operating situation. In instances involving a latent failure, a subsequent failure is similar to there being a single failure. In the event of a transient failure, and if so designed, the system should restart itself if it is safe to do so. Frequency of attempted restarts must be considered in the hazard analysis required by § 236.907(a)(8). (iii) There shall be no single point failures in the product that can result in hazards categorized as unacceptable or undesirable. Occurrence of credible single point failures that can result in hazards must be detected and the product must achieve a known safe state before falsely activating any physical appliance. (iv) If one non-self-revealing failure combined with a second failure can cause a hazard that is categorized as unacceptable or undesirable, then the second failure must be detected and the product must achieve a known safe state before falsely activating any physical appliance. (v) Another concern of multiple failures involves common mode failures in which two or more subsystems or components intended to compensate one another to perform the same function all fail by the same mode and result in unsafe conditions. This is of particular concern in instances in which two or more elements (hardware or software, or both) are used in combination to ensure safety. If a common mode failure exists, then any analysis performed under this appendix cannot rely on the assumption that failures are independent. Examples include: the use of redundancy

in which two or more elements perform a given function in parallel and when one (hardware or software) element checks/monitors another element (of hardware or software) to help ensure its safe operation. Common mode failure relates to independence, which must be ensured in these instances. When dealing with the effects of hardware failure, the designer shall address the effects of the failure not only on other hardware, but also on the execution of the software, since hardware failures can greatly affect how the software operates.

(3) Closed Loop Principle. System design adhering to the closed loop principle requires that all conditions necessary for the existence of any permissive state or action be verified to be present before the permissive state or action can be initiated. Likewise the requisite conditions shall be verified to be continuously present for the permissive state or action to be maintained. This is in contrast to allowing a permissive state or action to be initiated or maintained in the absence of detected failures. In addition, closed loop design requires that failure to perform a logical operation, or absence of a logical input, output or decision shall not cause an unsafe condition, i.e. system safety does not depend upon the occurrence of an action or logical decision.

(4) Safety Assurance Concepts. The product design must include one or more of the following Safety Assurance Concepts as described in IEEE-1483 standard to ensure that failures are detected and the product is placed in a safe state. One or more different principles may be applied to each individual subsystem or component, depending on the safety design objectives of that part of the product.

(i) Design diversity and self-checking concept. This concept requires that all critical functions be performed in diverse ways, using diverse software operations and/or diverse hardware channels, and that critical hardware be tested with Self-Checking routines. Permissive outputs are allowed only if the results of the diverse operations correspond, and the Self-Checking process reveals no failures in either execution of software or in any monitored input or output hardware. If the diverse operations do not agree or if the checking reveals critical failures, safety-critical functions and outputs must default to a known safe state.

(ii) Checked redundancy concept. The Checked Redundancy concept requires implementation of two or more identical, independent hardware units, each executing identical software and performing identical functions. A means is to be provided to periodically compare vital parameters and results of the independent redundant units, requiring agreement of all compared parameters to assert or maintain a permissive output. If the units do not agree, safety-critical functions and outputs must default to a known safe state.

(iii) N-version programming concept. This concept requires a processor-based product to use at least two software programs performing identical functions and executing

concurrently in a cycle. The software programs must be written by independent teams, using different tools. The multiple independently written software programs comprise a redundant system, and may be executed either on separate hardware units (which may or may not be identical) or within one hardware unit. A means is to be provided to compare the results and output states of the multiple redundant software systems. If the system results do not agree, then the safety-critical functions and outputs must default to a known safe state.

(iv) Numerical assurance concept. This concept requires that the state of each vital parameter of the product or system be uniquely represented by a large encoded numerical value, such that permissive results are calculated by pseudo-randomly combining the representative numerical values of each of the critical constituent parameters of a permissive decision. Vital algorithms must be entirely represented by data structures containing numerical values with verified characteristics, and no vital decisions are to be made in the executing software, only by the numerical representations themselves. In the event of critical failures, the safety-critical functions and outputs must default to a known safe state.

(v) Intrinsic fail-safe design concept. Intrinsically fail-safe hardware circuits or systems are those that employ discrete mechanical and/or electrical components. The fail-safe operation for a product or subsystem designed using this principle concept requires a verification that the effect of every relevant failure mode of each component, and relevant combinations of component failure modes, be considered, analyzed, and documented. This is typically performed by a comprehensive failure modes and effects analysis (FMEA) which must show no residual unmitigated failures. In the event of critical failures, the safety-critical functions and outputs must default to a known safe state.

(5) Human Factors Engineering Principle**.** The product design must sufficiently incorporate human factors engineering that is appropriate to the complexity of the product; the educational, mental, and physical capabilities of the intended operators and maintainers, the degree of required human interaction with the component; and the environment in which the product will be used.

(6) System Safety Under External Influences. The product must be shown to operate safely when subjected to different external influences, including: (i) Electrical influences such as power supply anomalies/transients, abnormal/improper input conditions (e.g., outside of normal range inputs relative to amplitude and frequency, unusual combinations of inputs) including those related to a human operator, and others such as electromagnetic interference or electrostatic discharges, or both; (ii) Mechanical influences such as vibration and shock; and (iii) Climatic conditions such as temperature and humidity.

(7) System Safety After Modifications. Safety must be ensured following modifications to the hardware or software, or both. All or some of the concerns identified in this paragraph

may be applicable depending upon the nature and extent of the modifications. Such modifications must follow all of the concept, design, implementation and test processes and principles as documented in the PSP for the original product. Regression testing must be comprehensive and documented to include all scenarios which are affected by the change made, and the operating modes of the changed product during normal and failure state (fallback) operation.

(c) Standards Acceptable For Verification and Validation. (1) The standards employed for verification or validation, or both, of products subject to this subpart must be sufficient to support achievement of the applicable requirements of subpart H and subpart I of this part.

(2) U.S. Department of Defense Military Standard (MIL-STD) 882C, "System Safety Program Requirements" (January 19, 1993), is recognized as providing appropriate risk analysis processes for incorporation into verification and validation standards.

(3) The following standards designed for application to processor-based signal and train control systems are recognized as acceptable with respect to applicable elements of safety analysis required by subpart H and subpart I of this part. The latest versions of the standards listed below should be used unless otherwise provided.
(i) IEEE standards as follows:

(A) IEEE 1483-2000, Standard for the Verification of Vital Functions in Processor-Based Systems Used in Rail Transit Control.

(B) IEEE 1474.2-2003, Standard for user interface requirements in communications based train control (CBTC) systems.

(C) IEEE 1474.1-2004, Standard for Communications-Based Train Control (CBTC) Performance and Functional Requirements.

(ii) CENELEC Standards as follows:

(A) EN50129: 2003, Railway Applications: Communications, Signaling, and Processing Systems-Safety Related Electronic Systems for Signaling; and

(B) EN50155:2001/A1:2002, Railway Applications: Electronic Equipment Used in Rolling Stock.

(iii) ATCS Specification 200 Communications Systems Architecture.

(iv) ATCS Specification 250 Message Formats.

(v) AAR-AREMA 2009 Communications and Signal Manual of Recommended Practices, Part 16, Part 17, 21, and 23.

(vi) Safety of High Speed Ground Transportation Systems. Analytical Methodology for Safety Validation of Computer Controlled Subsystems. Volume II: Development of a Safety Validation Methodology. Final Report September 1995. Author: Jonathan F. Luedeke, Battelle. DOT/FRA/ORD-95/10.2.

(vii) IEC 61508 (International Electrotechnical Commission), Functional Safety of Electrical/Electronic/Programmable/Electronic Safety (E/E/P/ES) Related Systems, Parts 1-7 as follows:

(A) IEC 61508-1 (1998-12) Part 1: General requirements and IEC 61508-1 Corr. (1999-05) Corrigendum 1-Part 1:General Requirements.

(B) IEC 61508-2 (2000-05) Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems.
(C) IEC 61508-3 (1998-12) Part 3: Software requirements and IEC 61508-3 Corr.1(1999-04) Corrigendum 1-Part3: Software requirements.

(D) IEC 61508-4 (1998-12) Part 4: Definitions and abbreviations and IEC 61508- 4 Corr.1(1999-04) Corrigendum 1-Part 4: Definitions and abbreviations.

(E) IEC 61508-5 (1998-12) Part 5: Examples of methods for the determination of safety integrity levels and IEC 61508-5 Corr.1 (1999-04) Corrigendum 1 Part 5: Examples of methods for determination of safety integrity levels.

(F) IEC 61508-6 (2000-04) Part 6: Guidelines on the applications of IEC 61508- 2 and -3.

(G) IEC 61508-7 (2000-03) Part 7: Overview of techniques and measures.

(H) IEC62278: 2002, Railway Applications: Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS);

(I) IEC62279: 2002 Railway Applications: Software for Railway Control and Protection Systems;

(4) Use of unpublished standards, including proprietary standards, is authorized to the extent that such standards are shown to achieve the requirements of this part. However, any such standards shall be available for inspection and replication by FRA and for public examination in any public proceeding before the FRA to which they are relevant.

The burden for the requirements of Appendix C is included under § 236.905,

§ 236.907(a)(9), § 236.1013 and § 236.1015 above. Consequently, there is no additional burden associated with these requirements.

Appendix D - Independent Review of Verification and Validation

(a) This appendix provides minimum requirements for independent third-party assessment of product safety verification and validation pursuant to subpart H of this part. The goal of this assessment is to provide an independent evaluation of the product manufacturer's utilization of safety design practices during the product's development and testing phases, as required by the applicable railroad's RSPP, the product PSP, the requirements of subpart H of this part, and any other previously agreed-upon controlling documents or standards.

(b) The supplier may request advice and assistance of the reviewer concerning the actions identified in paragraphs (c) through (g). However, the reviewer should not engage in design efforts in order to preserve the reviewer's independence and maintain the supplier's proprietary right to the PTC system.

(c) The supplier must provide the reviewer access to any and all documentation that the reviewer requests and attendance at any design review or walk through that the reviewer determines as necessary to complete and accomplish the third party assessment. The reviewer may be accompanied by representatives of FRA as necessary, in FRA's judgment, for FRA to monitor the assessment.

(d) The reviewer shall evaluate with respect to safety and comment on the adequacy of the processes which the supplier applies to the design and development of the product. At a minimum, the reviewer shall compare the supplier processes with acceptable methodology and employ any other such tests or comparisons if they have been agreed to previously with FRA. Based on these analyses, the reviewer shall identify and document any significant safety vulnerabilities which are not adequately mitigated by the supplier's (or user's) processes. Finally, the reviewer shall evaluate the adequacy of the railroad's applicable PSP, or PTCSP, and any other documents pertinent to the PTC system being assessed.

(e) The reviewer shall analyze the Preliminary Hazard Analysis (PHA) for comprehensiveness and compliance with industry, national, or international standards.

(f) The reviewer shall analyze all Fault Tree Analyses (FTA), Failure Mode and Effects Criticality Analysis (FMECA), and other hazard analyses for completeness, correctness, and compliance with industry, national, or international standards.

(g) The reviewer shall randomly select various safety-critical software modules, as well as safety-critical hardware components if required by FRA for audit to verify whether the

vendors and industry, national, or international standards were followed. The number of modules audited must be determined as a representative number sufficient to provide confidence that all unaudited modules were developed in compliance industry, national, or international standards

(h) The reviewer shall evaluate and comment on the plan for installation and test procedures of the PTC system for revenue service. (i) The reviewer shall prepare a final report of the assessment. The report shall be submitted to the railroad prior to the commencement of installation testing and contain at least the following information: (1) Reviewer's evaluation of the adequacy of the PSP or PTCSP including the supplier's MTTHE and risk estimates for the PTC system, and the supplier's confidence interval in these estimates; (2) PTC system vulnerabilities, potentially hazardous failure modes, or potentially hazardous operating circumstances which the reviewer felt were not adequately identified, tracked or mitigated; (3) A clear statement of position for all parties involved for each PTC system vulnerability cited by the reviewer; (4) Identification of any documentation or information sought by the reviewer that was denied, incomplete, or inadequate; (5) A listing of each applicable vendor, industry, national or international standard, process, or procedure which was not properly followed; (6) Identification of the hardware and software verification and validation procedures for the PTC system's safety-critical applications, and the reviewer's evaluation of the adequacy of these procedures; (7) Methods employed by PTC system manufacturer to develop safety-critical software, such as use of structured language, code checks, modularity, or other similar generally acceptable techniques; and (8) If directed by FRA, methods employed by PTC system manufacturer to develop safety-critical hardware.

The burden for this entire requirement is included under § 236.913(h) and§ 236.1015.

Appendix F – Requirements of Mandatory Independent Third-party Assessment of PTC System Safety Verification and Validation

(a) This appendix provides minimum requirements for mandatory independent third-party assessment of PTC system safety verification and validation pursuant to subpart H or I of this part. The goal of this assessment is to provide an independent evaluation of the PTC system manufacturer's utilization of safety design practices during the PTC system's development and testing phases, as required by the <u>applicable PSP, PTCDP, and PTCSP, the applicable requirements of subpart H or I of this part</u>, and any other previously agreed-upon controlling documents or standards.

(b) The supplier may request advice and assistance of the independent third-party reviewer concerning the actions identified in paragraphs (c) through (g) of this appendix. However, the reviewer should not engage in design efforts in order to preserve the reviewer's independence and maintain the supplier's proprietary right to the PTC system.

(c) The supplier shall provide the reviewer access to any and all documentation that the reviewer requests and attendance at any design review or walkthrough that the reviewer determines as necessary to complete and accomplish the third party assessment. The reviewer may be accompanied by representatives of FRA as necessary, in FRA's judgment, for FRA to monitor the assessment.

(d) The reviewer shall evaluate with respect to safety and comment on the adequacy of the processes which the supplier applies to the design and development of the PTC system. At a minimum, the reviewer shall compare the supplier processes with acceptable methodology and employ any other such tests or comparisons if they have been agreed to previously with FRA. Based on these analyses, the reviewer shall identify and document any significant safety vulnerabilities which are not adequately mitigated by the supplier's (or user's) processes. Finally, the reviewer shall evaluate the adequacy of the railroad's applicable PSP or PTCSP**,** and any other documents pertinent to the PTC system being assessed.

(e) The reviewer shall analyze the Preliminary Hazard Analysis (PHA) for comprehensiveness and compliance with industry, national, or international standards.

(f) The reviewer shall analyze all Fault Tree Analyses (FTA), Failure Mode and Effects Criticality Analysis (FMECA), and other hazard analyses for completeness, correctness, and compliance with industry, national, or international standards.

(g) The reviewer shall randomly select various safety-critical software modules, as well as safety-critical hardware components if required by FRA for audit to verify whether the vendors and industry, national, or international standards were followed. The number of modules audited must be determined as a representative number sufficient to provide confidence that all unaudited modules were developed in compliance industry, national, or international standards

(h) The reviewer shall evaluate and comment on the plan for installation and test procedures of the PTC system for revenue service.

(i) The reviewer shall prepare a final report of the assessment.

(2) The report shall be submitted to the railroad prior to the commencement of installation testing and contain at least the following information:

(i) Reviewer's evaluation of the adequacy of the PSP or PTCSP including the supplier's MTTHE and risk estimates for the PTC system, and the supplier's confidence interval in these estimates;

(ii) PTC system vulnerabilities, potentially hazardous failure modes, or potentially hazardous operating circumstances which the reviewer felt were not adequately identified, tracked or mitigated;

(iii) A clear statement of position for all parties involved for each PTC system vulnerability cited by the reviewer;

(iv) Identification of any documentation or information sought by the reviewer that was denied, incomplete, or inadequate;

(v) A listing of each applicable vendor, industry, national or international standard, process, or procedure which was not properly followed;

(vi) Identification of the hardware and software verification and validation procedures for the PTC system's safety-critical applications, and the reviewer's evaluation of the adequacy of these procedures;

(vii) Methods employed by PTC system manufacturer to develop safety-critical software, such as use of structured language, code checks, modularity, or other similar generally acceptable techniques; and

(viii) If directed by FRA, methods employed by PTC system manufacturer to develop safety-critical hardware.

The burden for the requirements of Appendix C is included under § 236.905, § 236.907), § 236.1013 and § 236.1015 above. Consequently, there is no additional burden associated with these requirements.

The total burden for new subpart I is 1,606,127 hours.

The total burden for this entire information collection is 2,979,799 hours.

13. PROVIDE AN ESTIMATE OF THE TOTAL ANNUAL COST BURDEN TO RESPONDENTS OR RECORDKEEPERS RESULTING FROM THE COLLECTION OF INFORMATION. (DO NOT INCLUDE THE COSTS OF ANY HOUR BURDEN SHOWN IN ITEMS 12 AND 14).

- **THE COST ESTIMATES SHOULD BE SPLIT INTO TWO COMPONENTS: (A) A TOTAL CAPITAL AND START-UP COST COMPONENT (ANNUALIZED OVER IT EXPECTED USEFUL LIFE); AND (B) A TOTAL OPERATION AND MAINTENANCE AND PURCHASE OF SERVICES COMPONENT. THE ESTIMATES SHOULD TAKE INTO ACCOUNT COSTS ASSOCIATED WITH GENERATING,**

MAINTAINING, AND DISCLOSING OR PROVIDING THE INFORMATION. INCLUDE DESCRIPTIONS OF METHODS USED TO ESTIMATE MAJOR COSTS FACTORS INCLUDING SYSTEM AND TECHNOLOGY ACQUISITION, EXPECTED USEFUL LIFE OF CAPITAL EQUIPMENT, THE DISCOUNT RATE(S), AND THE TIME PERIOD OVER WHICH COSTS WILL BE INCURRED. CAPITAL AND START-UP COSTS INCLUDE, AMONG OTHER ITEMS, PREPARATIONS FOR COLLECTING INFORMATION SUCH AS PURCHASING COMPUTERS AND SOFTWARE; MONITORING, SAMPLING, DRILLING AND TESTING EQUIPMENT; AND RECORD STORAGE FACILITIES.

- **IF COST ESTIMATES ARE EXPECTED TO VARY WIDELY, AGENCIES SHOULD PRESENT RANGES OF COST BURDENS AND EXPLAIN THE REASONS FOR THE VARIANCE. THE COST OF PURCHASING OR CONTRACTING OUT INFORMATION COLLECTION SERVICES SHOULD BE A PART OF THIS COST BURDEN ESTIMATE. IN DEVELOPING COST BURDEN ESTIMATES, AGENCIES MAY CONSULT WITH A SAMPLE OF RESPONDENTS (FEWER THAN 10), UTILIZE THE 60-DAY PRE-OMB SUBMISSION PUBLIC COMMENT PROCESS AND USE EXISTING ECONOMIC OR REGULATORY IMPACT ANALYSIS ASSOCIATED WITH THE RULEMAKING CONTAINING THE INFORMATION COLLECTION, AS APPROPRIATE.**

- **GENERALLY, ESTIMATES SHOULD NOT INCLUDE PURCHASES OF EQUIPMENT OR SERVICES, OR PORTIONS THEREOF, MADE (1) PRIOR TO OCTOBER 1, 1995, (2) TO ACHIEVE REGULATORY COMPLIANCE WITH REQUIREMENTS NOT ASSOCIATED WITH THE INFORMATION COLLECTION, (3) FOR REASONS OTHER THAN TO PROVIDE INFORMATION OR KEEP RECORDS FOR THE GOVERNMENT, OR (4) AS PART OF CUSTOMARY AND USUAL BUSINESS OR PRIVATE PRACTICES.**

FRA estimated that the 30 railroads affected by this rulemaking will need to create databases – one a hazard log and the other for training -- to comply with the rule's requirements. The cost to do this using Oracle will be approximately $15,000 per data base or a total of $30,000. The total annual cost is $900,000

Additionally, programming/debugging costs are estimated to run $60,000 (and will involve two people taking 240 hours each to complete this assignment at $125 per hour, including overhead). The estimated annual cost for debugging is $1.8 million.

Furthermore, there will be contractor support costs for 23 of the 30 affected railroads.

FRA estimates that these costs will be incurred each year for a period of six (6) years, and will entail the services of five (5) people at approximately $300,000 per year, or a total of $1.5 million for contractor services. The estimated annual costs to respondents for these contractor support service is $5,750,000 (23 x $1.5 million divided by 6).

Summary of Costs

Databases (30 x $30,000)	$ 900,000
Programming/Debugging	$ 1,800,000
Contractor Support Services	$ 5,750,000
Total Estimated Cost	$ 8,450,000

There are other costs as well. In keeping with Government Paperwork Elimination Act (GPEA), FRA is in the process of making electronic reporting more widely available to railroads. The pace of conversion from paper to the use of advanced information technology (electronic reporting/recordkeeping) is, for the most part, dictated by the railroads themselves. In the meantime, it is likely respondents will incur mailing costs regarding documentation that they must submit to FRA for both Subpart H and new Subpart I, as well as incurring the cost of purchasing envelopes.

Subpart H

$ 33.00	-	Envelopes - 300 9" x 12" @ 11 cents per envelope.
$ 1,500.00	-	Postage - @ approximately $5 per complete envelope.
$1,533.00	-	Total Additional Costs

Subpart I

$ 227.15	-	Envelopes - 2,065 9" x 12" @ 11 cents per envelope.
$10,325.00	-	Postage - @ approximately $5 per complete envelope.
$10,552.15	-	Total Additional Costs

$12,085.15 - **Grand Total Additional Costs** (Subparts H and I)

$8,462,085.15 - Grand Total All Costs to Respondents

14. PROVIDE ESTIMATES OF ANNUALIZED COST TO THE FEDERAL GOVERNMENT. ALSO, PROVIDE A DESCRIPTION OF THE METHOD USED TO ESTIMATE COSTS, WHICH SHOULD INCLUDE QUANTIFICATION OF HOURS, OPERATIONAL EXPENSES SUCH AS EQUIPMENT, OVERHEAD, PRINTING, AND SUPPORT STAFF, AND ANY OTHER EXPENSE THAT WOULD NOT HAVE BEEN INCURRED WITHOUT THIS COLLECTION OF INFORMATION. AGENCIES ALSO MAY AGGREGATE COST ESTIMATES FROM ITEMS 12, 13, AND 14 IN A SINGLE TABLE.

There is no additional cost to the Federal Government in connection with these information collection requirements. The required documentation will be examined by current Signal and Train Control analysts in FRA's Office of Safety as part of their routine duties. It is not anticipated that any new employees will be hired to review this information.

15. EXPLAIN THE REASONS FOR ANY PROGRAM CHANGES OR ADJUSTMENTS REPORTED IN ITEMS 13 OR 14 OF THE OMB FORM 83-I.

The total burden for this information collection had increased by 2,728,833 hours from the previous submission. The increase in burden is due to one (1) **program change** in **Subpart H** and 38 **adjustments** in the estimates for **Subpart A** (§ 236.18) and **Subpart H**. It is also due to the new requirements in **Subpart I**, which are all **program changes**.

Adjustments in **Subpart H** included both *increases* and *decreases* in burden. The following requirements reflect revised estimates which resulted in burden *increases*:

(1.) Under § 236.18, Software Management Control Plan, FRA *increased* its estimate of the number of software management control plans that will be adopted by railroads (from 100 to 184). This change in estimate *increased* the burden by 385,600 *hours* (from 10,000 hours to 395,600 hours).

(2.) Under § 236.18, Software Management Control Plan (Subsequent Years), FRA *increased* its estimate of the number of software management control plan updates that will be adopted by railroads (from zero (0) to 20). This change in estimate *increased* the burden by *30 hours* (from zero (0) hours to 30 hours).

(3.) Under § 236.905(i), Railroad Safety Program Plan, FRA decreased its estimate of the number of documents it will receive in response to agency requests for additional information (from four (4) documents to one (1) document), but *increased* its estimate of the burden time per response (from 16 hours to 400 hours). These changes in estimate

increased the burden by *336 hours* (from 64 hours to 400 hours).

(4.) Under § 236.905B, Railroad Safety Program Plan, FRA decreased its estimate of the number of RSPP modifications that it will receive (from two (2) to one (1)), but *increased* its estimate of the burden time per response (from 60 hours to 400 hours). This change in estimate *increased* the burden by *280 hours* (from 120 hours to 400 hours).

(5.) Under § 236.907, Product Safety Plan, FRA increased its estimate of the burden time per response to complete each of the five (5) estimated PSPs (from 240 hours to 6,400 hours). This change in estimate *increased* the burden by *30,800 hours* (from 1,200 hours to 32,000 hours).

(6.) Under § 236.909(b), Minimum Performance Standard, FRA decreased its estimate of the number of PSP approval petitions (from seven (7) to two (2)), but *increased* its estimate of the burden time per response (from eight (8) hours to 19,200 hours). These changes in estimate *increased* the burden by *38,344 hours* (from 56 hours to 38,400 hours).

(7.) Under § 236.913(a), Filing and Approval of PSPs, FRA decreased its estimate of the number of joint PSPs/notifications that it will receive (from two (2) to one (1)), but *increased* its estimate of the time per response (from 240 hours to 25,600 hours). These changes in estimate *increased* the burden by *25,120 hours* (from 480 hours to 25,600 hours).

(8.) Under § 236.913(b), Filing and Approval of PSPs, FRA decreased its estimate of the number of joint filings/approval petitions that it will receive (from 20 to six (6), but *increased* its estimate of the time per response (from 40 hours to 1,928 hours). These changes in estimate *increased* the burden by *10,768 hours* (from 800 hours to 11,568 hours).

(9.) Under § 236.913(c)(2), Filing and Approval of PSPs, FRA decreased its estimate of the number of data calls/additional documents that it will receive (from 13 to two (2), but increased its estimate of the time per response (from 40 hours to 800 hours). These changes in estimate *increased* the burden by *1,080 hours* (from 520 hours to 1,600 hours).

(10.) Under § 236.913(d)(iii), Filing and Approval of PSPs, FRA *increased* its estimate of the number of consultations that will occur (from five (5) to six (6). This change in estimate *increased* the burden by *120 hours* (from 600 hours to 720 hours).

(11.) Under § 236.913(e), Filing and Approval of PSPs, FRA decreased its estimate of the number of comments/letters that will be sent to the agency in response to informational filings/special approval petitions made to FRA (from 10 to seven (7), but *increased* its estimate of the time per response (from eight (8) hours to 240 hours). These changes in

estimate *increased* the burden by *1,600 hours* (from 80 hours to 1,680 hours).

(12.) Under § 236.913(h), Filing and Approval of PSPs, FRA decreased its estimate of the number of third party assessment reports that it will receive (from three (3) to one (1), but *increased* its estimate of the time per response (from 4,000 hours to 104,000 hours). These changes in estimate *increased* the burden by *92,000 hours* (from 12,000 hours to 104,000 hours).

(13.) Under § 236.913(h)(i), Filing and Approval of PSPs, FRA *increased* its estimate of the time per response (from 40 hours to 160 hours). This change in estimate *increased* the burden by *1,800 hours* (from 600 hours to 2,400 hours).

(14.) Under § 236.913(j), Filing and Approval of PSPs, FRA *increased* its estimate of the number of field testing/informational filing documents that it will receive (from zero (0) to six (6)). This change in estimate *increased* the burden by *19,200 hours* (from zero (0) hours to 19,200 hours).

(15.) Under § 236.917(a), Retention of Records, FRA did not previously account for the results of tests and inspections specified in the railroads Product Safety Plans (PSPs), which is not a new requirement. As a result, FRA *increased* its estimate of the number of records that will be completed and kept by railroads (from zero (0) to three (3)). This change in estimate *increased* the burden by *360,000 hours* (from zero (0) hours to 360,000 hours).

(16.) Under § 236.917(b), Retention of Records, FRA decreased its estimate of the number of reports that it will receive (from five (5) to one (1), but *increased* its estimate of the burden time per response (from 20 hours to 104 hours). These changes in estimate *increased* the burden by *four (4) hours* (from 100 hours to 104 hours).
(17.) Under § 236.919(b), Operations and Maintenance Manual, FRA *increased* its estimate of the number of plans that will be completed by railroads (from five (5) to six (6) and *increased* its estimate of the burden time per response (from 200 hours to 53,335 hours). These changes in estimate *increased* the burden by *319,010 hours* (from 1,000 hours to 320,010 hours).

(18.) Under § 236.919(c), Operations and Maintenance Manual, FRA *increased* its estimate of hardware/software/firmware revisions that will be completed (from three (3) to six (6)) and *increased* its estimate of the burden time per response (from 40 hours to 6,440 hours). These changes in estimate *increased* the burden by *38,520 hours* (from 120 hours to 38,640 hours).

(19.) Under § 236.921(a), Training and Qualifications Program, FRA *increased* its estimate of the number of training programs developed by railroads (from five (5) to six (6)). This change in estimate *increased* the burden by *400 hours* (from 2,000 hours to

2,400 hours).

(20.) Under § 236.923(a), Task Analysis and Basic Requirements, FRA *increased* its estimate of the number of documents that will be completed to meet this requirement (from zero (0) to six (6)). This change in estimate *increased* the burden by *4,320 hours* (from zero (0) hours to 4,320 hours).

Total *increases* then from *adjustments* amount to *1,329,332 hours*

As mentioned earlier, there were also a**djustments** which *decreased* the burden. The following requirements reflect revised estimates which resulted in burden *decreases*:

(1.) Under § 236.905A, Railroad Safety Program Plan (RSPP), FRA *decreased* its estimate of plans that the agency will receive (from 15 to six (6)) and *decreased* its estimate of the burden time per response (from 250 hours to 135 hours). These changes in estimate de*creased* the burden by 2,940 *hours* (from 3,750 hours to 810 hours).

(2.) Under § 236.909(c), Minimum Performance Standard, FRA *decreased* its estimate of the number of risk assessments that will be completed (from five (5) to zero (0)). This changes in estimate de*creased* the burden by *15,000 hours* (from 15,000 hours to zero (0) hours).

(3.) Under § 236.909(c), Minimum Performance Standard, FRA *decreased* its estimate of the number of full risk assessments/amended documents that will be completed by railroads (from seven (7) to zero (0)). This change in estimate *decreased* the burden by *8,400 hours* (from 8,400 hours to zero (0) hours).

(4.) Under § 236.909(d), Minimum Performance Standard, FRA *decreased* its estimate of the number of modified or amended abbreviated risk assessments that will be completed by railroads/suppliers (from five (5) to zero (0), since the burden for this requirement is included under that of § 236.907 and that of § 236.909(b). This change in estimate *decreased* the burden by *1,200 hours* (from 1,200 hours to zero (0) hours).

(5.) Under § 236.909(d), Minimum Performance Standard (Subsequent Years), FRA *decreased* its estimate of the number of modified or amended abbreviated risk assessments that will be completed by railroads (from five (5) to zero (0). This change in estimate *decreased* the burden by 3*00 hours* (from 300 hours to zero (0) hours).

(6.) Under § 236.909(e)(2), Minimum Performance Standard, FRA *decreased* its estimate of the number of alternative risk assessments that it will receive (from five (5) to zero (0)). This change in estimate de*creased* the burden by *15,000 hours* (from 15,000 hours to zero (0) hours).

(7.) Under § 236.911, Exclusions, FRA *decreased* its estimate of the number of additional PSPs that it will receive (from two (2) to zero (0)). This change in estimate *decreased* the burden by *480 hours* (from 480 hours to zero (0) hours).

(8.) Under § 236.913(d)(ii), Filing and Approval of PSPs, FRA increased its estimate of the number of data calls/additional documents that it will receive (from five (5) to six (6), but *decreased* its estimate of the time per response (from 40 hours to 16 hours). These changes in estimate *decreased* the burden by *104 hours* (from 200 hours to 196 hours).

(9.) Under § 236.913(d)(iv), Filing and Approval of PSPs, FRA increased its estimate of the number of final approval petitions that it will receive (from five (5) to six (6), but *decreased* its estimate of the time per response (from 40 hours to 16 hours). These changes in estimate *decreased* the burden by *104 hours* (from 200 hours to 96 hours).

(10.) Under § 236.913(d)(v), Filing and Approval of PSPs, FRA *decreased* its estimate of the number of data calls/additional documents that it will receive (from 10 to zero (0), since the burden for this requirement is already included under that of § 236.913(d)(ii). This change in estimate *decreased* the burden by *800 hours* (from 800 hours to zero (0) hours).

(11.) Under § 236.913(d)(vi), Filing and Approval of PSPs, FRA *decreased* its estimate of the number of consultations that will occur (from 10 to zero (0), since the burden for this requirement is already included under that of § 236.913(d)(iii). This change in estimate *decreased* the burden by *400 hours* (from 400 hours to zero (0) hours).

(12.) Under § 236.913(d)(2), Filing and Approval of PSPs, FRA *decreased* its estimate of the number of petitions for special approval that it will receive (from three (3) to zero (0). This change in estimate *decreased* the burden by *90 hours* (from 90 hours to zero (0) hours).

(13.) Under § 236.913(d)(2)(i), Filing and Approval of PSPs, FRA *decreased* its estimate of the number of additional documents that it will receive (from six (6) to zero (0). This change in estimate *decreased* the burden by *240 hours* (from 240 hours to zero (0) hours).

(14.) Under § 236.917(a), Retention of Records, FRA *decreased* its estimate of the number of records that will be maintained by railroads (from 15 to zero (0)), since the burden for this requirement is included under that of § 236.905 and that of § 236.919. This change in estimate *decreased* the burden by 600 *hours* (from 600 hours to zero (0) hours).

(15.) Under § 236.919(a), Operations and Maintenance Manual, FRA *decreased* its estimate of the number of Operations and Maintenance Manuals that will be completed by railroads (from 20 to six (6)) and *decreased* its estimate of the burden time per response

(from 120 hours to 40 hours). These changes in estimate *decreased* the burden by *2,160 hours* (from 2,400 hours to 240 hours).

(16.) Under § 236.919(d), Operations and Maintenance Manual, FRA *decreased* its estimate of identifications/markings of safety critical components (from 10,000 to zero (0)), since the burden for this requirement is already included under that of § 236.919(c). This change in estimate *decreased* the burden by 3,333 *hours* (from 3,333 hours to zero (0) hours).

(17.) Under § 236.921(b), Training and Qualifications Program, FRA *decreased* its estimate of the number of employees trained under Subpart H (from 4,400 to 320). This change in estimate decreased the burden by *155,600 hours* (from 168,000 hours to 12,400 hours).

(18.) Under § 236.923(b), Task Analysis and Basic Requirements, FRA *decreased* its estimate of the number of records that will be completed by railroads (from 4,400 to 350). This change in estimate *decreased* the burden by 675 *hours* (from 733 hours to 58 hours).

Total *decreases* then from **adjustmen***ts* amount to *207,426 hours*.

Overall, **adjustments** in **subpart H** *increased* the burden by *1,121,906 hours*

As noted above, there was one **program change** in **subpart H** that increased the burden. It is as follows:

(1.) Under § 236.909(e)(1), Minimum Performance Standard, there is a new requirement that total risk assessments include a supporting sensitivity analysis. This **program change** *increased* the burden by *800 hours* (from zero (0) hours to 800 hours).

Total **program changes** in **subpart H** then *increased* the burden by *800 hours*.

Total **program changes** from the new requirements in **subpart I** *increased* the burden by *1,606,127 hours*.

Total **program changes** in **subpart H** and **subpart I** *increased* the burden by *1,606,927 hours*.

Currently, the total burden in the OMB inventory shows 250,966 hours, while the present submission exhibits a burden total of 2,979,799 hours. Hence, there is an increase of *2,728,833 hours* in the total burden.

Total cost to respondents has increased by $8,460,981.39 from the previous estimate. Almost all of the increase in costs to respondents is due **program change**, resulting from

costs associated with the new requirements in **Subpart I**. These costs are enumerated above and total $8,460,552.15. Furthermore, there was an **adjustment** or revised estimated for the previously estimated costs associated with Subpart H. The new estimates totaled $1,533.00, while the previous estimates amounted to $1,103.76. Hence, there is an increase of $429.24. [*Please note: The OMB incorrectly lists the previously estimated costs to respondents as $2,528. The last submission shows a total cost of $1,103.76*.]

16. FOR COLLECTIONS OF INFORMATION WHOSE RESULTS WILL BE PUBLISHED, OUTLINE PLANS FOR TABULATION, AND PUBLICATION. ADDRESS ANY COMPLEX ANALYTICAL TECHNIQUES THAT WILL BE USED. PROVIDE THE TIME SCHEDULE FOR THE ENTIRE PROJECT, INCLUDING BEGINNING AND ENDING DATES OF THE COLLECTION OF INFORMATION, COMPLETION OF REPORT, PUBLICATION DATES, AND OTHER ACTIONS.

There are no plans for publication regarding these information collection requirements.

17. IF SEEKING APPROVAL TO NOT DISPLAY THE EXPIRATION DATE FOR OMB APPROVAL OF THE INFORMATION COLLECTION, EXPLAIN THE REASONS THAT DISPLAY WOULD BE INAPPROPRIATE.

Once OMB approval is received, FRA will publish the approval number for these information collection requirements in the Federal Register.

18. EXPLAIN EACH EXCEPTION TO THE CERTIFICATION STATEMENT IDENTIFIED IN ITEM 19, "CERTIFICATION FOR PAPERWORK REDUCTION ACT SUBMISSIONS," OF OMB FORM 83-I.

No exceptions are taken at this time.

Meeting Department of Transportation (DOT) Strategic Goals

This information collection supports all five DOT strategic goals. First, it supports the Department's highest strategic goal, namely transportation safety. The "Positive Train Control" rule and corresponding information collection seeks to reduce the number and severity of railroad accidents/incidents, particularly train-to-train collisions, and ensuing casualties to train crews and passengers by ensuring that processor-based signal and train control ("PTC") systems are not put into revenue service until FRA has carefully reviewed all the required documentation, and is satisfied that such systems meet the proposed "high level" performance standard. The "performance standard" provides that any new signal and train control system meets or exceeds the safety performance of the

existing system. FRA aims to use the information collected to facilitate safety improvement through accelerated introduction of new technology. FRA believes the information collected will additionally promote the public health and safety by reducing the number and extent of injuries to roadway and signal workers by ensuring that these employees are thoroughly trained regarding the role of a processor-based train control ("PTC") system in establishing protection for workers and their equipment, whether at a work zone or while moving between work locations.

The information collected also supports the second DOT strategic goal of mobility. As these new systems become more widely available and are approved by FRA and put into revenue service, they will provide important benefits. As mentioned earlier, one of the main benefits of "PTC" systems will be enhanced rail safety. A national rail system which has less accidents/incidents will be a more attractive option for domestic travelers, a safer workplace for railroad employees, and safer to the public in general. Another expected benefit of "PTC" systems will be improved train travel times. Such improvements will further increase the attractiveness of rail transport to larger numbers of people. This new technology will provide a system that is more integrated and will serve to make rail travel more viable and, therefore, more accessible. A more efficient rail system will, naturally, aid in providing flexibility of choices.

Additionally, the information collected supports the third DOT strategic goal of economic growth and trade. The use and expansion of "PTC" systems will create a more efficient and more cost-effective national rail transportation system (corridor-by-corridor). Producers, as a result of lower shipping costs, will be able to move a greater number of goods by rail. This, in turn, will help make U.S. products more competitive and will serve to promote greater trade with Canada and Mexico. Increased domestic demand for products (resulting from lower prices) and increased trade with America's neighbors will facilitate growth of the domestic gross national product.

The collection of information supports the fourth DOT strategic goal of human and natural environment. By carefully reviewing and approving "PTC" systems that comply with the "high level" performance standard (meets or exceeds current levels of safety), FRA aims to reduce the number of accidents/incidents, especially train-to-train collisions. By reducing the number and severity of railroad accidents/incidents and resulting property damage, communities and the natural environment will be protected and preserved. It should be noted that a collision involving a train or trains carrying hazardous materials can cause great harm to the environment and surrounding communities. Fully approved and functioning "PTC" systems will help eliminate such occurrences, and thus will promote the sustainability and livability of communities throughout the country.

Finally, this information collection supports the DOT strategic goal of national security. A national rail system, which is more efficient because of approved "PTC" technology, will be able to quickly move both passenger and freight cars carrying men and materiel in

the event of a national emergency. In a world filled with terrorism, instability, and sudden crises, the ability to transport men and materiel to specific destinations on schedule will no doubt greatly serve the national interest and indeed promote national security.

In this information collection as in all its information collection activities, FRA seeks to do its very best to fulfill DOT Strategic Goals and to be an integral part of One DOT.