

## 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.**

This collection of information is a request for an extension of a currently approved submission. The Federal Railroad Administration (FRA) has revised the information in this collection – where appropriate and necessary – to reflect the most current data, and FRA’s experience over the past three years in implementing the requirements of this rule.

### Background

The Federal Railroad Administration (FRA) has broad statutory authority to regulate all areas of railroad safety. 49 U.S.C. 20103 (a); 49 CFR 1.49. The Federal Railroad Safety Act of 1970, Public Law 91-458, contained this broad grant of authority and supplemented the older rail safety laws then in existence. For instance, the Signal Inspection Act, 49 U.S.C. 26 (re-codified at 49 U.S.C. 20502 *et seq.* (1994)), has governed the installation and removal of signal equipment since its enactment August 26, 1937. Until July 5, 1994, the Federal railroad safety statutes existed as separate acts found primarily in Title 45 of the United States Code. On that date all of the acts were repealed and their provisions were re-codified into Title 49 Chapters 201-213. Pursuant to its general statutory rulemaking authority, FRA promulgates and enforces rules as part of a comprehensive regulatory program to address the safety of railroad track, signal systems, railroad communications, rolling stock, operating practices, passenger train emergency preparedness, alcohol and drug testing, locomotive engineer certification, and workplace safety.

In the area of railroad signal and train control systems, FRA has issued regulations – found at 49 CFR Part 236 – addressing the security of signal apparatus housings (49 CFR § 236.3), location of roadway signals (49 CFR § 236.21), and the testing of relays (49 CFR § 236.106). Part 236 was last amended in 1984. At that time, signal and train control functions were performed principally through use of electrical relays as the means of effecting system logic. This approach had proven itself capable of supporting a very high level of safety for over half a century. However, electronic controls were emerging on the scene, and several sections of the regulations were amended to take a more technology-neutral approach to the required functions (*see* §§ 236.8, 236.51, 236.101, 236.205, 236.311, 236.813a). This approach has fostered introduction of new, more cost

effective technology while providing FRA with strong enforcement powers over systems that fail to work as intended in the field.

Since that time, FRA has worked with railroads and suppliers to apply the principles embodied in the regulations to emerging technology and to identify and remedy initial weaknesses in some of the new products. As a result, thousands of interlocking controllers and other electronic applications are embedded in traditional signal systems. Further technological advances may provide opportunities to increase safety levels and achieve economic benefits as well. For instance, implementation of innovative positive train control systems may employ new ways of detecting trains, establishing secure routes, and processing information. This presents a far greater challenge to both signal and train control system developers and FRA. This challenge involves retaining a corporate memory of the intricate logic associated with railway signaling, while daring to use whole new approaches to implement that logic – at the same time stretching the technology to address risk reduction opportunities that previously were not available. For FRA, the challenge is to continue to be prepared to make safety-based decisions regarding this new technology, without impairing the development of this field. Providing general standards for the development and implementation of products utilizing this new technology is needed to facilitate realization of the potential of electronic control systems, as well as to facilitate safety and efficiency.

FRA has already used its authority to grant waivers and issue orders to support innovation in the field of train control technology. FRA has granted test waivers for the Union Pacific/Burlington Northern Santa Fe Positive Train Separation (PTS) project in the Pacific Northwest, the National Railroad Passenger Corporation (Amtrak) Incremental Train Control System (ITCS) in the State of Michigan, the CSX Transportation (CSXT) Communications-Based Train Management (CBTM) in South Carolina and Georgia, and the Alaska Railroad PTC project. On September 19, 1996, FRA granted conditional revenue demonstration authority for ITCS. In 1998, FRA issued a final order for the installation of the Advanced Civil Speed Enforcement System (ACSES) on the Northeast Corridor (63 FR 39343; Aug. 21, 1998). See also 64 FR 54410, Oct. 6, 1999 (delaying effective date of such order). Although FRA expects to continue its support for these current projects, the need for controlling principles in this area has become patently clear.

FRA's need to review its regulatory scheme with respect to emerging technology in the signal and control arena was acknowledged by Congress in Section 11 of the Rail Safety Enforcement and Review Act (RSERA) (P.L. 102-365; September 3, 1992), entitled "Railroad Radio Communications." The RSERA mandated that the Secretary conduct a safety inquiry to assess – among other areas – the status of advanced train control systems and the need for federal standards to ensure that such systems provide for positive train separation and are compatible nationwide. FRA conducted such an inquiry and submitted a comprehensive Report to Congress on July 8, 1994, entitled *Railroad Communications and Train Control* (1994 Report).

As part of the 1994 Report, FRA called for implementation of an action plan to deploy PTC systems. The report forecast 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 currently 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.

**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.**

The information is collected by FRA 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. 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 plans to use 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.

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.

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.

In sum, FRA uses this collection of information to ensure that new or novel Positive Train Control technologies are – at a minimum – as safe as the systems they would replace.

**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 this rule, FRA provides for electronic recordkeeping, or automated tracking systems. Specifically, the results of tests made in compliance with §§ 236.102 -236.109; 236.376-387, 236.576-236.577; 236.586-236.589; and 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).

**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 83-1), DESCRIBE ANY METHODS USED TO MINIMIZE BURDEN.**

The requirements of this Part do not apply to railroads which operate on track wholly separate from the general railroad system, and do not apply to rapid transit operations in urban areas which are not connected to the general system of transportation. In its regulatory evaluation accompanying the final rule, FRA made the determination that this rule will not have a substantial impact on a significant number of small entities.

Most small entities – defined as Class III railroads and commuter railroads serving fewer than 50,000 people (in accord with FRA policy per 49 CFR 209) – will be unaffected for the foreseeable future because they do not have signal or train control systems. Other small railroads have older wayside signal systems that are entirely or principally relay-based, and will also be unaffected or only lightly affected by the requirements of this rule.

Only if a small railroad elects to utilize a new microprocessor-based product will it become subject to the new subpart H promulgated by this final rule.

For new systems, subsystems and components, the railroad would need to produce or obtain two major documents: (1) a Railroad Safety Program Plan (RSPP), and (2) a Product Safety Plan (PSP). The RSPP would promulgate the railroads rules for PSPs and

the PSP would govern all aspects of the safety of the new system. FRA would have to approve the RSPP, and the more innovative or novel systems would also be subject to PSP approval (with others handled by informational filings). FRA anticipates that RSPPs will end up being boilerplate-style documents, with little variation among railroads. As FRA noted in its earlier information collection submission for the NPRM, the Association of American Railroads (AAR) and the American Short Line and Regional Railroad Association (ASLRRA) will most likely develop a model Railroad Safety Program Plan (RSPP) for small and short line railroads. These railroads will then customize the plan to the specifics of their railroad.

Concerning Product Safety Plans (PSPs), suppliers gather most of the data required concerning PSPs. Consequently, FRA PSPs – for the most part – are written by suppliers as part of the effort to sell their products. They then tailor the information they have to a particular railroad. This happens because the small railroads’ demand for processor-based signal systems is zero without such documents, as a system which may not be operated would have no utility. The suppliers and small railroads are likely to view the product as being the combination of documents and signal system. Moreover, many of the products which are developed are small systems.

Finally, over time implementation of train control systems subject to the new subpart H may affect some small railroads because they will be required, by adjoining larger railroads, to equip their locomotives with train control apparatus in order to operate on the larger railroad’s lines. In these cases, the host (larger) railroad provides the necessary safety plans and expertise, just as they now provide operating rules. The reasons for this are that the large railroad wants any entity using its tracks to use consistent safety procedures, and that small railroads generally serve as a low-cost way of assembling and dispersing carload traffic from which the larger railroad derives the largest share of the revenue (“division”). All these factors then should serve to significantly reduce the burden time and expense involved for affected small and short line railroads.

In sum, FRA has determined – in its Regulatory Impact Analysis that accompanied the final rule paperwork submission – that this rule and accompanying collection of information 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 this collection of information were not conducted, or conducted less frequently, FRA believes its ability to maintain rail safety in the U.S. 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, 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 – that new products not degrade rail safety – 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, there might be a higher incidence of train-to-train collisions with 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 railroad roadway workers were properly trained regarding the role of a processor-based train control system in establishing protection for workers and their equipment, whether at a work zone or while moving between work locations. The most likely result would be increased, and perhaps more severe, injuries to roadway and other rail (signal) workers. It is a vital part of FRA’s safety programs to prevent unnecessary harm to railroad employees.

In sum, the collection of information advances the goal of enhancing rail safety nationwide and thus aids FRA in fulfilling its 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 of theirs 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).

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.**

In accordance with the Paperwork Reduction Act of 1995, Public Law No.104-13, § 2, 109 Stat. 163 (1995) (codified as revised at 44 U.S.C. §§ 3501-3520), and its implementing regulations, 5 C.F.R. Part 1320, FRA published a notice in the Federal Register on February 26, 2008 (See 73 FR 10322) soliciting public comments on these information collection requirements. FRA received no comments in response to this notice.

#### Background

FRA published a notice of proposed rulemaking (NPRM) in the Federal Register on August 10, 2001 (see 66 FR 42352). FRA received quite a few comments in response to this NPRM. FRA extended the deadline for written comments in response to specific requests for additional time, and in order to ensure that all commenters had an opportunity to fully develop their observations. FRA did not receive a request for a hearing, and did not hold a hearing.

In all, FRA received a total of 27 comments addressing a variety of issues found in the

NPRM. FRA received a couple of comments suggesting that it come up with a sample Railroad Safety Program Plan (RSPP) and Product Safety Plan (PSP), as well as other required documents, on anyone of the current processor-based signal and train control systems acceptable to FRA to serve as guidelines for respondents. After carefully reviewing these two comments, FRA has determined that the agency will not be involved in the creation of sample documents. FRA notes that a review RSPP draft for the Illinois Project is already available for consideration, and RSPPs are intended to be general documents that may take a similar form on most railroads. FRA believes that suppliers and railroads will develop generic PSPs for most products that adequately address the requirements of the new Subpart. The final rule provides a detailed outline of required PSP elements, and the wide variety of products within the scope of the rule will require a range of adaptations in the format and content of PSPs.

FRA also received several comments on RSPPs contending that much of the information requested is information that does not typically reside with the railroad. One commenter declared: “The proposed rule requires railroads to possess expertise that is typically found only at the product manufacturing level and seldom, if ever, at the production application level. It is unlikely that many railroads would possess or be able to obtain, through independent analysis, the data required in § 236.905(b).” Although FRA understands and appreciates the commenter’s concerns, FRA has decided that railroads will remain primarily responsible for providing the requested information, as railroads have the primary responsibility for the safety of their operations. Railroads should make the necessary arrangements to ensure this information is readily available from the supplier for submission to the agency. Additionally regarding RSPPs and PSPs, one commenter observed that there was no indication as to the length of these documents, and wondered just how many pages they should be. In his words, “are they 5 pages each, 20 pages for one and 35 for another?” As noted above, FRA anticipates that RSPPs will be boilerplate style documents, with little variation among railroads, and that PSPs will, for the most part, be written by suppliers. In its Regulatory Impact Analysis accompanying this rule, FRA states that “it believes the average small railroad RSPP will be about fifty pages,” and “it estimates that a PSP for a small railroad will be approximately 100 pages.”

FRA received several comments concerning agency burden hour and burden cost estimates published with the NPRM. Commenters felt that FRA severely underestimated the burden on respondents. One commenter remarked: “It is strongly suggested that FRA has underestimated the burden of complying with the proposed rule by at least a factor of three.” Another commenter stated the following: “GETS [General Electric Transportation Systems] feels these estimates are significantly underestimated, and would suggest that an increase by a factor of 10 may be more appropriate for many of the tasks listed.” A third commenter observed that “[it] believes the table setting forth the estimated costs of the proposed information collection requirements significantly underestimates these costs.” In reviewing these comments and carefully re-examining each of the requirements of the rule, FRA realized that these commenters were right, and that FRA had greatly underestimated the burden times and corresponding burden costs

associated with each of the proposed rule's requirements. Accordingly, FRA has revised the burden times and the burden costs for all the final rule's requirements except one. In order to calculate these more accurate and more realistic numbers, FRA applied an appropriate multiplying factor to each requirement's earlier estimate, keeping in mind respondents' observations. As a result, the total burden hours for the final rule information collection submission were almost quadrupled from the previous submission. FRA believes the revised burden total more truly reflected the actual burden incurred by respondents.

FRA received another comment which looked at the PSP requirements and their relationship to cost. The commenter concluded that, generally, much of the information required in section 236.905 is not currently required for processor-based systems since they are typically designed independent of railroad operational characteristics. The commenter further reasoned that requiring an analysis of the system inclusive of these operating characteristics will increase the cost of development. As noted earlier, FRA believes that suppliers and railroads will develop generic PSPs for most products that adequately address the requirements of the new subpart without substantial additional expense. Also, as part of the design and evaluation process, it is essential to ensure that an adequate analysis of the features and capabilities is made to minimize the possibility that conflicts may result by the use of features resulting in a software fault. Since this analysis is a normal cost of software engineering development, FRA does not believe it imposes a significant cost beyond what should already be done when developing safety critical software.

Further comments on cost referred to the PSP requirement that it address safety verification and validation procedures. A couple of commenters stated that this would increase costs. One of them asserted: "Depending upon the interpretation of Subpart H, compliance will significantly increase the cost to design, verify, and validate not only systems of new and novel approaches but new systems based upon traditional time proven processor based methodologies as well." FRA believes verification and validation for safety are vital parts of the development of products. Verification and validation require forward planning. Consequently, the PSP should identify the test planning at each stage of development and the levels of rigor applied during the testing process. FRA will use this information to assure the adequacy and coverage of the tests are appropriate, and believes this information is essential.

FRA received other cost related comments. One comment on cost referred to risk assessments. One commenter stated: "Performance of an 'abbreviated' risk assessment to justify any change to products in service at the time of release of the final rule seems excessive and likely to represent a significant cost impact on the rail industry." In reviewing this comment, FRA wishes to make clear that the sole purpose of the risk assessment in this rule is to require railroads to produce certain safety risk data which will allow the agency to make informed decisions concerning projected safety costs and benefits. FRA feels this is a necessary component of the proposed performance standard

in order for FRA to be able to effectively carry out its statutory duties as a regulatory agency.

Another comment pertained to the cost of training to the railroads. This commenter expressed the belief that the costs are two-fold, comprised of the actual cost of training and the cost to the industry over time as computer-trained technicians leave the industry for better paying jobs with better hours. FRA believes the actual cost of training is inescapable. The burden of the initial training of the work force will be eased as employees and contractors become familiar with the equipment on which they are working. FRA believes that refresher training is less costly than initial training, and thus will ease some of the financial burden on railroads and contractors. In addition, FRA believes any projected costs based on trained technicians leaving the industry is speculative. The possibility that employees may leave any profession is always present and very hard to quantify. FRA believes the possibility of attrition is certainly no disincentive to adequately train employees for their current jobs.

Finally, FRA received a comment from the Association of American Railroads (AAR), expressing a concern that FRA's proposal does not facilitate implementation of electronic recordkeeping. AAR declared: "FRA's proposal does not facilitate implementation of electronic recordkeeping, and does not fulfill its obligations under GPEA, Public Law 105-277, Title XVII, 112 Stat. 2681-749 (Oct. 21, 1998). Proposed section 236.110 requires FRA approval of electronic recordkeeping systems for tracking test results. . . The requirement for FRA approval of an automated tracking system is, on its face, inconsistent with GPEA and the OMB guidance." AAR has raised this issue before in another rulemaking, specifically in its petition for reconsideration of the agency's new power brakes rule a few years ago. As FRA noted then, the requirement for FRA approval of automated tracking systems does not violate "the GPEA and OMB guidance." The GPEA guidance readily acknowledges the need for standards and procedures concerning electronic government and electronic recordkeeping. Under Implementation of GPEA (*see* Part I, Sec. 1), the guidance describes the policies agencies should follow. It reads:

Sections 1703 and 1705 of GPEA charge the Office of Management and Budget (OMB) with developing procedures for Executive agencies to follow in using and accepting electronic documents and signatures, including records required to be maintained under Federal programs and information that employers are required to store and file with Federal agencies about their employees.

FRA must conform to OMB guidelines and implicitly so too must railroads. FRA must also conform to Department of Justice guidelines regarding legal sufficiency of electronic documents and electronic signatures. Again, implicitly so too must railroads. Railroads must meet FRA requirements as well. The guidance clearly permits agency approval of automated tracking systems/electronic recordkeeping systems. Part I, Section 2 states:

GPEA recognizes that building and deploying electronic systems to complement and

replace paper-based systems should be consistent with the need to ensure that investments in information technology are economically prudent to accomplish the agency's mission, protect privacy, and ensure the security of the data . . . Accordingly, agencies should develop and implement plans, supported by an assessment of whether to use and accept documents in electronic form and to engage in electronic transactions.

As in other rulemakings, FRA here too requires approval of respondents' automated tracking systems to ensure that the accuracy, reliability, availability, integrity, security, and, where appropriate, confidentiality of vital data is established and maintained. Moreover, as it has done in the past, FRA here too will work closely with railroads to expedite their requests – to the greatest extent possible consistent with the agency's mission of promoting/enhancing rail safety and with its limited resources – to establish and implement agency approved automated tracking systems/electronic recordkeeping systems. FRA believes its procedures benefit the agency, railroads, and other affected entities, as well as enhance safety by ensuring the preservation of accurate, essential records.

Prior to the formulation of the proposed rule, FRA created the Rail Safety Advisory Committee (RSAC ) in March 1996. RSAC provides a forum for consensual rulemaking and program development. The Committee includes representatives from all of the agency's major customer groups, including railroads, labor organizations, suppliers and manufacturers, and other interested parties. Member groups include the following:

- American Association of Private Railroad Car Owners (AARPCO)
- American Association of State Highway & Transportation Officials (AASHTO)
- American Public Transit Association (APTA)
- American Short Line and Regional Railroad Association (ASLRRA)
- American Train Dispatchers Department/BLE (ATDD/BLE)
- Association of American Railroads (AAR)
- Association of Railway Museums (ARM)
- Association of State Rail Safety Managers
- Brotherhood of Locomotive Engineers (BLE)
- Brotherhood of Maintenance of Way Employees (BMWE)
- Brotherhood of Railroad Signalmen (BRS)
- Federal Railroad Administration (FRA)
- Federal Transit Administration (FTA) (non-voting)
- High Speed Rail/Maglev Association
- Hotel Employees & Restaurant Employees International Union
- International Association of Machinists and Aerospace Workers
- International Brotherhood of Boilermakers and Blacksmiths
- International Brotherhood of Electrical Workers (IBEW)
- National Association of Railroad Passengers (NARP)
- National Conference of Firemen and Oilers
- National Railroad Construction and Maintenance Association

National Railroad Passenger Corporation (Amtrak)  
National Transportation Safety Board (NTSB) (non-voting)  
Railway Progress Institute (RPI)  
Safe Travel America  
Secretaria de Comunicaciones y Transporte (non-voting)  
Sheet Metal Workers International Association  
Tourist Railway Association Inc.  
Transport Canada (non-voting)  
Transport Workers Union of America (TWUA)  
Transportation Communications International Union/BRC (TCIU/BRC)  
United Transportation Union (UTU)

When appropriate, FRA assigns a task to RSAC. After consideration and debate, RSAC may accept or reject the task. If accepted, RSAC establishes a working group that possesses suitable expertise and representation of interests to develop recommendations to FRA for action on the task. These recommendations are developed by consensus. If a working group comes to consensus on recommendations for action, the package is presented to the full RSAC for a vote. If the proposal is accepted by simple majority of the RSAC, the proposal is formally recommended to FRA. If the working group is unable to reach consensus on recommendations for action, FRA moves ahead to resolve the issue through traditional rulemaking proceedings.

On September 30, 1997, the RSAC accepted task number 97-6 entitled “Standards for New Train Control Systems.” The purpose of this task was defined as follows: “To facilitate the implementation of software based signal and operating systems by discussing potential revisions to the Rules, Standards, and Instructions (Part 236) to address processor-based technology and communication-based operating architectures.” The task called for the formation of a working group to include consideration of the following: (1) Disarrangement of microprocessor-based interlockings; (2) Performance standards for PTC systems at various levels of functionalities (safety-related capabilities); and (3) Procedures for introduction and validation of new systems.

In order to accomplish this task, it was proposed that a Standards Task Force be formed as a subgroup of the RSAC PTC Working Group (“Working Group”). This proposal was adopted by RSAC in December 1997. RSAC also accepted two other tasks related to PTC, task numbers 97-4 and 97-5. These tasks dealt primarily with issues related to the feasibility of implementation of PTC technology. In order to efficiently accomplish the three tasks assigned to it involving PTC issues, the Working Group empowered two task forces to work concurrently: the Data and Implementation Task Force, which handled tasks 97-4 and 97-5, and the Standards Task Force, which handled task 97-6. The Working Group also employed several teams, comprised of representative from RSAC member organizations, which provided invaluable assistance. Additionally, FRA responded to a consensus request from the Standards Task Force by contracting for assistance from the Center for Safety-Critical Systems at the University of Virginia. The

Working Group also established two teams: an Operating Rules Team, charged with working to ensure that appropriate railroad operating rules are part of any PTC implementation process, and a Human Factors team, charged with evaluating human factor aspects of PTC systems. Members of these teams served on both the PTC Standards Task Force and the Data Implementation Task Force.

The Data Implementation Task Force finalized a report on the future of PTC systems and resented it – with the approval of RSAC – to the FRA Administrator on September 8, 1999. In December 1999, the Standards Task Force reached consensus on most of the outstanding issues. Chiefly, these included the adoption of risk assessment criteria, independent third party validation and verification requirements, applicability of the proposed rule to the existing systems, life cycle recordkeeping and reporting, and related matters. On June 29, 2000, the Standards Task Force presented its consensus recommendations to the entire RSAC PTC Working Group. The PTC Working Group accepted the recommendation with minor changes and forwarded its consensus recommendation to RSAC, which approved it on September 14, 2000. The advice and recommendations of RSAC formed the basis for the proposed rule.

**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.**

In the NPRM, FRA proposed an amendment to §209.11, Request For Confidential Treatment, to clarify existing procedures for requesting confidential treatment for documents provided to FRA in connection with the agency's enforcement activities. First, the section would be amended to indicate that the procedures governing requests for confidential treatment apply to documents provided to FRA in connection with the agency's enforcement of both the railroad safety statutes and the railroad implementing regulations. Second, the section would be amended to clarify the definition of what activities constitute FRA enforcement activities. Under the revised definition, enforcement would include receipt by FRA of documents required to be submitted by FRA regulations, and all documents received by FRA in connection with FRA's investigative and compliance activities, in addition to the development of violation reports and recommendations for prosecution.

A commenter to the NPRM suggested that no information submitted to FRA should be



treated as confidential. In the Final Rule, FRA notes that it disagrees with such a suggestion and that the Freedom of Information Act (FOIA) (5 U.S.C. 552), and the Trade Secrets Act (18 U.S.C.1905) protect confidential information from disclosure. FRA further remarked – in response to another comment that FRA confirm that information will be accorded confidential treatment – that it is likely that the type of proprietary information to be submitted in compliance with this rule may be withheld from release as a trade secret, or commercial or financial information covered under exemption 4 of the FOIA. FRA also states in the Final Rule that it is not the policy of FRA to publicly disseminate such information as will be submitted in compliance with this regulation. Additionally, should a FOIA request be made for information submitted under this rule, the submitting company will be notified of the request in accordance with the submitter consultation provisions of the Department’s FOIA regulations (§ 7.17) and will be afforded the opportunity to submit detailed written objections to the release of information protected by exemption 4 as provided for in § 7.17(a). Because there is no public disclosure requirement in this rule, FRA has seen no need to substantially revise § 209.11 at this 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.**

*In an effort to more accurately gauge the average hourly wage of the different labor crafts, FRA checked the most recent Surface Transportation Bureau (STB) data, and discovered that railroad personnel work more than an average 40 hour work week (or 2,080 hours per year). Specifically, executives, officials, and staff assistants worked 2,105 hours per year (2006); professional and administrative worked 2,219 hours per year (2006); maintenance of way and structures worked 2,519 hours; maintenance of equipment and stores worked 2,363 hours; transportation employees (other than train and engine) worked an 2,338 hours per year (2006); and train and engine employees worked 2,953 hours per year (2006). The average hourly rate then was derived using AAR compensation numbers divided by the number of hours worked for each craft of employees.*

*Based on the above, FRA has used the following labor rates for railroad hourly wages in its cost calculations: Executives, officials, and staff assistants have an average hourly wage rate of \$73. Employees in the professional and administrative occupational categories have an average hourly wage rate of \$40. Signal Supervisors have an average hourly rate of \$35, while signal workers have an average hourly wage rate of \$32. Hourly rates used to estimate labor costs are derived by burdening 2006 AAR compensation rates 40 percent (see A AR's publication Railroad Facts, 2007 edition).*

*After checking with several firms, FRA has used the figure of \$140 per hour as the hourly wage for independent consultants (who will perform third party assessments, and independent reviews of verification and validation).*

**§ 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:

85  
railroads

Burden time per response:

4 hours

Frequency of Response:

On occasion

Annual number of Responses: 25 letters

Annual Burden: 100 hours

Annual Cost: \$4,000

**Calculation:** 25 letters x 4 hrs. = 100 hours  
100 hrs. x \$40 = \$4,000

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.*

§ 236.18 - 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 approximately 100 software management control plans will be adopted under the above requirement. It is estimated that it will take each railroad approximately 100 hours to develop its software management control plan. Total annual burden for this requirement is 10,000 hours.

Respondent Universe:

200  
railroads

Burden time per response:

100  
hours

Frequency of Response: On occasion

Annual number of Responses: 100 plans  
Annual Burden: 10,000 hours  
Annual Cost: \$730,000

**Calculation:** 100 plans x 100 hours = 10,000 hours  
10,000 hrs. x \$73 = \$730,000

### § 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 an 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.

Realizing that AAR/ASLRRA will probably develop a model RSPP for Class I railroads and also one for short line railroads (which will then probably customize the plan to the specifics of their railroad), FRA estimates that approximately 15 Railroad Safety Program Plans (RSPPs) will be developed by railroads per year. FRA believes the average small railroad RSPP will be about 50 pages, while the RSPP for larger railroads will be correspondingly larger. For these larger railroads, it is estimated that it will take railroad approximately 250 hours each to develop an RSPP. Total annual burden for this requirement is 3,750 hours. (*Note: Of these 3,750 hours for each RSPP, FRA estimates that railroad executives will spend approximately 375 hours reviewing the plan, while professional/administrative staff will spend approximately 3,375 hours in developing the plan. Total annual cost for this requirement is \$162,275.*)

Respondent Universe:

85  
railroads

Burden time per response:

250  
hours

Frequency of Response:

On occasion

Annual number of Responses:

15 plans (RSPPs)

Annual Burden:

3,750 hours



Annual Cost: \$162,375

**Calculation:** 15 plans/RSPPs x 250 hours = 3,750 hours  
3,375 hrs. x \$40 + 375 hrs. x \$73 = \$162,275

(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 four (4) cases per year. It is estimated that it will take each railroad approximately 16 hours to gather the additional information and send it to FRA. Total annual burden for this requirement is 64 hours.

Respondent Universe: 85 railroads

Burden time per response: 16 hours

Frequency of Response: On occasion

Annual number of Responses: 4 documents  
Annual Burden: 64 hours  
Annual Cost: \$2,560

**Calculation:** 4 documents x 16 hours = 64 hours  
64 hrs. x \$40 = \$2,560

- 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 two (2) Railroad Safety Program Plans (RSPPs) will be modified by railroads each year. It is estimated that it will take each railroad approximately 60 hours to modify its RSPP. Total annual burden for this requirement is 120 hours. *(Note: Of these 60 hours for each RSPP modification, railroad executives will spend approximately 20 hours revising the plan, while professional and administrative staff will spend 40 hours in completing the modifications to the RSPP. Total annual cost is \$6,120.)*

Respondent Universe:

85  
railroads

Burden time per response:

60  
hours

Frequency of Response:

On occasion

Annual number of Responses: 2 RSPP modifications/amendments

Annual Burden: 120 hours

Annual Cost: \$6,120

**Calculation:** 2 RSPP modifications x 60 hours = 120 hours  
40 hrs. x \$73 + 80 hrs. x \$40 = \$6,120

The total burden for this entire requirement is 3,934 hours (3,750 + 64 + 120).

§ 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/by suppliers to meet this requirement. Suppliers will already be gathering most of this data and will, therefore, do most of the work involved regarding this requirement. They will then tailor the information they have already developed to a

particular railroad. FRA estimates that a PSP for a small railroad will amount to approximately 100 pages. On average, FRA estimates that it will take approximately 240 hours to develop each PSP and take appropriate action in notifying FRA. Total annual burden for this requirement is 1,200 hours.

Respondent Universe:

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Burden time per response:

240  
hours

Frequency of Response: On occasion

Annual number of Responses: 5 plans (PSPs)

Annual Burden: 1,200 hours

Annual Cost: \$168,000

**Calculation:** 5 plans x 240 hours = 1,200 hours

1,200 hrs. x \$140 = \$168,000

§ 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 seven (7) petitions for review and approval of product safety plans will be submitted by the railroads to the agency. Not all PSPs will require petitions for approval; some will only require an informational filing. It is estimated that it will take approximately eight (8) hours to prepare and mail each petition. Total annual burden for this requirement is 56 hours.

Respondent Universe:

85  
railroads

Burden time per response:

8 hours

Frequency of Response:		On occasion
Annual number of Responses:	7 petitions	
Annual Burden:		56 hours
Annual Cost:		\$4,088

**Calculation:** 7 petitions x 8 hrs. = 56 hours  
56 hrs. x \$73 = \$4,088

(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.

FRA estimates that approximately five (5) full risk assessments will be performed under this requirement. The risk assessments will most likely be performed for the railroads by suppliers or independent consultants for the suppliers. FRA estimates that it will take approximately 3,000 hours to perform a full risk assessment and complete the full risk assessment document. Total annual burden for this requirement is 15,000 hours.

Respondent Universe:	85 railroads
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Burden time per response:	3,000 hours
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Frequency of Response:		On occasion
Annual number of Responses:	5 full risk assessments/documents	
Annual Burden:		15,000 hours
Annual Cost:		\$2,100,000

**Calculation:** 5 full risk assessments/documents x 3,000 hrs. = 15,000 hours  
15,000 hrs. x \$140 = \$2,100,000

Subsequent Years

In subsequent years, FRA estimates that approximately seven (7) full risk assessments will need to be modified or amended under the above requirement. As mentioned earlier, the risk assessments will most likely be performed for the railroads by suppliers or independent consultants for the suppliers. FRA estimates that it will take approximately 1,200 hours to perform the full risk assessment and amend the full risk assessment document. Total annual burden for this requirement is 8,400 hours.

Respondent Universe:

85  
railroads

Burden time per response:

1,200  
hours

Frequency of Response:

On occasion

Annual number of Responses: 7 full risk assessments/amended documents

Annual Burden: 8,400 hours

Annual Cost: \$1,176,000

**Calculation:** 7 full risk assessments/amended docs. x 1,200 hrs. = 8,400 hours  
8,400 hrs. x \$140 = \$1,176,000

(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.

FRA estimates that approximately five (5) abbreviated risk assessments will be performed under this requirement. Again, the risk assessments will most likely be performed for the railroads by suppliers or independent consultants for the suppliers. This section focuses on component replacement. FRA estimates that it will take approximately 240 hours to perform an abbreviated risk assessment and complete the necessary document. Total annual burden for this requirement is 1,200 hours.

Respondent Universe:

8  
5  
  
r  
a

Burden time per response:

240  
hours

Frequency of Response:

On occasion

Annual number of Responses: 5 abbreviated risk assessments/documents

Annual Burden: 1,200 hours

Annual Cost: \$168,000

**Calculation:** 5 abbrev. risk assessments/docs. x 240 hrs. = 1,200 hours

1,200 hrs. x \$140 = \$168,000

Subsequent Years

Additionally, FRA estimates that approximately five (5) abbreviated risk assessments will

need to be modified or amended in subsequent years under the above requirement. As noted previously, the risk assessments will most likely be performed for the railroads by suppliers or independent consultants for the suppliers. FRA estimates that it will take approximately 60 hours to modify or amend the abbreviated risk assessment document. Total annual burden for this requirement is 300 hours.

Respondent Universe:

8  
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a  
d  
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P  
T  
C  
  
S  
u  
p  
p  
l  
i  
e  
r  
s

Burden time per response:

60  
hours

Frequency of Response: On occasion

Annual number of Responses: 5 modified/amended documents

Annual Burden: 300 hours

Annual Cost: \$42,000

**Calculation:** 5 modified/amended docs x 60 hrs. = 300 hours  
300 hrs. x \$140 = \$42,000

(e)(1) Risk assessment techniques, including both qualitative and quantitative methods, are recognized as providing credible and useful results for safety purposes of this section if they apply the following principles: (1) Safety levels must be measured using competent risk assessment methods and must be expressed as the total residual risk in the system over its expected life cycle after implementation of all mitigating measures described in the PSP. Appendix B to this part provides the criteria for acceptable risk assessment methods. Other methods may be acceptable if demonstrated to the satisfaction of the Associate Administrator for Safety to be equally suitable.

(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. 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. A railroad may, as an alternative, use a risk metric in which consequences are measured strictly in terms of fatalities. (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.

FRA estimates that railroads will submit approximately five (5) documents proposing alternative risk assessment methods. It is estimated that it will take approximately 3,000 hours to complete the alternative risk assessment, compose the document, and send the document to FRA. Total annual burden for this requirement is 15,000 hours.

Respondent Universe:

8  
5

Burden time per response:

3,000  
hours

Frequency of Response:

On occasion

Annual number of Responses:

5 alt. risk assessment documents

Annual Burden:

15,000 hours

Annual Cost:

\$2,100,000

**Calculation:** 5 alt. risk assessment documents x 3,000 hrs. = 15,000 hours  
15,000 hrs. x \$140 = \$2,100,000

(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(c) above.*

The burden for this entire requirement is 39,956 hours (56 + 15,000 + 8,400 + 1,200 + 300 + 15,000).

#### § 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.

FRA estimates that it will receive approximately two (2) additional PSPs from railroads seeking approval of excluded products. It is estimated that it will take approximately 240 hours to develop and send the plan to FRA. Total annual burden for this requirement is 480 hours.

Respondent Universe:

85  
railroads

Burden time per response:

240  
hours

Frequency of Response:

One-time

Annual number of Responses: 2 plans/PSPs

Annual Burden: 480 hours

Annual Cost: \$19,200

**Calculation:** 2 plans/PSPs x 240 hrs. = 480 hours  
480 hrs. x \$40 = \$19,200

The burden for this entire requirement is 480 hours.

§ 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 two (2) joint PSPs with accompanying notifications. It is estimated that it will take approximately 240 hours to complete each joint PSP and notification. Total annual burden for this requirement is 480 hours.

Respondent Universe: 85  
railroads

Burden time per response:	240 hours
Frequency of Response:	On occasion
Annual number of Responses:	2 Joint PSPs/notifications
Annual Burden:	480 hours
Annual Cost:	\$19,200

**Calculation:** 2 notifications x 240 hrs. = 480 hours  
480 hrs. x \$40 = \$19,200

(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 20 informational filings/petitions for approval under this requirement. It is estimated that it will take approximately 40 hours to compose each petition and mail it to FRA. Total annual burden for this requirement is 800 hours.

Respondent Universe: 85  
railroads

Burden time per response:

40  
hours

Frequency of Response:	On occasion
Annual number of Responses:	20 filings/approval petitions
Annual Burden:	800 hours
Annual Cost:	\$32,000

**Calculation:** 20 filings/approval petitions x 40 hrs. = 800 hours  
800 hrs. x \$40 = \$32,000

(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 13 instances under the above requirement. It is estimated that it will take approximately 40 hours to gather the necessary data and send the documents to FRA. Total annual burden for this

requirement is 520 hours.

Respondent Universe:

85  
railroads

Burden time per response:

40  
hours

Frequency of Response:	On occasion
Annual number of Responses:	13 data calls/additional documents
Annual Burden:	520 hours
Annual Cost:	\$20,800

**Calculation:** 13 data calls x 40 hrs. = 520 hours  
 520 hrs. x \$40 = \$20,800

(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 five (5) cases under the above requirement. It is estimated that it will take approximately 40 hours to gather the necessary data and send the documents to FRA. Total annual burden for this requirement is 200 hours.

Respondent Universe:

85  
railroads

Burden time per response:

40  
hours

Frequency of Response:	On occasion
Annual number of Responses:	5 data calls/additional documents
Annual Burden:	200 hours
Annual Cost:	\$8,000

**Calculation:** 5 data calls x 40 hrs. = 200 hours  
200 hrs. x \$40 = \$8,000

(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 five (5) 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:

85  
railroads

Burden time per response:

120  
hours

Frequency of Response:	On occasion
Annual number of Responses:	5 consultations

Annual Burden:	600 hours
Annual Cost:	\$84,000

**Calculation:** 5 consultations x 120 hrs. = 600 hours  
600 hrs. x \$140 = \$84,000

(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 five (5) petitions for final approval under this requirement. It is estimated that it will take approximately 40 hours to complete each petition for final approval and send it to FRA. Total annual burden for this requirement is 200 hours.

Respondent Universe:	85 railroads
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Burden time per response:	40 hours
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Frequency of Response:	On occasion
Annual number of Responses:	5 final approval petitions
Annual Burden:	200 hours
Annual Cost:	\$8,000

**Calculation:** 5 final approval petitions x 40 hrs. = 200 hours  
200 hrs. x \$40 = \$8,000

(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.

FRA estimates that it will request more information in approximately 10 cases under the above requirement. It is estimated that it will take approximately 80 hours to gather the necessary data and send the documents to FRA. Total annual burden for this requirement is 800 hours.

Respondent  
Universe:

85  
railroads

Burden time per response:

80  
hours

Frequency of Response:	On occasion
Annual number of Responses:	10 data calls/additional documents
Annual Burden:	800 hours
Annual Cost:	\$32,000

**Calculation:** 10 data calls x 80 hrs. = 800 hours  
800 hrs. x \$40 = \$32,000

(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.

FRA estimates that it will conduct approximately 10 consultations under this requirement where information will be communicated verbally by railroad representatives. It is estimated each consultation will take approximately 40 hours. Total annual burden for this requirement is 400 hours.

Respondent Universe:

85  
railroads

Burden time per response:

40  
hours

Frequency of Response:	On occasion
Annual number of Responses:	10 consultations
Annual Burden:	400 hours
Annual Cost:	\$16,000

**Calculation:** 10 consultations x 40 hrs. = 400 hours  
 400 hrs. x \$40 = \$16,000

(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 approximately three (3) petitions for approval under this requirement. It is estimated that it will take approximately 30 hours to gather all the necessary information, compose the petition for approval, and send it to FRA. Total annual burden for this requirement is 90 hours.

Respondent Universe:	85
	railroads

Burden time per response:	30
	hours

Frequency of Response:	On occasion
Annual number of Responses:	3 approval petitions
Annual Burden:	90 hours
Annual Cost:	\$3,600

**Calculation:** 3 approval petitions x 30 hrs. = 90 hours  
 90 hrs. x \$40 = \$3,600

(ii) Within 60 days of receipt of the petition for approval, FRA either acknowledges receipt, or acknowledges receipt 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 it will take approximately 40 hours to gather the necessary data and send the documents to FRA. Total annual burden for this

requirement is 240 hours.

Respondent Universe:

85  
railroads

Burden time per response:

40  
hours

Frequency of Response:

On occasion

Annual number of Responses:

6 data calls/additional documents

Annual Burden:

240 hours

Annual Cost:

\$9,600

**Calculation:** 6 data calls x 40 hrs. = 240 hours

240 hrs. x \$40 = \$9,600

(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 10 comments pertaining to informational filings and petitions for approval. The comments will most likely be written and take the form of a letter. It is estimated that it will take approximately eight (8) hours to compose and then send each letter to FRA. Total annual burden for this requirement is 80 hours.

Respondent Universe:

Public/r  
ailroad  
commu  
nity

Burden time per response:

8 hours



Frequency of Response:	On occasion
Annual number of Responses:	10 comments/letters
Annual Burden:	80 hours
Annual Cost:	\$3,200

**Calculation:** 10 comments/letters x 8 hrs. = 80 hours  
80 hrs. x \$40 = \$3,200

(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 three (3) third party assessments will be completed

under this requirement. It is estimated that it will take approximately 4,000 hours to complete the assessment and produce the necessary report. Total annual burden for this requirement is 12,000 hours. *(Note: Third party assessments will most likely involve both junior and senior engineers whose hourly rate ranges anywhere from \$90 to \$150 per hour. FRA believes a rate of \$140 per hour would be a fair estimate of the hourly wage. Total annual cost for this requirement is \$1,680,000.)*

Respondent Universe: 85  
railroads

Burden time per response: 4,000  
hours

Frequency of Response:	One-time
Annual number of Responses:	3 third party final assessment reports
Annual Burden:	12,000 hours
Annual Cost:	\$1,680,000

**Calculation:** 3 third party assessment reports x 4,000 hrs. = 12,000 hours  
12,000 hrs. x \$140 = \$1,680,000

(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 this requirement. It is estimated that it will take approximately 40 hours to complete each amendment and submit it to FRA. Total annual burden for this requirement is 600 hours.

Respondent Universe: 85  
railroads

Burden time per response:

40  
hours

Frequency of Response:	One-time
Annual number of Responses:	15 amendments
Annual Burden:	600 hours
Annual Cost:	\$24,000

**Calculation:** 15 amendments x 40 hrs. = 600 hours  
600 hrs. x \$40 = \$24,000

(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.

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

The burden for this entire requirement is 17,010 hours (480 + 800 + 520 + 200 + 600 + 200 + 800 + 400 + 90 + 240 + 80 + 12,000 + 600).

#### § 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)

FRA estimates that approximately 15 documents or records will be kept by

railroads/contractors under this requirement. It is estimated that it will take 40 hours to organize and file the necessary documents. Total annual burden for this requirement is 600 hours.

Respondent  
Universe:

85  
railroads

Burden time per response:

40  
hours

Frequency of Response:	On occasion
Annual number of Responses:	15 documents/records
Annual Burden:	600 hours
Annual Cost:	\$24,000

**Calculation:** 15 documents/records x 40 hrs. = 600 hours  
600 hrs. x \$40 = \$24,000

(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 five (5) final reports under this requirement. It is estimated that it will take approximately 20 hours to gather the data and compose each report of inconsistencies and each final report. Total annual burden for this

requirement is 100 hours.

Respondent Universe:

85  
railroads

Burden time per response:

20  
hours

Frequency of Response:

On occasion

Annual number of Responses: 5 reports

Annual Burden: 100 hours

Annual Cost: \$4,000

**Calculation:** 5 reports x 20 hrs. = 100 hours

100 hrs. x \$40 = \$4,000

The burden for this entire requirement is 700 hours (600 + 100).

§ 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.

FRA estimates that approximately 20 affected railroads will catalog and maintain the necessary documents in the Operations and Maintenance Manual as stipulated in this section. It is estimated that it will take each affected railroad approximately 120 hours to catalog and maintain the relevant documents in a single Operations and Maintenance Manual which is readily available to workers and FRA inspectors. Total annual burden for this requirement is 2,400 hours.

Respondent Universe:

85  
railroads

Burden time per response:

120  
hours

Frequency of Response:		On occasion
Annual number of Responses:	20 manuals	
Annual Burden:		2,400 hours
Annual Cost:		\$96,000

**Calculation:** 20 manuals x 120 hrs. = 2,400 hours  
2,400 hrs. x \$40 = \$96,000

(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.

FRA estimates that approximately five (5) plans for proper maintenance, repair, inspection, and testing of safety-critical products will be developed under this requirement. It is estimated that it will take railroads approximately 200 hours to develop the required plans, identify all software versions, revision and revision dates, and place them where the products are deployed or maintained. Total annual burden for this requirement is 1,000 hours.

Respondent Universe:		85 railroads
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Burden time per response:		200 hours
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Frequency of Response:		On occasion
Annual number of Responses:	5 plans	
Annual Burden:		1,000 hours
Annual Cost:		\$40,000

**Calculation:** 5 plans x 200 hrs. = 1,000 hours  
1,000 hrs. x \$40 = \$40,000

(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 there will be approximately three (3) hardware, software, and firmware revisions/modifications documented in the Operation and Maintenance Manual as specified under this requirement. It is estimated that it will take each railroad approximately 40 hours to prepare and document the hardware, software, and firmware revisions. Total annual burden for this requirement is 120 hours.

Respondent Universe:

85  
railroads

Burden time per response:

40  
hours

Frequency of Response:

On occasion

Annual number of Responses: 3 revisions (hardware/software/firmware)

Annual Burden: 120 hours

Annual Cost: \$4,800

**Calculation:** 3 revisions x 40 hrs. = 120 hours  
120 hrs. x \$40 = \$4,800

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

FRA estimates that approximately 10,000 safety-critical components, including spare equipment, will be positively identified under this requirement. It is estimated that it will take approximately 20 minutes to identify/mark safety-critical components. Total annual burden for this requirement is 3,333 hours.

Respondent Universe:

Burden time per response:

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Frequency of Response:	On occasion
Annual number of Responses:	10,000 identifications/markings
Annual Burden:	3,333 hours
Annual Cost:	\$106,656

**Calculation:** 10,000 markings x 20 min. = 3,333 hours  
3,333 hrs. x \$32 = \$106,656

The burden for this entire requirement is 6,853 hours (2,400 + 1,000 + 120 + 3,333).

## 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 five (5) 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.

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Burden time per response:

400

hours

Frequency of Response:		On occasion
Annual number of Responses:	5 training programs	
Annual Burden:		2,000 hours
Annual Cost:		\$80,000

**Calculation:** 5 training programs x 400 hrs. = 2,000 hours  
2,000 hrs. x \$40 = \$80,000

(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.*

Railroad signalmen and dispatchers will also have to be trained. FRA estimates that there are approximately 4,000 signalmen and 400 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 200 training sessions/classes for signalmen and 20 training sessions/classes 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 each training session/class for dispatchers will last approximately 20 hours. Total annual burden for this requirement is 168,000 hours.

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Burden time per response:

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Frequency of Response:	On occasion
Annual number of Responses:	4,000 trained signalmen + 400 trained dispatchers
Annual Burden:	168,000 hours

Annual Cost: \$5,376,000

**Calculation:** 4,000 trained signalmen x 40 hrs. + 400 trained dispatchers x 20 hrs. = 168,000 hours  
168,000 hrs. x \$32 = \$5,376,000

The burden for this entire requirement is 170,000 hours (2,000 + 168,000).

§ 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.

*The burden for this requirement is included under § 236.921.*

(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.*

FRA estimates that approximately 4,400 records designating other qualified persons (signalmen + 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 733 hours.

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Burden time per response:

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minutes

Frequency of Response:		On occasion	
Annual number of Responses:	4,400 records		
Annual Burden:		733 hours	
Annual Cost:			\$29,320

**Calculation:** 4,400 records x 10 min. = 733 hours  
733 hrs. x \$40 = \$29,320

The burden for this entire requirement is 733 hours.

§ 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.*

§ 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).*

(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.*

(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.*

#### § 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 Workers Protection).*

## **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 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 system that operates over a life-cycle of 25 years or greater. 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 safety-critical assessment of each product must include all of its interconnected subsystems and components and, where applicable, the interaction between such subsystems. (c) Each subsystem or component of the previous condition must be analyzed with a Mean Time To Hazardous Event (MTTHE) as specified subject to a high degree of confidence. (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; (2) Total number of trains and movement density; (3) Train movement operational rules, as enforced by the dispatcher and train crew behaviors; (4) Wayside subsystems and components; and (5) Onboard subsystems and components. (e) The failure modes of each subsystem or component, or both, must be determined for the integrated hardware/software (where applicable) as a function of the Mean Time To Failure (MTTF) failure restoration rates, and the integrated hardware/software coverage of all processor-based subsystems or components, or both. Train operating and movement rules, along with components that are layered in order to enhance safety-critical behavior, must also be considered. (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) MTTHE compliance verification and validation must be based on the assessment of the design for verification and validation process, historical performance data, analytical methods and experimental safety-critical performance testing performed on the subsystem or component. The compliance process must be demonstrated to be compliant and consistent with the MTTHE metric and demonstrated to have 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 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 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 reliability or availability of mechanical, electric, or electronic components. Such assumptions must include MTTF projections, as well as Mean Time To Repair (MTTR) projections, unless the risk assessment specifically explains why these assumptions are not relevant to the risk assessment. The railroad shall document these assumptions in such a form as to permit later automated comparisons with in-service experience (e.g., a spreadsheet). (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. 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.*

## **Appendix C - Safety Assurance Criteria and Processes**

This appendix seeks to promote full disclosure of safety risk to facilitate minimizing or eliminating elements of risk where practicable by providing minimum criteria and

processes for safety analyses conducted in support of PSPs. The analysis required by this appendix is intended to minimize the probability of failure to an acceptable level, helping to optimize the safety of the product within the limitations of the available engineering science, cost, and other constraints. FRA uses the criteria and processes set forth in this appendix to evaluate analyses, assumptions, and conclusions provided in RSPP and PSP documents. An analysis performed under this appendix must: (1) Address each area of paragraph (b) of this appendix, explaining how such objectives are addressed or 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 considerations when designing and demonstrating the safety of products covered by subpart H of this part. In the event that any of these principles are not followed, the PSP 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) **Normal operation.** The system (including all hardware and software) must demonstrate safe operation with no hardware failures 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. There must be no hazards that are categorized as unacceptable or undesirable. Hazards categorized as unacceptable must be eliminated by design.

(2) **Systematic failure.** It must be shown how the product is designed to mitigate or eliminate 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.

(3) **Random failure.** (i) 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). (ii) 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. (iii) 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.

(4) **Common Mode failure.** Another concern of multiple failure 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.

(5) **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.

(6) **Modifications.** Safety must be ensured following modifications to the hardware and/or software. All or some of the concerns identified in this paragraph may be applicable depending upon the nature and extent of the modifications.

(7) **Software.** Software faults must not cause hazards categorized as unacceptable or undesirable.

(8) **Closed Loop Principle.** The product design must require positive action to be taken in a prescribed manner to either begin product operation or continue product operation.

(9) **Human Factors Engineering.** 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.

*The burden for the requirements of Appendix C is included under §§ 236.905 and 236.907(a)(9) above.*

#### **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 product. 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.

(c) 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 RSPP, the PSP, and any other documents pertinent to the product being assessed.

(d)(1) The reviewer shall analyze the Preliminary Hazard Analysis (PHA) for comprehensiveness and compliance with the railroad's RSPP. (2) 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 the railroad's RSPP.

(e) The reviewer shall randomly select various safety-critical software modules for audit to verify whether the requirements of the RSPP 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 with the RSPP.

(f)(1) The reviewer shall evaluate and comment on the plan for installation and test procedures of the product for revenue service. (2) 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: (i) Reviewer's evaluation of the adequacy of the PSP, including the supplier's MTTHE and risk estimates for the product, and the supplier's confidence interval in these estimates; (ii) Product vulnerabilities which the reviewer felt were not adequately mitigated, including the method by which the railroad would assure product safety in the event of a hardware or software failure (i.e., how does the railroad assure that all potentially hazardous failure modes are identified?) and the method by which the railroad addresses comprehensiveness of the product design for the requirements of the operations it will govern (i.e., how does the railroad assure that all potentially hazardous operating circumstances are identified? Who records any deficiencies identified in the design process? Who tracks the correction of these deficiencies and confirms that they are corrected?); (iii) A clear statement of position for all parties involved for each product 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 RSPP procedure or process which was not properly followed; (vi) Identification of the software verification and validation procedures for the product's safety-critical applications, and the reviewer's evaluation of the adequacy of these procedures; (vii) Methods employed by the product manufacturer to develop safety-critical software, such as use of structured language, code checks, modularity, or other similar generally acceptable techniques; and (viii) Method by which the supplier or railroad addresses comprehensiveness of the product design which considers the safety elements listed in paragraph (b) of appendix C to this part.

*The burden for this entire requirement is included under § 236.913(h).*

The total burden for this entire information collection is 250,966 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.**

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, as well as incurring the cost of purchasing envelopes.

\$ 23.76	-	Envelopes - 216 9" x 12" @ 11 cents per envelope.
\$ 1,080.00	-	Postage - @ approximately \$5 per complete envelope.
\$1,103.76	-	Total Additional Costs

- 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 burden for this information collection had increased by *133,624 hours* from the previous submission. The increase results solely from **adjustments**. **Adjustments** 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 revised its estimate of the number of software management control plans that will be adopted by railroads (from 45 to 100). This change in estimate *increased* the burden by *5,500 hours* (from 4,500 hours to 10,000 hours).
- 2.) Under § 236.905A(i), Railroad Safety Program Plan (RSPP), FRA revised its estimate of the number of agency requests for additional information regarding railroad petitions for approval of RSPPs and railroad documentary responses to these agency requests (from 2 to 4). FRA also revised the average burden time for this requirement (from 8 hours to 16 hours). These changes in estimate *increased* the burden by *48 hours* (from 16 hours to 64 hours).
- 3.) Under § 236.919(d), Operations and Maintenance Manual, FRA revised its estimate of the number of the average time it takes to positively identify safety-critical components (from 10 minutes to 20 minutes). This change in estimate *increased* the burden by *1,666 hours* (from 1,667 hours to 3,333 hours).
- 4.) Under § 236.921(b), Training and Qualifications Program, FRA miscalculated the total

burden to train signalmen and dispatchers by computing hours for the number of classes to train these workers rather than the number of hours to train each signalman and dispatcher (from 220 training classes to 4,400 trained signalmen and dispatchers). This change in estimate *increased* the burden by *159,600 hours* (from 8,400 hours to 168,000 hours).

Total *increases* then from *adjustments* amount to *166,814 hours*.

As mentioned earlier, there were also **adjustments** which *decreased* the burden. The following requirements reflect revised estimates which resulted in burden *decreases*:

- 1.) Under § 236.905B, Railroad Safety Program Plan (RSPP), FRA revised its estimate of the number of modified RSPPs that will be submitted by railroads (from 5 documents to 2). This change in estimate *decreased* the burden by *180 hours* (from 300 hours to 120 hours).
- 2.) Under § 236.907, Product Safety Plan (PSP), FRA revised its estimate of the number of PSPs that will be developed and submitted by railroads (from 30 documents to 5). This change in estimate *decreased* the burden by *6,000 hours* (from 7,200 hours to 1,200 hours).
- 3.) Under § 236.909(d), Minimum Performance Standard, FRA revised its estimate of the number of abbreviated risk assessments that will be performed by railroads/suppliers (from 25 documents to 5). This change in estimate *decreased* the burden by *4,800 hours* (from 6,000 hours to 1,200 hours).
- 4.) Under § 236.909(d), Minimum Performance Standard, FRA revised its estimate of the number of modified or amended abbreviated risk assessments that will be completed in subsequent years by railroads/suppliers (from 10 documents to 5). This change in estimate *decreased* the burden by *300 hours* (from 600 hours to 300 hours).
- 5.) Under § 236.911a, Exclusions, FRA revised its estimate of the number of product notifications that it will receive (from 20 to 0) because the eligible time period has expired. This change in estimate *decreased* the burden by *1,600 hours* (from 1,600 hours to zero (0) hours).
- 6.) Under § 236.913(a), Filing and Approval of PSPs, FRA revised its estimate of the number of joint PSP notifications that it will receive (from 5 to 2). This change in estimate *decreased* the burden by *720 hours* (from 1,200 hours to 480 hours).
- 7.) Under § 236.913(b), Filing and Approval of PSPs, FRA revised its estimate of informational filings or petitions of approval that it will receive (from 32 to 20). This change in estimate *decreased* the burden by *480 hours* (from 1,280 hours to 800 hours).
- 8.) Under § 236.913(c)(2), Filing and Approval of PSPs, FRA revised its estimate of the



number of agency requests for informational filings and railroad responses that it will receive (from 20 to 13). This change in estimate *decreased* the burden by *280 hours* (from 800 hours to 520 hours).

9.) Under § 236.913(d)(ii), Filing and Approval of PSPs, FRA revised its estimate of the number of agency requests for more information regarding railroad Notices of Product Development and corresponding railroad responses (from 20 to 5). This change in estimate *decreased* the burden by *600 hours* (from 800 hours to 200 hours).

10.) Under § 236.913(d)(iv), Filing and Approval of PSPs, FRA revised its estimate of the number of petitions for final approval that will be submitted by railroads prior to use of the product in revenue service (from 20 to 5). This change in estimate *decreased* the burden by *600 hours* (from 800 hours to 200 hours).

11.) Under § 236.913(d)(2), Filing and Approval of PSPs, FRA revised its estimate of the number of other petitions for FRA approval of PSPs that do not involve prior consultation with the agency that will be submitted (from 5 to 3). FRA also revised its average burden time for such petitions (from 60 hours to 30 hours). This change in estimate *decreased* the burden by *210 hours* (from 300 hours to 90 hours).

12.) Under § 236.913(d)(2)(ii), Filing and Approval of PSPs, FRA revised its estimate of the number of agency requests for additional information regarding other petitions for FRA approval of PSPs that do not involve prior consultation with the agency that will be submitted and corresponding railroad responses (from 10 to 63). This change in estimate *decreased* the burden by *160 hours* (from 400 hours to 240 hours).

13.) Under § 236.917(a), Retention of Records, FRA revised its estimate of the number of records/documents that will be kept by railroads (from 22 to 15). This change in estimate *decreased* the burden by *280 hours* (from 880 hours to 600 hours).

14.) Under § 236.917(b), Retention of Records, FRA revised its estimate of the number of inconsistencies reported by railroads to FRA after a product is placed in service (from 40 to 5). This change in estimate *decreased* the burden by *700 hours* (from 800 hours to 100 hours).

15.) Under § 236.919(a), Operations and Maintenance Manual, FRA revised its estimate of the number of Maintenance Manuals kept by railroads (from 30 to 20). This change in estimate *decreased* the burden by *1,200 hours* (from 3,600 hours to 2,400 hours).

16.) Under § 236.919(b), Operations and Maintenance Manual, FRA revised its estimate of the number of plans kept by railroads concerning the identification of all software versions, revisions, and revision dates relating to safety-critical products (from 30 to 5). This change in estimate *decreased* the burden by *5,000 hours* (from 6,000 hours to 1,000 hours).

hours).

17.) Under § 236.919(c), Operations and Maintenance Manual, FRA revised its estimate of the number of hardware, software, and firmware documented in the Operations Maintenance Manual kept by railroads (from 5 to 35). This change in estimate *decreased* the burden by *80 hours* (from 200 hours to 120 hours).

18) Under § 236.921, Training and Qualifications Program, General, FRA revised its estimate of the number of railroads that will establish and implement training/qualifications programs (from 30 minutes to 5). This change in estimate *decreased* the burden by *10,000 hours* (from 12,000 hours to 2,000 hours).

Total *decreases* then from *adjustments* amount to *33,190 hours*.

Currently, the total burden in the OMB inventory shows 117,342 hours, while the present submission exhibits a burden total of 250,966 hours. Hence, there is an increase of *133,624 hours* in the total burden.

As a result of the above-mentioned **adjustments**, the other costs to respondents (i.e., cost of envelopes and mailing costs) has also decreased from the last submission. The previous submission estimated a cost of \$1,916.25, while the present submission estimates a cost of \$1,103.76. Hence, there is a decrease of \$812.49 (rounded off to \$1,000).

- 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.