LOCOMOTIVE CRASHWORTHINESS
49 CFR PARTS 229 AND 238
SUPPORTING JUSTIFICATION
OMB No. 2130-0564

Summary of Submission

- This submission is a request for an **extension without change** to the previous approval granted by OMB on June 10, 2011, which expires on June 30, 2014. There was a non-substantive change that updated the number of railroads (from 720 to 725).
- The total number of burden hours requested for this submission is **6,544 hours.**
- The total number of burden hours previously approved was **6,544 hours.**
- There are no **program changes or adjustments** at this time.
- Total number of **responses requested** is **1,052**.
- Total number of **responses previously** approved was **1,052**.
- **The answer to question **number 12** itemizes the hourly burden associated with each requirement of this rule (See pp. 14-22)

1. Circumstances that make collection of the information necessary.

Background

FRA has broad statutory authority to regulate railroad safety. The Locomotive Inspection Act (LIA) (formerly 45 U.S.C. 22-34, now 49 U.S.C. 20701-20703) was enacted in 1911. It prohibits the use of unsafe locomotives and authorizes FRA (by delegation from the Secretary of Transportation) to issue standards for locomotive maintenance and testing. In order to further FRA's ability to respond effectively to contemporary safety problems and hazards as they arise in the railroad industry, Congress enacted the Federal Railroad Safety Act of 1970 (Safety Act) (formerly 45 U.S.C. 421, 431 et seq., now found primarily in chapter 201 of Title 49). The Safety Act grants the Secretary of Transportation rulemaking authority over all areas of railroad safety (49 U.S.C. 20103(a)) and authority to investigate and penalize violations of any rail safety law. This authority was subsequently delegated to the FRA Administrator (49 CFR 1.49). (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 On that date, all of the acts were repealed, and their provisions were re-codified into Title 49.)

The term "railroad" is defined in the Safety Act to include "all forms of non-highway

ground transportation that runs on rails or electromagnetic guideways, ... other than rapid transit operations within an urban area that are not connected to the general railroad system of transportation." This definition makes clear that FRA has jurisdiction over (1) rapid transit operations within an urban area that are connected to the general railroad system of transportation, and (2) all freight, intercity, passenger, and commuter rail passenger operations regardless of their connection to the general railroad system of transportation or their status as a common carrier engaged in interstate commerce. FRA has issued a policy statement describing how it determines whether particular rail passenger operations are subject to FRA's jurisdiction (65 FR 42529 (July 2, 2000)); the policy statement can be found in Appendix A to parts 209 and 211 of Title 49 of the Code of Federal Regulations (hereinafter, all references to CFR parts and sections will refer to parts and sections in Title 49 of the Code of Federal Regulations).

Pursuant to its statutory authority, FRA promulgates and enforces a comprehensive regulatory program to address railroad track; signal systems; railroad communications; rolling stock; rear-end marking devices; safety glazing; railroad accident/incident reporting; locational requirements for dispatching of U.S. rail operations; safety integration plans governing railroad consolidations; merger and acquisitions of control; operating practices; passenger train emergency preparedness; alcohol and drug testing; locomotive engineer certification; and workplace safety.

In part 229 of Title 49 of the Code of Federal Regulations, FRA established minimum federal safety standards for locomotives. These regulations prescribe inspection and testing requirements for locomotive components and systems, minimum locomotive cab safety requirements, and even basic crashworthiness design requirements for electric multiple-unit type locomotives. On May 12, 1999, FRA issued regulations addressing the safety of passenger rail equipment, including passenger-occupied locomotives (i.e., cab control cars, powered multiple-unit passenger cars). See 49 CFR Part 238. However, FRA's existing locomotive safety standards do not address crashworthiness of conventional locomotives, which comprise the majority of locomotives in use today.

In 1992, Congress enacted The Rail Safety Enforcement and Review Act (RSERA) Pub. L. 102-365, September 3, 1992. In response to concerns raised by employee organizations, members of Congress, and recommendations of the National Transportation Safety Board (NTSB) regarding locomotive crew safety, Congress included mandates concerning locomotive crashworthiness and cab working conditions in the legislation. Section 10 of RSERA, entitled "Locomotive Crashworthiness and Working Conditions," required FRA "to complete a rulemaking proceeding to consider prescribing regulations to improve the safety and working conditions of locomotive cabs." In order to determine whether crashworthiness regulations would be necessary, Congress tasked FRA with assessing "the adequacy of Locomotive Crashworthiness Requirements Standard S-580, or any successor standard thereto, adopted by the Association of American Railroads in 1989, in improving the safety of locomotive cabs." Furthermore, Congress specifically mandated that the Secretary, in support of the

rulemaking proceeding, consider the costs and benefits associated with equipping locomotives with each of a number of specified design features.

In response to the mandate of Section 10 of RSERA, FRA conducted a study and performed research to consider additional crashworthiness features. In its analysis, FRA strongly agreed that locomotive crashworthiness protection is necessary because train collisions and derailments cause crew fatalities and injuries. In the period from 1995 to 1997, 26 locomotive cab occupants were killed and 289 were injured in freight and passenger train accidents in the United States, a yearly average of 105 casualties.[1] Analysis of the data revealed that there were 95 relevant accidents, and that fatalities were typically caused by loss of occupant space, severe trauma, drowning, or fire related injuries. Also, the railroad industry lost an average of more than 9,200 days per year of employee work-time due to these injuries.

While assessing and evaluating train collisions for its *Locomotive Crashworthiness and Cab Working Conditions Report* to Congress, FRA determined that the Association of American Railroads (AAR) industry standard S-580 represented a significant step on the part of the industry to improve the crashworthiness of locomotives. Adopted in 1989, Association of American Railroads (AAR) Specification S-580 ("S-580") has served as the industry standard for crashworthiness design specifications of new railroad freight locomotives. At the time of its development, S-580 provided basic enhancements to the crashworthiness of conventional locomotives. However, an evaluation of FRA's Congressional report indicated that implementation of selected additional crashworthiness features and incremental improvements in the current design could improve crew survivability in the event of a collision.

2. <u>How, by whom, and for what purpose the information is to be used</u>.

The information is used by FRA to ensure that locomotive manufacturers and railroads meet minimum performance standards and design load requirements for newly manufactured and re-manufactured locomotives in order to help protect locomotive cab occupants in the event that one of these covered locomotives collides with another locomotive, the rear of another train, a piece of on-track equipment, a shifted load on a freight car on an adjacent parallel track, or a highway vehicle at a rail-highway grade crossing.

Under § 229.207, FRA reviews petitions for agency approval of new locomotive crashworthiness design standards, petitions for approval for substantive changes to an FRA-approved locomotive crashworthiness design standard, and petitions for FRA approval of non-substantive changes to the existing FRA-approved crashworthiness design standards to verify that required information has been provided so that the agency

[1] Regulatory Impact Analysis for final rule, p. iii of Appendix B. These statistics were taken from the data set of preventable injuries/fatalities from this rulemaking only. Thus, this set does not include the total number of locomotive cab occupant fatalities/injuries.

can make a determination whether it is justified, and safe to grant such petitions regarding newly manufactured or re-manufactured locomotives. FRA scrutinizes these petitions based on the degree of change to the previously approved standard. Thus, the lowest level of scrutiny applies when non-substantive changes are involved. A much higher level of scrutiny applies to new crashworthiness design standards or to substantive changes to a previously FRA-approved locomotive crashworthiness design standard.

Under § 229.209, FRA reviews petitions for FRA approval of alternative locomotive crashworthiness designs to confirm that all mandated information has been provided so that it can assess the proposed design directly against the requirements of § 229.205 and make a determination about whether such an alternative design is safe and ought to be approved.

In order to determine compliance with the requirements of § 229.205 for petitions submitted under § 229.207(b), § 229.207(c), and § 229.209 (b), FRA considers and closely examines proper documentation of competent engineering analysis, and/or practical demonstrations, which may include computer modeling, structural crush analysis, component testing, full scale crash testing in a controlled environment, or any combination of these, together with evidence of effective peer review. If FRA finds that the petition complies with the requirements of this subpart and that the proposed change or new design standard satisfies the requirements contained in § 229.205, the petition is normally granted. If the petition does not comply with the requirements of this subpart, or the proposed change or new design standard does not satisfy the requirements in § 229.205 of this part, the petition is denied.

Under § 229.211, any person may comment on petitions submitted under § 229.207(b), § 229.207(c), and § 229.209(b). FRA will review these comments to determine the basis upon which they are made, and the commenters precise interest in submitting a statement to the agency on the proceeding. Such comments will be used by the agency as another factor in its decision whether or not to grant the petition. FRA realizes that changes in design of conventional locomotives might impact the safety of locomotive crews and other railroad employees, and FRA provides interested parties an opportunity to make their views known. If FRA determines that additional material is required to appropriately consider a petition, it will conduct a hearing on the petition, and provide notice of such hearing in the Federal Register. Comments and information submitted in these hearings are also carefully reviewed by the agency to determine whether it is safe and in the public interest to grant the petition.

In the event of an accident/incident involving one of these locomotives, FRA and state investigators use the identifying information under § 229.213 to help determine the role that the specific locomotive played concerning train crew injuries/fatalities. FRA uses such information to help prevent a recurrence of similar types of casualties to other train crews operating locomotives made by the same manufacturer/re-manufacturer, or built to the same specifications, by enabling these manufacturer/re-manufacturers/railroads to

make necessary design modifications/repairs.

Lastly, under § 229.215, FRA uses the required records to ensure manufacturers and re-manufacturers of locomotives comply with the crashworthiness design features of this subpart. Also, FRA uses these records to ensure that any repairs or modifications made to locomotives subject to this subpart are proper and do not compromise the crashworthiness features to such an extent that the safety of locomotive cab occupants is jeopardized.

3. Extent of automated information collection.

For many years, FRA has strongly endorsed and highly encouraged the use of electronic recordkeeping, wherever possible, to reduce burden. In keeping with the requirements of the Paperwork Reduction Act (PRA) and the Government Paperwork Elimination Act (GPEA), FRA has provided respondents with the option for electronic submission of required information. Specifically, under § 229.211(b), anyone interested in filing comments concerning petitions for FRA approval of new locomotive crashworthiness design standards may do so electronically. Also, under this section, anyone interested in filing comments concerning petitions for FRA approval of substantive changes to an FRA-approved locomotive crashworthiness design standard or concerning petitions for FRA approval of an alternative crashworthiness design may do so electronically.

It should be noted that the burden for this collection is relatively minimal.

4. Efforts to identify duplication.

To FRA's knowledge, no information is duplicated anywhere.

Similar data is not available from any other source.

5. Efforts to minimize the burden on small businesses.

Currently, AAR's S-580 standard applies only to railroads which are primarily Class I railroads. The requirements of this subpart are mainly directed to this same group. To minimize the economic burden on small businesses, the requirements of this subpart apply only to locomotives manufactured or re-manufactured on or after a date three years following publication of the rule. Additionally, FRA is using the locomotive build date to exempt the current locomotive fleet from requirements of this rule. Also excluded from the requirements of this subpart are locomotives, such as passenger cab cars or multiple unit (MU and DMU) cars and semi-permanently coupled power cars built for passenger service. Locomotives used in designated service are excluded as well from application of most of the provisions of this rule.
Furthermore, the structural standards of this subpart (§ 238.203-static end strength; § 238.205-anti-climbing mechanism; § 238.207-link between coupling mechanism and

car body; § 238.209-forward-facing end structure of locomotives; § 238.211-collision posts; § 238.213-corner posts; § 238.215-rollover strength; § 238.217-side structure; § 238.219-truck-to-car-body attachment; and § 238.223-locomotive fuel tanks) do not apply to passenger equipment if used exclusively on a rail line: (i) With no public highway-rail grade crossings; (ii) On which no freight operations occur at any time; (iii) On which only passenger equipment of compatible design is utilized; and (iv) On which trains operate at speeds not exceeding 79 mph. Any such passenger equipment remains subject to the requirements of § 229.141 of this chapter, as applicable.

It should also be noted that, under the provisions of the Regulatory Flexibility Act, it has been determined this rule does not impose a significant economic impact on a substantial number of small entities.

6. Impact of less frequent collection of information.

If this information collection were not conducted or conducted less frequently, railroad safety nationwide would be considerably adversely impacted. In particular, the number and extent of casualties to train crew personnel might increase substantially because newly manufactured/re-manufactured locomotives were not properly designed and sufficiently constructed to help protect occupants in the event that a locomotive collides with another locomotive, the rear of another train, a piece of on-track equipment, a shifted load on a freight car on an adjacent parallel track, or a highway vehicle at a rail-highway grade crossing. A review of accidents involving locomotives from 1995-1997 revealed over 95 relevant accidents, and approximately 105 casualties per year. These casualties included 26 locomotive cab crew members who were killed. The fatalities were typically caused by loss of occupant space, severe trauma, drowning, or fire related injuries.

Without this collection of information, FRA would be unable to review and evaluate changes and enhancements to the crashworthiness of freight locomotives. Without the ability to review petitions for new locomotive crashworthiness design standards, or petitions for approval of substantive changes to an FRA-approved locomotive crashworthiness design standard, or petitions for approval of an alternative locomotive crashworthiness design, FRA would have no way to determine whether it is safe and justified for the agency to approve locomotive manufacturers/railroads plans to implement new/innovative locomotive design standards or other changes to the current Association of American Railroads (AAR) Specification S-580, which has served as the industry standard for crashworthiness design specifications of new freight locomotives since 1989. Although AAR Specification S-580 provided for improvements in collision posts, anti-climbing arrangements, and the short hood structure of conventional freight locomotives and represented a significant step forward on the part of the railroad industry to improve locomotive crashworthiness, FRA's research and analysis determined that S-580 can be further improved. FRA believes that placing improved, more crashworthy freight locomotives as lead locomotives in consists will reduce both the severity of

injuries and the number of fatalities by mitigating the effects of collisions.

Without this collection of information, FRA would be unable to obtain comments from railroad industry groups, locomotive manufacturers/re-manufacturers, other interested parties, and the public concerning a new locomotive design standard or changes to an FRA-approved locomotive design standard. Without the ability to hear from affected parties and to access the widest expertise and knowledge, FRA would be hindered in making an informed decision whether it is justified and safe to approve a new/alternative locomotive crashworthiness design standard or substantive changes to an FRA-approved locomotive crashworthiness design standard.

Without this collection of information, FRA would lack access to critical information about freight locomotives. Specifically, without the required records, FRA would be unable to ascertain the date upon which a locomotive was manufactured or re-manufactured, or the name of the manufacturer/re-manufacturer of a locomotive, or the design specification to which the locomotive was manufactured or re-manufactured. Thus, FRA would have no way of quickly determining whether a locomotive is subject to the requirements of this rule. Also, it would be unable to review records of the original locomotive designs, including supporting calculations and drawings, pertaining to crashworthiness features required by this subpart. Additionally, it would not be able to examine records relating to the repair or modification of locomotives with crashworthiness features required by this subpart. As a result, FRA would be unable to determine compliance with the requirements of this rule. Moreover, such information might prove critical to investigators looking into train crew injuries and fatalities emanating from an accident/incident involving locomotives, and might prove extremely helpful in devising necessary safety measures to prevent such casualties from occurring again in the future.

In sum, this collection of information furthers the agency's primary mission, which is to promote and enhance national rail safety, save lives, and protect property and the environment.

7. <u>Special circumstances</u>.

Under § 229.215, each manufacturer or re-manufacturer of a locomotive subject to this subpart must retain records of the original locomotive designs pertaining to required crashworthiness features for the lesser period of the life of such locomotive or 20 years after the date of manufacture or re-manufacture. This time frame approximates the normal period an initial owner would typically retain control of the unit. This provision is designed to ensure that conformity with the requirements of this subpart can be readily determined in the event that a locomotive's compliance with its design or performance standard is called into question.

Also, under this section, each owner or lessee of a locomotive subject to this part must

retain all records of repair or modification to crashworthiness features for the lesser period of the life of the locomotive or 20 years after the date on which the repair/modification was performed. Such records are essential to ensure unsafe repairs/modifications are not made. Further, these records will serve as an invaluable resource for investigators probing into train crew injuries and fatalities resulting from an accident/incident involving a locomotive covered under this subpart.

All other information collection requirements are in compliance with this section.

8. Compliance with 5 CFR 1320.8.

As required by the Paperwork Reduction Act of 1995 and 5 CFR 1320, FRA published a notice in the Federal Register on December 23, 2013, soliciting comment on these information collection requirements from the public, railroads, and other interested parties. See 78 FR 77550. FRA received no comments in response to this notice.

Background

In 1992, Congress enacted the Rail Safety Enforcement and Review Act (RSERA), Public Law 102-365 (Sept. 3, 1992). In response to the mandate of Section 10 of RSERA, FRA conducted the necessary research and analysis. FRA undertook steps to determine the health and safety effects of locomotive cab working conditions and evaluated the effectiveness of S-580, along with the benefits and costs of the specified locomotive crashworthiness features. In an effort to fully address the broad range of issues presented in the RSERA, FRA (1) conducted an industry-wide public meeting to gather information regarding the areas of concern identified in the RSERA, (2) established a locomotive collision database based on detailed accident information gathered from actual collisions, (3) established a research contract to develop and verify a computer model capable of predicting how each of the crashworthiness features in S-580 and in the RSERA affect the collision dynamics and probability of crew injury, and (4) conducted a detailed survey of locomotive crews' cab working conditions and environment. FRA detailed the results of these actions in its "Locomotive Crashworthiness and Cab Working Conditions Report to Congress," dated September 18, 1996.

FRA's meetings with all segments of the railroad industry formed an essential part of its plan to meet the requirements of the RSERA. FRA held an industry-wide public meeting on June 23, 1993, to gather information from the industry on each of the areas of concern identified in Section 10 of the RSERA and to inform the industry of FRA's approach. This meeting was well attended by all segments of the rail industry, including rail labor, freight railroads, locomotive builders, the National Railroad Passenger Corporation (Amtrak), and commuter railroads.

At this initial meeting, some of the railroads urged that improvements in crash avoidance

technology should be pursued in lieu of improved crashworthiness features. Several participants in the public meeting expressed an opinion that a series of smaller, informal meetings with the separate segments of the rail industry would provide more detailed information regarding locomotive crashworthiness. As a result, FRA held a number of such meetings, attended by members of the following organizations:

American Public Transportation Association (APTA)
American Short Line and Regional Railroad Association (ASLRRA)
Amtrak
Association of American Railroads (AAR)
Brotherhood of Locomotive Engineers and Trainmen (BLET)
Burlington Northern (now Burlington Northern Santa Fe Railway) (BNSF)
DuPont (glazing)
General Electric Transportation Systems (GETS)
General Motors- Electro-Motive Division (GM/EMD)
Morrison Knudsen (MK)
National Transportation Safety Board (NTSB)
Sierracin (glazing)
United Transportation Union (UTU).

These meetings generated considerable discussion about the adequacy of the AAR's Locomotive Crashworthiness Standard S-580 (1989), the requirement to conduct research and analysis, including computer modeling and full-scale crash testing of the safety of locomotives, and the costs and benefits associated with RSERA's specified locomotive crashworthiness features. During the meetings, FRA requested specific cost or test data to support the positions taken by the various organizations. Some supply industry organizations were forthcoming with this data, while other organizations were apparently unable or unwilling to respond.

FRA proceeded based on the understanding that earlier locomotive collision accident reports did not contain the data necessary to support crash modeling. Thus, in 1992, FRA instructed field inspectors to investigate all accidents involving either a collision of two trains or a collision of one train with an object weighing ten tons or more, regardless of monetary damage thresholds and locomotive design. This accident data provided information which FRA used to determine the possible benefits of a crashworthiness regulation.

FRA's Report to Congress contained an implementation strategy to address each of the issues raised by the RSERA. FRA determined that S-580, which provided for improvements in collision posts, anti-climbing arrangements and the short hood structure, represented a significant step forward on the part of the railroad industry to improve locomotive crashworthiness. The research and analysis conducted in response to the RSERA showed that S-580 could be further improved to reduce casualties without significantly impacting locomotive design. FRA also found that (1) modified front-end

structural designs incorporating stronger collision posts, (2) full height corner posts with increased strength, and (3) utilization of roof longitudinal strength to support structural members from crushing may provide opportunities for additional protection for locomotive cab occupants. FRA even evaluated the potential to create a designated crash refuge within the space that these measures would help to protect. Furthermore, based on accident/incident experience and recent advances in fuel tank design being undertaken by the industry, FRA concluded that fuel tank design could be significantly improved to minimize the risk and severity of future fuel spills. Finally, FRA identified locomotive cab emergency lighting and more reliable means of rapid egress during derailments and collisions as additional subject areas which appeared to warrant further exploration.

FRA determined that it would use its Railroad Safety Advisory Committee (RSAC) to further develop these safety issues, thereby tapping the knowledge and energies of a wide range of interested parties. In March 1996, FRA established the RSAC, which provides a forum for consensual rulemaking and program development. The Committee includes representation from all of the agency's major customer groups, including railroads, labor organizations, suppliers and manufacturers, and other interested parties. Representatives of the following organization are members of RSAC:

Association of American Railroads (AAR)
American Association of Private Railroad Car Owners (AARPCO)
American Association of State Highway & Transportation Officials (AASHTO)
American Train Dispatchers Department/BLE (ATDD/BLE)
Amtrak
American Public Transit Association (APTA)
American Short Line and Regional Railroad Administration (ASLRRA)
Association of Railway Museums (ARM)
Association of State Rail Safety Managers (ASRSM)
Brotherhood of Locomotive Engineers and Trainmen (BLET)
Brotherhood of Maintenance of Way Employes (BMWE)
Brotherhood of Railroad Signalmen (BRS)
Federal Transit Administration (FTA) (associate member)
High Speed Ground Transportation 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)
Labor Council for Latin American Advancement (LCLAA) (associate member)
League of Railway Industry Women (associate member)
National Association of Railroad Passengers (NARP)
National Association of Railway Business Women (associate member)
National Conference of Firemen & Oilers
National Railroad Construction and Maintenance Association
National Transportation Safety Board (NTSB) (associate member)

Railway Supply Institute (RSI)
Safe Travel America
Secretaria de Communicaciones y Transporte (associate member)
Sheet Metal Workers International Association (SMW)
Tourist Railway Association Inc.
Transport Canada (associate member)
Transportation Communications International Union/BRC (TCIU/BRC)
Transport Workers Union of America (TWUA)
United Transportation Union (UTU)

When appropriate, FRA assigns a task to RSAC, and after consideration and debate, RSAC may accept or reject the task. If the task is accepted, RSAC establishes a working group that possesses the appropriate expertise and representation of interests to develop recommendations to FRA for action on the task. The working group develops the recommendations by consensus. The working group may establish one or more task forces to develop the facts and options on a particular aspect of a given task. The task force reports to the working group. If a working group comes to unanimous consensus on recommendations for action, the working group presents the package to the RSAC for a vote. If a simple majority of the RSAC accepts the proposal, the RSAC formally recommends the proposal to FRA.

FRA then determines what action to take on the recommendation. Because FRA staff has played an active role at the working group level in discussing the issues and options and in drafting the language of the consensus proposal and because the RSAC recommendation constitutes the consensus of some of the industry's leading experts on a given subject, FRA is often favorably inclined toward the RSAC recommendation. However, FRA is in no way bound to follow the recommendation, and the agency exercises its independent judgment on whether the recommended rule achieves the agency's regulatory goal, is soundly supported, and is in accordance with policy and legal requirements. Often, FRA varies in some respects from the RSAC recommendation in developing the actual regulatory proposal. If the working group or RSAC is unable to reach consensus on recommendations for action, FRA moves ahead to resolve the issue through traditional rulemaking proceedings.

On June 24, 1997, FRA tasked RSAC with the responsibility of making recommendations concerning standards for locomotive crashworthiness. Specifically, RSAC was charged with the investigation and development, if necessary, of crashworthiness standards to ensure the integrity of locomotive cabs in collisions, thereby minimizing fatalities and injuries to train crews. This task was to be performed in three phases. RSAC would first review relevant accident data and existing industry standards to determine which, if any, appropriate modifications to the cab structure are required to provide additional protection above that provided by existing requirements as specified in S-580. In particular, RSAC was to specifically consider the following features: full-height corner posts; improved glazing design and support structure; equipment to prevent

the post-collision entry of flammable liquids; and improved fuel tank design. Second, RSAC would examine to what extent improved anti-climber designs and/or incorporation of shelf couplers, used to complement the existing requirements of S-580, serve to mitigate the effects of various collision scenarios. Third, RSAC would examine past and present methods of cab egress, along with the benefits of emergency lighting, in the event of a collision. Based on a review of relevant accident data, available technology, implementation costs, and other applicable factors, RSAC would then develop appropriate recommendations.

To accomplish the above goals, RSAC created the Locomotive Crashworthiness Working Group ("Working Group"). Created on June 24, 1997, this group of about 40 members consisted of FRA personnel, and representatives from railroad labor and management and two major manufacturers of locomotives. Representatives of the following organizations served on the Working Group:

Association of American Railroads (AAR)
American Association of State Highway & Transportation Officials (AASHTO)
American Public Transit Association (APTA)
American Short Line and Regional Railroad Administration (ASLRRA)
Brotherhood of Locomotive Engineers and Trainmen (BLET)
Brotherhood of Maintenance of Way Employes (BMWE)
Federal Railroad Administration (FRA)
International Brotherhood of Electrical Workers (IBEW)
Railway Supply Institute (RSI)
Sheet Metal Workers International Association (SMW)
United Transportation Union (UTU)
National Transportation Safety Board (NTSB)

The Working Group broke the task into three distinct phases. The first phase included review of accident data to formulate the most prevalent accident scenarios involving injuries and deaths. Second, the Volpe Center, along with contractor Arthur D. Little Inc., performed detailed analyses of how design improvements/additions to S-580 would affect the probable resulting injuries/deaths in each of five accident scenarios described in the final rulemaking document. Third, the Working Group analyzed and deliberated the proposed costs and benefits to determine the effectiveness of each of the proposed changes to S-580. The Working Group then presented its findings to the full RSAC Committee.

The Working Group conducted its meetings on the following dates at the following locations: (1) September 8-9, 1997, Washington D.C.; (2) February 2-3, 1998, Jacksonville, FL; (3) April 9-10, 1998, Fort Pierce, FL; (4) July 14-15, 1998, Las Vegas, NV; (5) October 28-29, 1998, Kansas City, MO; (6) February 25-26, 1999, Washington, D.C.; (7) June 15-16, 1999, Las Vegas, NV; (8) October 19-20, 1999, Sterling, VA; (9) December 13-14, 1999, Jacksonville, FL; (10) October 9-10, 2001, Washington, D.C.;

(11) January 17-18, 2002, Jacksonville, FL; and (12) June 28-19, 2005.

As noted above, the Working Group had its inaugural meeting on September 8-9, 1997, in Washington D.C. After reviewing its formal Task Statement to gain an understanding of the scope of its mission, the Working Group recognized that a smaller, more manageable group could more effectively consider the technical requirements and debate the advantages and disadvantages of the technical options available. Thus, the S-580/ Engineering Review Task Force ("Engineering Task Force") was created for this sole purpose. The Engineering Task Force was made up of Working Group members who either volunteered or named a fellow member as a representative. The Engineering Task Force met four times and conducted meetings by telephone conference on three occasions. These task force meetings served to advance the technical aspects of the issues and were open to all members of the Working Group. These meetings were somewhat less formal, and were conducive to free exchanges of technical information and ideas.

The Working Group next examined a list of crash survival concepts that FRA had previously assembled. The Engineering Task Force discussed each concept in light of the accidents reviewed. There was general agreement among Task Force members about the continued need for braced collision posts, corner posts, and the utilization of crash energy management principles to minimize secondary collisions within the locomotive cab. The Task Force also discussed the variance of underframe sill heights, the frequency of locomotive roll-over occurrences, and the concept of crash refuges, but ultimately agreed with FRA's Report to Congress that these features held little promise as effective locomotive crashworthiness features and that further use of resources in pursuit of these concepts was not warranted. The Task Force then discussed collision post strength, wide-nose locomotive cabs, and cab corner strength as well as locomotive front-end strength up to the window level. The Task Force felt that these concepts required further development in order to further mitigate the consequences from the reviewed accidents, which included side/oblique collisions, coupled locomotive override, and shifted load collisions.

On November 2, 2004, FRA published a notice of proposed rulemaking (NPRM) addressing locomotive crashworthiness. In issuing the NPRM, FRA adopted the recommendations of the Working Group and the full RSAC. *See* 69 FR 63890. The NPRM provided for a 60-day comment period and provided interested parties the opportunity to request a public hearing. Based upon a request from an interested party, FRA issued a notice on January 12, 2005, extending the comment period from January 3, 2005, until February 3, 2005. *See* 70 FR 2105.

On June 28 and 29, 2005, the Working Group conducted a meeting to review and discuss the comments received in response to the NPRM. Minutes from this meeting have been placed in the docket of this proceeding. The Working Group discussed all of the issues raised in the comments and considered various methods by which to address the

comments. Based on information and discussions held at this meeting, the Working Group developed a recommendation for a final rule.

FRA has worked closely with the RSAC in the development of its recommendations and believes that the RSAC effectively addressed locomotive crashworthiness standards. FRA has greatly benefitted from the open, informed exchange of information that has taken place during meetings. There is general consensus among labor, management, and manufacturers concerning the primary principles FRA sets forth in this final rule. FRA believes that the expertise possessed by the RSAC representatives enhances the value of the recommendations, and FRA has made every effort to incorporate them in this final rule.

9. Payments or gifts to respondents.

There are no monetary payments or gifts made to respondents associated with the information collection requirements contained in this regulation.

10. Assurance of confidentiality.

No assurances of confidentiality were made by the Federal Railroad Administration (FRA). Information collected is not of a private nature.

11. Justification for any questions of a sensitive nature.

There are no questions or information of a sensitive nature that would normally be considered private matters requested in this collection of information.

12. Estimate of burden hours for information collected.

Based on the latest available FRA data, respondent universe is approximately 725 railroads and four (4) locomotive manufacturers.

§ 229.207

A. Petitions For FRA Approval of New Locomotive Crashworthiness Design Standards

General. The following procedures govern consideration and action upon requests for FRA approval of new locomotive crashworthiness design standards and changes to existing FRA-approved locomotive crashworthiness design standards, including AAR S-580-2005, Locomotive Crashworthiness Requirements. Only a standards body which has adopted an FRA-approved locomotive crashworthiness design standard may initiate these procedures for FRA approval of changes to the standard.

Each petition for FRA approval of a locomotive crashworthiness design standard must be titled "Petition for FRA Approval of a New Locomotive Crashworthiness Design Standard," must be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Avenue, S.E., Mail Stop 25, Washington, D.C. 20590, and must contain the following information: (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition; (2) The proposed locomotive design standard, in detail; (3) The intended type of service for locomotives designed under the proposed standard; and (4) Appropriate data and analysis showing how the proposed design standard either satisfies the requirements of § 229.205 for the type of locomotive design or provides at least an equivalent level of safety. Types of data and analysis to be considered are described in § 229.211(c)(1).

FRA estimates that it will receive approximately two (2) petitions annually under the above requirement. It is estimated that each petition request will take approximately 1,050 hours to complete (i.e., 50 hours of professional/administrative staff time and an average of 1,000 hours of engineering/design time by the locomotive manufacturer's staff to design new crashworthiness features into a locomotive). Total annual burden for this requirement is 2,100 hours.

Respondent Universe:	725 Railroads/4 Locomotive Manufacturers
Burden time per response:	1,050 hours
Frequency of Response:	On occasion
Annual Responses:	2 petition requests
Annual Burden:	2,100 hours

Calculation: 2 petition requests x 1,050 hrs. = 2,100 hours

B. Petitions For FRA Approval of Substantive Changes to an FRA-Approved Locomotive Crashworthiness Design Standard

Each petition for approval of a substantive change to an FRA-approved locomotive crashworthiness design standard must be titled "Petition for FRA Approval of Changes to a Locomotive Crashworthiness Design Standard," must be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Avenue, S.E., Mail Stop 25, Washington, D.C. 20590, and must contain the following information: (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition; (2) The proposed change, in detail; (3) The intended type of service for locomotives built with the proposed change; and

(4) Appropriate data and analysis showing how the resulting standard either satisfies the requirements for the type of locomotive set forth in § 229.205 or provides at least an equivalent level of safety. Types of data and analysis to be considered are described in § 229.211(c)(1).

FRA estimates that it will receive approximately one (1) petition annually under the above requirement. It is estimated that each petition request will take approximately 1,050 hours to complete (i.e., 50 hours of professional/administrative staff time and an average of 1,000 hours of engineering/design time by the locomotive manufacturer's staff to redesign crashworthiness features into a locomotive). Total annual burden for this requirement is 1,050 hours.

Respondent Universe:	725 Railroads/4 Locomotive Manufacturers
Burden time per response:	1,050 hours
Frequency of Response:	On occasion
Annual Responses:	1 petition request
Annual Burden:	1,050 hours

Calculation: 1 petition request x 1,050 hrs. = 1,050 hours

C. Petitions For FRA Approval of Non-Substantive Changes to the Existing FRA-Approved Crashworthiness Design Standards

Each petition for approval of a non-substantive change to an FRA-approved locomotive crashworthiness design standard must be titled "Petition for FRA Approval of Non-substantive Changes to a Locomotive Crashworthiness Design Standard," must be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Avenue, S.E., Mail Stop 25, Washington, D.C. 20590, and must contain the following: (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition; (2) The proposed change, in detail; and (3) Detailed explanation of how the proposed change results in a non-substantive change to the existing FRA-approved crashworthiness design standard.

If FRA determines that the proposed change is substantive, FRA will process the petition in accordance with paragraph (c) of this section.

FRA estimates that it will receive approximately one (1) petition annually under the above requirement. It is estimated that each petition request will take approximately 400

hours to complete (i.e., 50 hours of professional/administrative staff time and an average of 350 hours of engineering/design time by the locomotive manufacturer's staff to related to non-substantive changes to approved crashworthiness features of a locomotive). Total annual burden for this requirement is 1,600 hours.

Respondent Universe:	725 railroads/4 Locomotive Manufacturers
Burden time per response:	400 hours
Frequency of Response:	On occasion
Annual Responses:	1 petition request
Annual Burden:	400 hours

Calculation: 1 petition requests x 400 hrs. = 400 hours

Total annual burden for this entire requirement is 3,550 hours (2,100 + 1,050 + 400).

§ 229.209

Petitions For FRA Approval of Alternative Locomotive Crashworthiness Designs.

General. The following procedures govern consideration and action upon requests for FRA approval of locomotive crashworthiness designs which are not consistent with any FRA-approved locomotive crashworthiness design standard.

Each petition for FRA approval of an alternative locomotive crashworthiness design must be titled "Petition for FRA Approval of Alternative Locomotive Crashworthiness Design," must be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Avenue, S.E., Mail Stop 25, Washington, D.C. 20590, and must contain the following (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition; (2) The proposed locomotive crashworthiness design, in detail; (3) The intended type of service for locomotives built under the proposed design; and (4) Appropriate data and analysis showing how the design either satisfies the requirements of § 229.205 for the type of locomotive or provides at least an equivalent level of safety. Types of data and analysis to be considered are described in § 229.211(c)(1).

FRA estimates that it will receive approximately one (1) petition annually under the above requirement. Because railroads/manufacturers will be working off a performance standard here rather than a pre-approved design standard (AAR S-580) as in § 229.207A above, it is estimated that each petition request will take approximately 2,550 hours to

complete (i.e., 50 hours of professional/administrative staff time and an average of 2,500 hours of engineering/design time by the locomotive manufacturer's staff to design alternative crashworthiness features into a freight locomotive). Total annual burden for this requirement is 2,550 hours.

Respondent Universe:	725 railroads/4 Locomotive Manufacturers
Burden time per response:	2,550 hours
Frequency of Response:	On occasion
Annual Responses:	1 petition request
Annual Burden:	2,550 hours

Calculation: 1 petition request x 2,550 hrs. = 2,550 hours

§ 229.211

Processing of Petitions - Comment.

A. Federal Register notice. FRA will publish in the Federal Register notice of receipt of each petition submitted under §§ 229.207(b), 229.207(c), or 229.209. Not later than 60 days from the date of publication of the notice in the Federal Register concerning a petition submitted under §§ 229.207(b), 229.207(c), or 229.209.

Comment. Not later than 60 days from the date of publication of the notice in the Federal Register concerning a petition submitted under §§ 229.207(b), 229.207(c), or 229.209(b), any person may comment on the petition.

Each comment must set forth specifically the basis upon which it is made, and contain a concise statement of the interest of the commenter in the proceeding. Each comment must be submitted to the U.S. Department of Transportation Central Docket Management System, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590, and must contain the assigned docket number which appeared in the Federal Register for that proceeding. The form of such submission may be in written or electronic form consistent with the standards and requirements established by the Central Docket Management System and posted on its Web site at http://www.regulations.gov.

FRA estimates that approximately five (5) comments will be made annually under the above requirement. It is estimated that each comment will take approximately 16 hours to complete. Total annual burden for this requirement is 80 hours.

Respondent Universe: 4 Locomotive Manufacturers/Railroad Association/Labor Organizations/Public

Burden time per response: 16 hours

Frequency of Response: On occasion
Annual Responses: 5 comments
Annual Burden: 80 hours
Calculation: 5 comments x 16 hrs. = 80 hours

B. In the event FRA requires additional information to appropriately consider the petition, FRA will conduct a hearing on the petition in accordance with the procedures provided in § 211.25 of this chapter.

FRA estimates that it will hold hearings to obtain additional information in approximately eight (8) cases under the above requirement. It is estimated that each hearing will have four (4) commenters, and that it will take each commenter approximately six (6) hours to provide the additional information at the hearing (or a total of 24 hours per hearing). Total annual burden for this requirement is 48 hours.

Respondent Universe: 725 railroads/4 Locomotive Manufacturers / Other Interested Parties/Public

Burden time per response: 24 hours

Frequency of Response: On occasion

Annual Responses: 2 hearings (and a total of 8 comments providing additional information)

Annual Burden: 48 hours

Calculation: 2 hearings x 24 hrs. = 48 hours

Total annual burden for this entire requirement is 128 hours (80 + 48).

§ 229.213

Locomotive Manufacturing Information.

(a) Each railroad operating a locomotive subject to the requirements of this subpart must retain the following information: (1) The date upon which the locomotive was manufactured or re-manufactured; (2) The name of the manufacturer or re-manufacturer of the locomotive; and (3) The design specification to which the locomotive was manufactured or re-manufactured.

The information required in paragraph (a) of this section must be located permanently in the locomotive cab or be provided within two business days upon request of FRA or an FRA-certified State inspector.

FRA estimates that approximately 1,000 railroad locomotives a year that have been manufactured or re-manufactured will be subject to the above informational requirement. It is estimated that it will take each railroad approximately six (6) minutes to complete a computer record/sticker/badge plate with the necessary information. Total annual burden for this requirement is 100 hours.

Respondent Universe:	725 Railroads
Burden time per response:	6 minutes
Frequency of Response:	On occasion
Annual Responses:	1,000 records/stickers/badge plates
Annual Burden:	100 hours

Calculation: 1,000 locomotive plates/badges x 6 min. = 100 hours

§ 229.215

A. Retention of Records - Original Designs.

Each manufacturer or re-manufacturer of a locomotive subject to this subpart must retain all records of the original locomotive designs, including supporting calculations and drawings, pertaining to crashworthiness features required by this subpart. These records must be retained for the lesser period of: (1) The life of such locomotive, except that records for a locomotive destroyed in a rail equipment accident/incident must be retained for at least 12 months following the accident/incident; or (2) Twenty years after the date of manufacture or, if re-manufactured, twenty years after the date of re-manufacture.

FRA estimates that the approximately four manufacturers/re-manufacturers of locomotives subject to this subpart will keep approximately 24 records containing the required information. It is estimated that it will take each manufacturer approximately eight (8) hours to create and store the required records. Total annual burden for this requirement is 192 hours.

Respondent Universe:	4 Locomotive manufacturers
Burden time per response:	8 hours
Frequency of Response:	On occasion
Annual Responses:	24 locomotive records
Annual Burden:	192 hours

Calculation: 24 locomotive records x 8 hrs. = 192 hours

B. Retention of Records - Repairs and Modifications.

Each owner or lessee of a locomotive subject to this subpart must retain all records of repair or modification to crashworthiness features required by this subpart. These records must be retained for the lesser period of: (1) The life of such locomotive, except that records for a locomotive destroyed in a rail equipment accident/incident must be retained for at least 12 months following the accident/incident; or (2) Twenty years after the date on which the repair/modification was performed.

FRA estimates that approximately six (6) records of modifications /repairs to locomotive crashworthiness features will be retained by railroads/locomotive lessees under the above requirement. It is estimated that it will take each railroad/lessee approximately four (4) hours to create and store each required record. Total annual burden for this requirement is 24 hours.

	Respondent Universe:
	725 railroads/locomotive lessees
Burden time per response:	4 hours
Frequency of Response:	On occasion
Annual Responses:	6 locomotive crashworthiness modification/repair records
Annual Burden:	24 hours

Calculation: 6 loc. crashworthiness modific./ repair records x 4 hrs. = 24 hours

C. Inspection of Records.

Each custodian of records referred to in paragraphs (a) and (b) (of this section) must, upon request by FRA or an FRA-certified State inspector, make available for inspection and duplication, within 7 days, any records referred to in paragraphs (a) and (b) of this section.

FRA estimates that approximately 10 records will be copied after agency/state inspector requests under the above requirement. It is estimated that it will take approximately two (2) minutes to complete each copy. Total annual burden for this requirement is .33 hour.

Respondent Universe:	6 Locomotive Manufacturers/Rebuilders
Burden time per response:	2 minutes
Frequency of Response:	On occasion
Annual Responses:	10 records
Annual Burden:	.33 hour

Calculation: 10 records x 2 min. = .33 hour

D. Third Party Storage of Records.

Each custodian of records referred to in paragraphs (a) and (b) (of this section) may delegate storage duties to a third party; however, the custodian retains all responsibility for compliance with this section.

FRA estimates that it is highly unlikely there will be any situation where a custodian would delegate storage duties to a third party. Consequently, there is no burden associated with this requirement.
Total annual burden for this entire requirement is 216 hours (192 + 24 + .33).

Total annual burden for this entire information collection is requirement is 6,544 hours.

13. Estimate of total annual costs to respondents.

RESPONDENT COST

Additional respondent cost outside of burden hours shown above for each information

collection requirement is as follows:

Subsequent Years

$ 2,541	Printing of interior decals	
10,532	Printing of exterior decals	
453		Postage
178	Copying charges	
2,778		Miscellaneous
$ 16,482		

14. **Estimate of Cost to Federal Government**.

The cost to the Federal government will be for reviewing and approving locomotive design standards. FRA estimates that staff and engineering specialists will spend approximately 120 hours per locomotive design/model for review and approval. (*Note: FRA estimates the hourly labor rate for agency engineers/safety specialists at $63. This cost includes overhead charges of 75%.*)

The costs then are as follows:

1.) New Locomotive Crashworthiness Design Standards

3 Designs x 120 hrs. x $86 = $30,960

2.) Substantive Changes to an FRA-Approved Locomotive Crashworthiness Design Standard

2 Model Design Modifications x 120 hrs. x $86 = $20,640

3.) Non-substantive Changes to the Existing FRA-Approved Locomotive Crashworthiness Design Standards

4 Model Design Modifications x 60 hrs. x $86 = $20,640

4.) Alternative Locomotive Crashworthiness Designs

1 Alternative Design x 120 hrs. x $86 = $10,320

TOTAL = $82,560

15. **Explanation of program changes and adjustments**.

The total burden for this information collection amounts to *6,544 hours.* There is **no change** then in the number of burden hours from the previously approved submission,

and there are no **program changes** or **adjustments** at this time. The only item that has changed is the number of railroads (from 720 to 725).

The current inventory for this information collection shows a total of 6,544 hours, while the present submission exhibits a total of 6,544 hours.

There is no change in cost to respondents from the previously approved submission.

16. Publication of results of data collection.

FRA plans no publication of this information.

17. Approval for not displaying the expiration date for OMB approval.

Once OMB approval is received, FRA will publish the approval number for these information collection requirements in the Federal Register.

18. Exception to certification statement.

No exceptions are taken at this time.

Meeting Department of Transportation (DOT) Strategic Goals

This information collection supports the main DOT strategic goal, namely transportation safety. Without this collection of information, the number and extent of casualties to train crew personnel might increase substantially because newly manufactured/re-manufactured locomotives were not properly designed and sufficiently constructed to help protect occupants in the event that a locomotive collides with another locomotive, the rear of another train, a piece of on-track equipment, a shifted load on a freight car on an adjacent parallel track, or a highway vehicle at a rail-highway grade crossing. A review of accidents involving locomotives from 1995-1997 revealed over 95 relevant accidents, and approximately 105 casualties per year. These casualties included 26

locomotive cab crew members who were killed. The fatalities were typically caused by loss of occupant space, severe trauma, drowning, or fire related injuries.

This collection of information contributes to rail safety by ensuring that FRA will be able to review and evaluate changes and enhancements to the current standard of locomotive crashworthiness for conventional locomotives, AAR S-580, before such locomotives are manufactured/re-manufactured. FRA carefully examines petitions for new locomotive crashworthiness design standards, petitions for approval of substantive changes to an FRA-approved locomotive crashworthiness design standard, and petitions for approval of an alternative locomotive crashworthiness design to determine that they are justified and safe before granting its seal of approval.

The collection of information also contributes to rail safety by facilitating FRA's ability to obtain comments from railroad industry groups, locomotive manufacturers/re-manufacturers, other interested parties, and the public concerning a new locomotive design standard or changes to an FRA-approved locomotive design standard. Without the ability to hear from affected parties and to access the widest expertise and knowledge, FRA would be hindered in its capacity to make a determination whether it is justified and safe to approve a new/alternative locomotive crashworthiness design standard, or substantive changes to an FRA-approved locomotive crashworthiness design standard.

Finally, the collection of information contributes to rail safety because it provides access to critical information about conventional (freight) locomotives. Specifically, it provides access to essential records. Without this collection of information, FRA would be unable to ascertain the date upon which a locomotive was manufactured or re-manufactured, or the name of the manufacturer/re-manufacturer of a locomotive, or the design specification to which the locomotive was manufactured or re-manufactured. Thus, FRA would have no way of quickly determining whether a locomotive is subject to the requirements of this rule. Also, it would be unable to review records of the original locomotive designs, including supporting calculations and drawings, pertaining to crashworthiness features required by this subpart. Additionally, it could not examine records relating to the repair or modification of locomotives with crashworthiness features required by this Subpart. As a result, FRA would be unable to determine compliance with the requirements of this Subpart. Moreover, such information might prove critical to investigators looking into train crew injuries and fatalities resulting from an accident/incident involving freight locomotives, and might prove extremely helpful in devising necessary measures to prevent such casualties from occurring again in the future.

In this information collection, as in all its information collection activities, FRA seeks to do its utmost to fulfill DOT Strategic Goals and to be an integral part of One DOT.