

**SUPPORTING JUSTIFICATION  
RAILROAD POWER BRAKES AND DRAWBARS  
OMB No. 2130-0008 (49 CFR Part 232)**

Summary

- This submission is a request for an extension with change to the last approved submission pertaining to Part 232 that was approved by OMB on November 4, 2015, and which expires November 30, 2018.
- FRA published the required 60-day **Federal Register** Notice on August 1, 2018. See 83 FR 37606. FRA received no comments in response to this Notice.
- The total number of burden **hours requested** for this submission is **1,080,245 hours**.
- Total number of **responses requested** for this submission is **30,525,348**.
- The total number of burden **hours previously approved** is **1,172,638 hours** and the total number of **responses previously approved** is **32,159,422**.
- The change in burden from the last approved submission amounts to a decrease of **92,393 hours**, and a decrease of **1,634,074 responses**.
- **Adjustments** amount to/decreased the burden by **92,393 hours**, and decreased the number of **responses** by **1,634,074**.
- **\*\***The answer to question **number 12** itemizes the hourly burden associated with each requirement of this rule (See pp. 29-102).
- **\*\*** The table in answer to question **number 15** itemize all **adjustments** and **program changes** (See pp. 104-106).

**1. Circumstances that make collection of the information necessary.**

**Background**

In 2001, FRA issued regulations governing the securement of unattended equipment. These regulations have been effective in protecting against the risk of rolling equipment. Over the last few years, there has been a significant increase in the volume of rail traffic for certain types of commodities, such as crude oil and ethanol, both of which are highly flammable and often transported in large unit or “key” trains, as defined in the industry by the Association of American Railroad (AAR). See Association of American

Railroads, Circular No. OT-55-N (Aug. 5, 2013), [available at http://www.boe.aar.com/CPC-1258%20OT-55-N%208-5-13.pdf](http://www.boe.aar.com/CPC-1258%20OT-55-N%208-5-13.pdf).

Since 2009, there have been a number of serious rail accidents involving the transportation of flammable liquids. A number of these accidents involved trains transporting ethanol. However, since 2011, there has been significant growth in the rail transport of flammable crude oil, and FRA has seen a number of accident-related releases of crude in that time. The first significant accident was July 6, 2013, derailment in the town of Lac-Mégantic, Quebec, Canada, involving tank cars loaded with petroleum crude oil. After reviewing the facts related to this derailment, FRA concluded that additional action was necessary to eliminate an immediate hazard of death, personal injury, or significant harm to the environment, particularly in instances where certain hazardous materials are involved. Thus, nearly a year ago FRA issued Emergency Order 28 requiring railroads to implement additional procedures to ensure the proper securement of equipment containing certain types and amounts of hazardous materials when left unattended. *See* 78 FR 48218 (Aug. 7, 2013). Subsequent to the issuance of Emergency Order 28, FRA also enlisted the assistance of the Rail Safety Advisory Committee (RSAC) to develop recommendations regarding the attendance and securement of railroad equipment transporting certain hazardous materials when left unattended in light of the requirements contained in Emergency Order 28.

On July 6, 2013, in the town of Lac-Mégantic, Quebec, Canada, an accident involving tank cars loaded with petroleum crude oil occurred on track owned by Montreal, Maine & Atlantic Railway Corporation (MMA), a company incorporated in the United States. While Canadian authorities have not yet released a final report on the accident and no conclusions have been made, the following is known based on information released by the Transportation Safety Board of Canada.

The Transportation Safety Board (TSB) of Canada issued a report at the conclusion of its investigation into the incident, and the following is a summary of the TSB's factual findings.<sup>1</sup> On July 5, 2013, a locomotive engineer was operating freight train MMA-002 on the Sherbrooke Subdivision from Farnham (milepost 125.60) and at around 10:50 p.m. stopped near Nantes, Quebec (milepost 7.40) on its way to its destination, Brownville Junction, Maine. The train was approximately 4,700 feet long, weighed over 10,000 tons, and included a locomotive consist of 5 head-end locomotives and one VB car which served as a type of special-purpose caboose), one box car (buffer car), and 72 tank cars loaded with approximately 7.7 million liters of petroleum crude oil (UN 1267). The locomotive engineer parked train MMA-002 on the main line, on a descending grade of 1.2%, attempted to secure the train, and departed by automobile, leaving the train unattended. At around 11:40 p.m., a local resident reported a fire on the train. The local fire department was called and responded with another MMA employee. At

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<sup>1</sup> Railway Investigative Report R13D0054, TSB, July 6, 2013, [available at http://www.tsb.gc.ca/eng/rapports-reports/rail/2013/R13D0054/R13D0054.pdf](http://www.tsb.gc.ca/eng/rapports-reports/rail/2013/R13D0054/R13D0054.pdf).

approximately midnight, the controlling locomotive was shut down and the fire extinguished. After the fire was extinguished, the fire department and the MMA employee left the site.

At approximately 1:00 a.m. the next day (the early morning of July 6th), the train began rolling and picking up speed down the descending grade toward the town of Lac-Mégantic, Quebec, located 7.2 miles away and approximately 30 miles from the United States-Canada border. At about 1:15 a.m., near the center of town, the train derailed. The locomotive consist, which separated from the train, did not derail and traveled an additional ½ mile before stopping.

The derailment caused a release of 6 million liters of petroleum crude oil, resulting in a large fire with multiple explosions. At this time, it is estimated that there were 47 fatalities.<sup>2</sup> There was also extensive damage to the town, and approximately 2,000 people were evacuated from the surrounding area.

In response to this accident, Transport Canada—the Canadian government department responsible for regulating transportation safety in Canada—issued an emergency railroad directive on July 23, 2013.<sup>3</sup> While Transport Canada explained in the emergency directive that the cause of the accident in Lac-Mégantic remains unknown, the emergency directive stated that, “in light of the catastrophic results of the Lac-Mégantic accident and in the interest of ensuring the continued safety and security of railway transportation, there is an immediate need to clarify the regime respecting unattended locomotives on main track and sidings and the transportation of dangerous goods in tank cars using a one person crew to address any threat to the safety and security of railway operations.” As such, Transport Canada exercised its statutory emergency directive authority to order railroad companies in Canada to comply with certain requirements related to unauthorized entry into locomotive cabs, directional controls on locomotives, the application of hand brakes to cars left unattended for more than one hour, setting of the automatic brake and independent brake on any locomotive attached to cars that is left unattended for one hour or less, attendance related to locomotives attached to loaded tank cars transporting dangerous goods on main track, and the number of crew members assigned to a locomotive attached to loaded tank cars transporting dangerous goods on a main track or siding.

Also on July 23, 2013, Transport Canada issued an accompanying order pursuant to paragraph 19(a)(1) of the Canadian Railway Safety Act directing railroad companies in Canada to formulate or revise certain railroad operating rules, respecting the safety and

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<sup>2</sup> See *id.*; see also Statistical Summary Railway Occurrences 2013, TSB, pp. 2, 5, available at <http://www.tsb.gc.ca/eng/stats/rail/2013/ssro-2013.pdf>.

<sup>3</sup> See Emergency Directive Pursuant to Section 33 of the Railway Safety Act, Safety and Security of Locomotives in Canada, July 23, 2013, available at <http://news.gc.ca/web/article-en.do?nid=829609>; see also Rail Safety Advisor Letter – 09/13, Securement of Equipment and Trains Left Unattended, Transport Canada (July 18, 2013), available at <http://www.tsb.gc.ca/eng/medias-media/sur-safe/letter/rail/2013/r13d0054/r13d0054-617-09-13.asp>.

security of unattended locomotives, uncontrolled movements, and crew size requirements.<sup>4</sup> The order provides that rules should be based on an assessment of safety and security risks, and shall at a minimum ensure that the cab(s) of unattended controlling locomotives are secure against unauthorized entry; ensure that the reversers of unattended locomotives are removed and secured; prevent uncontrolled movements of railway equipment by addressing the application of hand brakes; ensure the security of stationary railway equipment transporting dangerous goods; and provide for minimum operating crew requirements considering technology, length of train, speeds, classification of dangerous goods being transported, and other risk factors.

The Railway Association of Canada submitted proposed rules to Transport Canada on November 20, 2013. Transport Canada accepted the proposed rules submitted on December 26, 2013. See TC O 0-167. As a result, railroads operating in Canada are now required to comply with Canadian Rail Operating Rules (CROR) CROR 112, as amended.

CROR 62 pertains to “Unattended engines.” The term “unattended” is now defined in the CROR as “when an employee is not in close enough proximity to take effective action.” The new Canadian requirements, applicable to each engine left unattended outside of an attended yard or terminal, requires cab securement to prevent unauthorized entry and removal of the reverser from the engine when it does not have a high idle feature and not in sub-zero temperatures. See CROR 62 (TC O 0-167). Transport Canada also approved expansive revisions to CROR 112, which now provides minimum requirements, acceptable methods, and factors to consider for securing equipment while switching en route or left unattended. See CROR 112 (TC O 0-167).

In direct response to the Lac-Mégantic derailment, DOT began taking actions consistent with Transport Canada to ensure the safe transportation of products by rail in the United States, with a particular focus on certain hazardous materials that present an immediate danger for communities and the environment in the event of a train accident. In Emergency Order 28, FRA sought to address the immediate dangers that arise from unattended equipment that is left unsecured on mainline tracks. FRA has decided that Emergency Order 28 will sunset on the effective date of this final rule. AAR and ASLRR concur in their comments. Until such time, however, Emergency Order 28 will remain in effect, as amended by FRA’s August 27, 2013, letter approving with conditions a joint petition for relief from the AAR and the American Short Line and Regional Railroad Association (ASLRRRA). Railroads currently are required to comply with Emergency Order 28, as amended, in addition to 49 CFR 232.103(n). Emergency Order 28, as amended, contains six securement-related requirements governing when, where, and how certain hazardous materials tank cars may be left unattended, including certain communication requirements:

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<sup>4</sup> Railroads operating within Canada were at the time of the Lac-Mégantic derailment, and are currently, required to comply with the Canadian Rail Operating Rules (CROR) that have been approved by Transport Canada.

(1) A railroad must not leave equipment unattended on a mainline outside of a yard or terminal when the equipment includes a minimum number of loaded tank cars containing certain types of hazardous materials, referred to as “Appendix A Materials” —5 or more tank cars of PIH, including anhydrous ammonia and ammonia solutions and/or 20 rail car loads of flammable gases or liquids (e.g. crude oil and ethanol)—until the railroad develops, adopts, and complies with a plan that identifies specific locations and circumstances when such equipment may be left unattended.<sup>5</sup>

(2) A railroad must develop a process for securing unattended equipment containing Appendix A Materials that includes: (a) locking the controlling locomotive cab or removing and securing the reverser and (b) communication of pertinent securement information to the dispatcher for recordation.

(3) Each railroad must review and verify, and adjust, as necessary, existing procedures and processes related to the number of hand brakes to be set on all unattended trains and equipment.

(4) Each railroad must require a job briefing addressing securement for any job that will impact or require the securement of any equipment in the course of the work being performed.

(5) Each railroad must ensure that a qualified railroad employee inspects all equipment that any emergency responder has been on, under, or between for proper securement before the train or vehicle is left unattended.

(6) Each railroad must provide notice to all employees affected by Emergency Order 28. See 78 FR 48224 (Aug. 7, 2013).

Following a request from the Association of American Railroads (AAR) and the American Short Line and Regional Railroad Association (ASLRRA), FRA granted partial relief from Emergency Order 28’s dispatcher communication requirement in certain limited situations. FRA’s relief letter provides that a railroad employee may leave equipment unattended on a mainline or siding without contacting the train dispatcher when the employee is actively engaged in switching duties as long as the employee ensures that there is an emergency application of the air brakes, hand brakes are set in accordance with 49 CFR 232.103(n), and the employee has demonstrated knowledge of FRA and railroad securement requirements. See Letter from Robert C. Lauby, Acting Associate Administrator for Railroad Safety/Chief Safety Officer, Federal Railroad Administration, to Michael J. Rush, Associate General Counsel, Association of American Railroads, and Keith T. Borman, Vice President and General Counsel,

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<sup>5</sup> AAR has voluntarily applied EO 28 to trains that have a single PIH tank car.

American Short Line and Regional Railroad Association, (Aug. 27, 2013), [available at https://rsac.fra.dot.gov/meetings/20130829.php](https://rsac.fra.dot.gov/meetings/20130829.php).

Additionally, FRA and the Pipeline and Hazardous Materials Safety Administration (PHMSA) jointly issued a Safety Advisory to railroads and commodity shippers detailing eight recommended actions the industry should take to better ensure the safe transport of hazardous materials. See Federal Railroad Administration Safety Advisory 2013-06, Lac-Mégantic Railroad Accident and DOT Safety Recommendations, 78 FR 48224 (Aug. 7, 2013), [available at http://www.fra.dot.gov/eLib/details/L04720](http://www.fra.dot.gov/eLib/details/L04720). These recommendations include: reviewing the details and lessons learned from the Lac Mégantic accident; reviewing crew staffing levels; removing and securing the train's "reverser" when unattended; review of all railroad operating procedures, testing and operating rules related to securing a train; reviewing Transport Canada's directives to secure and safely operate a train; and conducting a system-wide assessment of security risks when a train is unattended and identify mitigation efforts for those risks. Additionally, the Safety Advisory recommends testing and sampling of crude oil for proper classification for shipment, as well as a review of all shippers' safety and security plans. FRA also convened an emergency meeting of FRA's RSAC to begin the deliberative process with FRA's stakeholders, including railroad management, railroad labor, shippers, car owners, and others, as the agency considers requirements in Emergency Order 28 and recommendations in the Safety Advisory that should be made a part of its regulations.<sup>6</sup>

On August 19, 2014, the TSB released its Railway Investigation Report R13D0054, citing 18 causal and contributing factors, plus an additional 16 findings as to risk, concerning the accident at Lac-Mégantic. FRA believes that DOT has taken, or is already taking, action concerning each of those factors. The TSB notably included in its list of factors the MMA's weak safety culture and ineffective oversight on train securement. The report also identified factors relating directly to train securement such as insufficient hand brakes and improper hand brake test applications. The requirements in this final rule intend to enhance safety culture and oversight that addresses train securement. For instance, as further discussed below, FRA is mandating by regulation the implementation of operating rules and practices requiring that securement be part of all relevant job briefings. This final rule also requires verification with a qualified person that equipment is adequately and effectively secured in accordance with the regulations

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<sup>6</sup> The RSAC was given three tasks. In addition to developing securement recommendations, it was also tasked with developing recommendations addressing issues relating to train crew size and hazardous materials such as identification and classification of hazardous materials, operational controls, and handling of certain hazardous materials shipments. While the RSAC was not able to reach a consensus on train crew size, FRA is moving forward with a notice of proposed rulemaking in a separate rulemaking. The RSAC hazardous materials working group was able to reach consensus on amending the definitions of "residue" and "key train" and clarifying the jurisdiction concerning loading, unloading, and storage of hazardous materials before and during transportation. These recommendations have been provided to PHMSA, which has regulatory authority over hazardous materials shipments.

before being left unattended. These requirements aim to increase the safety dialog between railroad employees and to provide enhanced oversight within the organization. In doing so, these communications should better ensure that crew members apply the proper number of hand brakes, and more correctly apply hand brake tests, on unattended equipment. Also notable was the report's findings as to risk that states: "If trains are left unattended in easily accessible locations, with locomotive cab doors unlocked and the reverser handle available in the cab, the risk of unauthorized access, vandalism, and tampering with locomotive controls is increased." This final rule directly addresses this concern with requirements relating to the installation and use of locomotive exterior door locks and reverser removal.

The vast majority of hazardous materials shipped by rail each year arrive at their destinations safely and without incident. Indeed, in calendar year 2013, there were only 18 accidents in which a hazardous material was released (involving a total of 78 cars) out of approximately 1.6 million shipments of hazardous material transported in rail tank cars in the United States. However, the Lac-Mégantic incident demonstrates the substantial potential for danger that exists when an unattended train rolls away and derailed resulting in the sudden release of hazardous materials into the environment. Although the Lac-Mégantic incident occurred in Canada, the freight railroad operating environment in Canada is similar to that in the United States, and a number of railroads operate in both countries.<sup>7</sup> Freight railroads in the United States also transport a substantial amount and variety of hazardous materials, including materials poisonous by inhalation (PIH materials), also known as materials toxic by inhalation (TIH), and explosive materials. Moreover, an increasing proportion of the hazardous materials transported by rail is classified as flammable.<sup>8</sup>

The MMA train in the Lac-Mégantic incident was transporting 72 carloads of crude oil with five locomotives, a VB car, and a loaded box car. A similar type of train consist is commonly found on rail lines in the United States, because crude oil is often transported in solid blocks or by a unit train consisting entirely of tank cars containing crude oil. Crude oil is generally classified by an offeror as a Class 3 flammable liquid; per PHMSA's Hazardous Materials Regulations (HMR), however, its packing group can be I,

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<sup>7</sup> As an example, MMA formerly operated in both the United States and Canada, with approximately 510 miles of track in Maine, Vermont, and Quebec, and the tank cars transporting the crude oil that derailed in Lac-Mégantic originated in the Williston Basin of North Dakota. A discussion concerning the applicable Canadian securement requirements can be found above in the section titled "2. Response," which addresses the actions taken by the United States and Canada in direct response to the Lac-Mégantic incident.

<sup>8</sup> PHMSA prescribes a comprehensive regulatory safety system that categorizes hazardous materials into nine hazard classes based on the type of hazards presented by the materials. See 49 CFR parts 172 and 173. Under PHMSA's regulations, crude oil, in most forms, meets the definition of a "Class 3" hazardous material, which signifies that it is a flammable liquid. Ethanol, discussed below, also is a Class 3 hazardous material. PIH materials, referenced above, include "Class 2 and Division 2.3" gases and "Class 6, and Division 6.1" poisons other than gases. Chlorine gas and anhydrous ammonia are two examples of PIH materials (Division 2.3) that are commonly transported by rail.

II, or III depending on the blend of constituent crude oils.<sup>9</sup> According to the AAR, crude oil traffic increased 68-fold in the United States between 2005 and 2013. Much of this growth has occurred because of developments in North Dakota, as the Bakken formation in the Williston Basin has become a major source for oil production in the United States. Texas also has contributed to the growth of crude oil shipments by rail. As a result, carloads of crude oil increased from approximately 81,452 in 2011 to approximately 485,384 in 2013. The Bakken crude oil from North Dakota is primarily shipped via rail to refineries located near the U.S. Gulf Coast—particularly in Texas and Louisiana—or to pipeline connections, most notably to connections located in Oklahoma. Crude oil is also shipped via rail to refineries on the East Coast and West Coast, and to a lesser extent, refineries in other regions of the U.S.<sup>10</sup>

All indications from the U.S. Department of Energy’s U.S. Energy Information Administration (EIA) are that rail export capacity for Bakken crude oil from the Williston Basin will continue to expand to meet production.<sup>11</sup> Rail exports from the North Dakota region are forecast to increase over the next two years (as are pipeline exports). Much of the near-term growth in rail originations is a function of how quickly rail car manufacturers can meet the demand by producing new tank cars, primarily for transporting Bakken crude oil. The rise in rail originations in crude oil is subject to changes in the number of tank cars available, price of crude oil, overall production of crude oil in that region; and if, or how quickly, additional pipeline export capacity from that region comes online. However, for the foreseeable future, all indications are for continued growth of rail originations of crude in that region as new tank car fleets come online to meet demand.

As demonstrated by the Lac-Mégantic derailment, in a catastrophic incident, crude oil is problematic when released because it is flammable. This risk is compounded because it is commonly shipped in large unit trains. Subsequent to the Lac-Mégantic derailment, the United States has seen at least three serious rail-related incidents involving crude oil unit trains that evidence the dangerous results that can occur when crude oil is not transported safely. FRA recognizes that none of these three derailments resulted from a roll-away situation that would have been addressed by this rule.

On April 30, 2014, there was a derailment near downtown Lynchburg, Virginia, of an eastbound CSX Transportation, Inc. (CSX) unit train consisting of 105 tank cars loaded with petroleum crude oil. Seventeen of the train’s cars derailed. One of the tank cars

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<sup>9</sup> PHMSA uses packing groups to categorize hazardous materials according to the danger presented. Hazardous materials in Packing Group I present great danger; Packing Group II present medium danger; and Packing Group III presents minor danger. See 49 CFR § 171.8.

<sup>10</sup> See AAR’s May 2013 paper “Moving Crude Oil by Rail”, available online at:

[https://www.aar.org/safety/Documents/Assets/Transportation\\_of\\_Crude\\_Oil\\_by\\_Rail.pdf](https://www.aar.org/safety/Documents/Assets/Transportation_of_Crude_Oil_by_Rail.pdf).

<sup>11</sup> See EIA reports “Bakken crude oil price differential to WTI narrows over last 14 months”, available online at: <http://www.eia.gov/todayinenergy/detail.cfm?id=10431>; and “Rail delivery of U.S. oil and petroleum products continues to increase, but pace slows”, available online at: <http://www.eia.gov/todayinenergy/detail.cfm?id=12031>.



was breached, leading to a petroleum crude oil fire. Emergency responders were forced to evacuate approximately 400 individuals and 20 businesses from the immediate area. Additionally, three of the derailed tank cars came to rest in the adjacent James River, causing up to 30,000 gallons of petroleum crude oil to be spilled into the river. The National Transportation Safety Board (NTSB) and DOT both investigated this accident and determined that it was caused by a sudden rail failure under the moving train.

On December 30, 2013, a westbound grain train derailed 13 cars near Casselton, North Dakota, fouling main track 2.<sup>12</sup> Simultaneously, an eastbound petroleum crude oil unit train was operating on main track 2. The petroleum crude oil unit train reduced its speed and collided with a derailed car that was fouling, resulting in the derailment of the head-end locomotives and the first 21 cars of the petroleum crude oil unit train. Eighteen of the 21 derailed tank cars ruptured, releasing an estimated 400,000 gallons of crude. The ruptured tank cars ignited causing an explosion. There were no reported injuries by either train crew, nor were there any injuries to the public; however, about 1,400 people were evacuated. Damages from the derailment are estimated at \$6.1 million.<sup>13</sup>

Also, on November 8, 2013, a 90-car petroleum crude oil train derailed in a rural area near Aliceville, Alabama. The petroleum crude oil shipment had originated in North Dakota and was bound for Walnut Hill, Florida, to be transported by a regional pipeline to a refinery in Saraland, Alabama. More than 20 cars derailed and at least eleven cars ignited, resulting in an explosion and fire. Although there were no reported injuries, an undetermined amount of petroleum crude oil escaped from derailed cars and fouled a wetlands area near the derailment site.

The dangers related to crude oil trains are not necessarily unique. They also exist with other hazardous materials such as ethanol, which is another flammable liquid that is commonly transported in large quantities by rail. In 2012, more carloads of ethanol were transported via rail than any other hazardous material. The railroads experienced an increase in ethanol traffic of 442 percent between 2005 and 2010. Although in 2013 the number of carloads dropped by 10 percent from 2010 levels, there were still approximately 297,000 carloads transported by rail. Since 2009, there have been at least four serious mainline derailments resulting in the breach of tank cars containing ethanol. While FRA recognizes that none of these four derailments resulted from a roll-away situation, they are instructive on the destructive potential of a derailment involving tank cars containing flammable products:

- On August 5, 2012, in Plevan, Montana, a BNSF Railway Co. train derailed 18 cars while en route from Baker, Montana. Seventeen of the 18 cars were tank cars loaded with denatured alcohol, form of ethanol. Five of the cars caught fire resulting in explosions,

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<sup>12</sup> This derailment currently is being investigated by the National Transportation Safety Board (NTSB), and information regarding this incident can be found at the NTSB website. [See http://www.nts.gov/doclib/reports/2014/Casselton\\_ND\\_Preliminary.pdf](http://www.nts.gov/doclib/reports/2014/Casselton_ND_Preliminary.pdf).

<sup>13</sup> [See id.](#)

the burning of surrounding property not within the railroad's right of way, and the evacuation of the immediate area.

- On July 11, 2012, in Columbus, OH, a Norfolk Southern Railway Co. train derailed while operating on main track. Thirteen tank cars containing ethanol derailed resulting in a fire and the evacuation of 100 people within a one-mile radius of the derailment.
- On February 6, 2011, in Arcadia, Ohio, a Norfolk Southern Railway Co. train operating on single main track derailed 33 tank cars loaded with ethanol. The derailment caused a major fire and forced the evacuation of a one-mile radius around the derailment.
- On June 19, 2009, in Cherry Valley, Illinois, a Canadian National Railway train derailed 19 tank cars loaded with ethanol. Thirteen of the 19 derailed cars caught fire, and there were reports of explosions. One person died, and there were 9 reported injuries related to the fire. Additionally, approximately 600 residences were evacuated within a ½-mile radius of the derailment.

While these accidents were serious, their results had potential for more catastrophic outcomes. The catastrophic releases created the potential for additional deaths, injuries, property damage, and environmental damage.

There are other hazardous materials that have similar potential for catastrophic danger. For example, accidents involving trains transporting other hazardous materials, including PIH materials such as chlorine and anhydrous ammonia, can also result in serious consequences as evidenced by the following accidents:

- On January 6, 2005, in Graniteville, South Carolina, a Norfolk Southern Railway Co. train collided with another Norfolk Southern Railway Co. train that was parked on a customer side track, derailing both locomotives and 16 cars of the moving train. The accident was caused by a misaligned switch. Three tank cars containing chlorine derailed, one of which was punctured. The resulting chlorine exposure caused 9 deaths, approximately 554 people were taken to local hospitals, and an additional 5,400 people within a one-mile radius of the site were evacuated by law enforcement personnel. FRA's analysis of the total cost of the accident was \$126 million, including fatalities, injuries, evacuation costs, property damage, environmental cleanup, and track out of service.
- On June 28, 2004, near Macdona, TX, a Union Pacific Railroad train passed a stop signal and collided with a BNSF Railway train. A chlorine car was punctured and the chlorine gas that was released killed three and injured 32.
- On January 18, 2002, a Canadian Pacific Railway train containing 15 tank cars of anhydrous ammonia derailed half a mile from the city limits of Minot, North Dakota due to a breaking of the rail at a joint. Five of these tank cars ruptured catastrophically,

resulted in an ammonia vapor that spread 5 miles downwind over an area where 11,600 people lived. The accident caused one death, 11 serious injuries, and 322 minor injuries. Environmental cleanup costs reported to the NTSB were \$8 million.

- On July 18, 2001, 11 of 60 cars in a CSX Transportation, Inc. freight train derailed while passing through the Howard Street Tunnel in downtown Baltimore, Maryland. The train included 8 tank cars loaded with hazardous material; 4 of these were among the cars that derailed. A leak in a tank car containing tripropylene resulted in a chemical fire. A break in a water main above the tunnel flooded both the tunnel and the streets above it, resulting in the tunnel collapsing.

While train accidents involving hazardous materials are caused by variety of factors, nearly one-half of all accidents are related to railroad human factors or equipment defects. FRA's data show that, since 2009, human factors have been the most common cause of reportable train accidents. Based on FRA's accident reporting data for the period from 2010 through May 2014, approximately 34 percent of reported train accidents/incidents, as defined by 49 CFR 225.5, were human factor-caused.<sup>14</sup> With regard to the securement of unattended equipment, specifically, FRA accident/incident data indicate that approximately 8.7 percent of reported human factor-caused train accidents/incidents from calendar year 2010 until May 2014 were the result of improper securement, which means that improper securement is the cause of approximately 2.9 percent of all reported accidents/incidents.<sup>15</sup> The types of securement errors that typically lead to accidents/incidents include failing to apply any hand brakes at all, failing to apply a sufficient number of hand brakes, and failing to correctly apply hand brakes. Emergency Order 28 and this final rule intends to address some of the human factors failures that may cause unattended equipment to be improperly secured to protect against a derailment situation similar to that which occurred in Lac-Mégantic.

Despite the demonstrated effectiveness of FRA's current securement regulations, FRA recognizes that, due to increased shipments of hazardous materials such as crude oil and ethanol, combined with the potential for higher-consequences related to any accident that might occur due to improper securement, particularly on mainline track and mainline sidings outside of a yard, proper securement has become a serious and immediate safety concern. Therefore, FRA established additional securement measures in Emergency Order 28 in an effort to ensure the continued protection of the health and safety of railroad employees, the general public, and the environment. In this final rule, FRA establishes permanent rules to strengthen the current regulations and ensure public safety

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<sup>14</sup> FRA estimates that there were a total of approximately 8976 accidents/incidents reported during that time period. Approximately 3030 of those accidents/incidents were caused by human factors, and 906 involved equipment that was placarded as containing hazardous materials.

<sup>15</sup> There were a total of approximately 264 reported accidents/incidents that were caused by securement errors. Of those 264 accidents/incidents, approximately 98 involved equipment that was placarded as containing hazardous materials.

by adopting the necessary and effective securement measures that FRA included in Emergency Order 28 as part of its immediate response to the Lac-Mégantic derailment.

In sum, FRA amends the brake system safety standards for freight and other non-passenger trains and equipment to strengthen the requirements relating to the securement of unattended equipment. Specifically, FRA codifies many of the requirements already included in its Emergency Order 28, Establishing Additional Requirements for Attendance and Securement of Certain Freight Trains and Vehicles on Mainline Track or Mainline Siding Outside of a Yard or Terminal. FRA amends existing regulations to include additional securement requirements for unattended equipment, primarily for trains transporting poisonous by inhalation hazardous materials or large volumes of Division 2.1 (flammable gases), Division 3 (flammable or combustible liquids, including crude oil and ethanol), and Class 1.1 or 1.2 (explosives) hazardous materials. For these trains, FRA also provides additional communication requirements relating to job briefings and securement verification. Finally, FRA requires all locomotives left unattended outside of a yard to be equipped with an operative exterior locking mechanism. Attendance on trains is required on equipment not capable of being secured in accordance with the proposed and existing requirements.

Congress empowered the Secretary of Transportation, as necessary, to prescribe regulations and issue orders for every area of railroad safety supplementing laws and regulations in effect on October 16, 1970. See the Federal Rail Safety Act of 1970 (49 U.S.C. 20103). Authority to enforce Federal railroad safety laws has been delegated by the Secretary of Transportation to the Administrator of FRA. 49 CFR 1.89. Railroads are subject to FRA's safety jurisdiction under the Federal railroad safety laws. 49 U.S.C. 20101; 49 U.S.C. 20103.

**2. How, by whom, and for what purpose the information is to be used.**

On August 6, 2015, FRA amended Part 232 for freight and other non-passenger trains and equipment to strengthen the requirements relating to the securement of unattended equipment. Specifically, FRA added new § 232.103 (n)(6)-(n)(11) and new section 232.105(h)(1)-(h)(4). FRA uses the information collected under § 232.103(n)(7) to ensure that railroads adopt and comply with a plan identifying specific locations or circumstances when equipment may be left unattended. Railroads are required to notify FRA when they have developed their plans and have them in place, or modify an existing plan, prior to operating pursuant to that plan. FRA reviews these plans to determine that they contain sufficient safety justification for leaving such equipment unattended in the identified location or under the specified circumstances. Plans deemed to have insufficient safety justification are disapproved, and need to be modified before approval by FRA.

Under § 232.103(n)(8), railroads employees must verify with another qualified employee

of securement where a freight train or standing freight car or cars described in paragraph (n)(6) is left unattended on a main track or siding outside of a yard, and not directly adjacent to a yard. This requirement is similar to Emergency Order 28, which currently requires employees to verify proper securement with a qualified railroad employee. This may be done by relaying pertinent securement information (i.e., the number of hand brakes applied, the tonnage and length of the train or vehicle, the grade and terrain features of the track, any relevant weather conditions, and the type of equipment being secured) to the qualified railroad employee. The qualified railroad employee must then verify and confirm with the train crew that the securement meets the railroad's requirements. This verification and confirmation requirement amounts to a job briefing that is spelled out in paragraph (n)(9) and is essential for both the safety of railroad employees and the general public. Paragraph (n)(8)(ii) requires that the controlling locomotive cab be locked on locomotives capable of being locked or the reverser on the controlling locomotive be removed from the control stand and placed in a secure location. Each railroad may opt to either lock the locomotive or remove its reverser. Railroads are also free to require both the locking of the locomotive and the removal of the reverser. This requirement is intended to provide flexibility for railroads, further protection to the locomotive, and prevent unauthorized access to the locomotive cab.

FRA believes that the job briefing requirement in Emergency Order 28 should be codified in regulation and has done so under § 232.103 (n)(9). This section requires each railroad to implement operating rules and practices requiring the discussion of securement among crew members and other involved railroad employees before engaging in any job that will impact or require the securement of any equipment in the course of the work being performed. This proposed requirement is analogous to other Federal regulations that require crew members to have a job briefing before performing various tasks, such as confirming the position of a main track switch before leaving an area. The information exchanged in the job briefing will be used by railroad employees to make certain that all crew members and other involved railroad employees are aware of what is necessary to properly secure the equipment in compliance with § 232.103(n). FRA expects that the train crew will discuss the equipment that is impacted, the responsibilities of each employee involved in the securement of a train or vehicle, the number of hand brakes that will be required to secure the affected equipment, the process for ensuring that securement is sufficient, how the verification will be determined, and any other relevant factors affecting securement of unattended equipment.

FRA reviews railroad operating rules and practices to ensure that they require job briefings of securement for any activity that will impact or require the securement of any unattended equipment in the course of work being formed. Having such a requirement in their operating rules and practices highlights the importance railroads place on it and facilitates incorporation by railroad employees' into their daily routine. From a safety perspective, it is imperative that railroads workers (train crew members and others) conduct the required job briefings so that there is no confusion concerning the

securement of unattended locomotives and trains. Lac-Megantic and other recent accidents/incidents have vividly illustrated the dangers when an unattended train is not secured properly.

Under paragraph (n)(10), FRA requires railroads to develop procedures to ensure that a qualified railroad employee inspects all equipment that any emergency responder has been on, under, or between for proper securement before the rail equipment or train is left unattended. It may be necessary for emergency responders to modify the state of the equipment for the performance of their jobs by going on, under, or between equipment. Railroads have already developed these procedures, which require inspections so that a qualified employee subsequently inspects the equipment to make sure that the equipment continues to be properly secured before it is again left unattended. Emergency responders unfamiliar with trains and other equipment could inadvertently unsecure the train, and this provision adds an extra layer of safety to prevent such an occurrence and reduces the risk of a potential tragedy ensuing.

Under paragraph (n)(11), FRA permits railroads to adopt and then must comply with alternative securement procedures to do the following: (i) In lieu of applying hand brakes as required under paragraph (n), properly maintain and use mechanical securement devices, within their design criteria and as intended within a classification yard or on a repair track. (ii) In lieu of compliance with the associated requirement in paragraph (n)(2) of this section—and in lieu of applying hand brakes as required under paragraph (n)—isolate the brake pipe of standing equipment from atmosphere if it: (A) Initiates an emergency brake application on the equipment;(B) Closes the angle cock; and (C) Operates the locomotive directly to the opposite end of the equipment for the sole purpose to either open the angle cock to vent to atmosphere or provide an air source.

This information collected is used by railroads to provide them flexibility to use in a prescribed location an alternative means of securement in lieu of hand-brakes per the remainder of paragraph (n). Like in TB 10-01, FRA continues to believe in this rule that unattended equipment in classification yards—a series of tracks where locomotives and cars are classified or switched to dismantle and make-up train sets—present situations where alternate forms of securement can be allowed. Classification yards may have hump, bowl, flat or severe grades, or other characteristics. These characteristics and other local conditions, such as prevailing winds and possible severe weather, should be considered by the railroad in developing its instructions for using alternate forms of securement. The burden of proof is on the railroad in the use of alternate securement. If alternate securement is not effective, securement defaults to the application of a sufficient number of hand brakes. FRA inspectors review alternative securement procedures to make sure that they are sufficient to secure unattended equipment.

Finally, section 232.105(h)(1) states that, after March 1, 2017, each locomotive left unattended outside of a yard be equipped with an operative exterior locking mechanism. Paragraphs (h)(2) and (h)(3) are meant to ensure that locking mechanisms, if broken or

otherwise inoperative, are repaired in a reasonable timeframe. FRA expects that each locomotive equipped with a locking mechanism will be inspected and maintained at the time of the locomotive's periodic inspection. If a locking mechanism is found inoperative at any time other than the periodic inspection, paragraph (h)(3) would require the railroad to repair it within 30 days. However, if the periodic inspection falls within the 30-day limit for repair, FRA would expect that the lock will be repaired at the time of the periodic inspection in accordance with the requirement in paragraph (h)(2). FRA will use the information collected under this section, particularly the inspection data recorded on Form FRA F 6180.49A, to ensure that the necessary inspections are being carried out and timely repairs are made when broken or damaged exterior locks are discovered. Denying access to locomotives and other railroad equipment to non-railroad personnel is another step in keeping the rail environment safe for all.

In a previous change to Part 232, FRA added five (5) new sections in its final rule relating to ECP brakes that contain additional information collection requirements. FRA reviews the information collected under § 232.603 concerning railroad petitions/applications for alternate standards for freight cars or freight trains equipped with an ECP brake system to ensure that these freight cars/freight trains meet, at a minimum, the industry standards contained in the *AAR Manual of Standards and Recommended Practices* for such new technology, thereby helping to ensure that these freight cars/freight trains are operated safely, and efficiently, as well as to ensure that such trains can be operated interoperably with freight cars/freight trains equipped with conventional pneumatic brakes.

Also, under § 232.603, FRA reviews railroads' ECP brake configuration management plans to ensure that they meet the AAR standard incorporated by reference in this section. FRA believes that sound configuration management plans of ECP brake system hardware and software components are essential to the interchangeability, interoperability, compatibility, and continued proper and safe operation of ECP brake systems. Compatibility of ECP hardware and software has a direct affect on the safety and reliability of ECP brake systems running on the Nation's railroads. Further, under § 232.603, FRA reviews written requests for modification of ECP brake system standards to ensure that such requests meet the procedural requirements stipulated in § 232.307 and to ensure that it is safe and in the public interest to grant such requests. Such written requests facilitate the introduction of new technologies by eliminating the need to go through the pre-revenue testing procedures contained in Subpart F of Part 232.

Under § 232.605, FRA reviews railroad training, qualification, and designation programs submitted to the agency to ensure that railroads/contractors adopt and fully update their training, qualification, and designation programs to include ECP brake system operations. FRA reviews these programs to ensure that railroad and contract personnel responsible for performing brake system inspections, tests, and maintenance on ECP brake systems are trained, tested, and designated in accordance with the requirements contained in

§ 232.203 on the ECP brake systems that they will inspect, test, and maintain. Similarly, FRA reviews amended locomotive engineer certification programs to ensure that locomotive engineers possess the specific knowledge, skills, and ability to safely operate locomotives and other equipment with ECP brake systems and to ensure that they are fully trained in the operating rules governing safe handling procedures of such equipment. Thus, FRA uses the information required by § 232.203 related to ECP brake systems to ensure that railroads fully comply with the training and qualification plans they adopt as they apply to ECP brake operations.

Particularly useful in ensuring compliance is the requirement that railroads must maintain adequate records to demonstrate the current qualification status of its personnel assigned to inspect, test, or maintain trains with ECP brake systems. FRA carefully reviews such documentation, which allows the agency to judge the effectiveness of the training provided; such information furnishes FRA with the ability to independently assess whether the training provided to a specific individual adequately addresses the skills and knowledge required to perform the tasks that person is deemed qualified to perform. These records may be maintained either electronically or in writing, and must be provided to FRA upon request.

Under § 232.607, the required information is used by both by locomotive engineers/train crews and by FRA. Locomotive engineers and train crews use this information to operate ECP trains safely, since they will be provided with practical knowledge that a freight car with ECP brakes is in proper working condition and is capable of traveling to its destination with minimal problems en route. In particular, the Class I brake test information enables locomotive engineers/train crews to know when the train they are operating is due attention for testing and inspection purposes, thereby enhancing the continued safe operation of the train. FRA inspectors use this information to ensure railroads and train crews comply with Federal safety regulations. In the event of an accident/incident, FRA investigators have ready access to vital information about the date, time, number of freight cars inspected, the identity of the qualified person(s) performing the test, and the location where the Class I brake test was performed. Such information can prove extremely valuable in helping to determine the cause(s) of the accident/incident and in preventing future occurrences of such accidents/incidents.

Under § 232.609, the required tagging information is used by train crews and other railroad personnel to ensure the safe operation and proper movement of ECP trains and to reduce the likelihood of accident/incidents that might otherwise occur if this equipment were not suitably tagged. This information is also used by FRA safety inspectors to ensure compliance with Federal regulations. Further, the information regarding written procedures governing the movement of defective freight cars equipped with ECP brake systems is used by railroad personnel as a uniform or standard operating procedure to ensure their protection while they are moving such equipment and thus serves to minimize the possibility of future accidents/incidents caused by the movement of



defective equipment on cars and trains equipped with ECP brake systems or trains operating in ECP brake mode. FRA reviews these procedures to ensure that they meet Federal safety standards and that they provide the necessary protection to train crews and other railroad personnel when defective equipment is moved.

Under § 232.611, FRA inspectors review the periodic maintenance inspection records of freight cars with ECP brake systems to ensure that railroads are consistently conducting the necessary periodic maintenance for such equipment and that affected railroads are fully complying with Federal safety regulations in order that these trains are operated safely throughout the country. FRA inspectors review railroads' periodic single car brake test procedures to ensure that these test procedures are comprehensive, complete, and safe to follow and to ensure that railroads actually follow them once the agency has approved them. FRA inspectors review single car air brake test records on freight cars retrofitted with a newly installed ECP brake system to make sure that these tests are routinely conducted by railroads prior to these cars being placed into revenue service and to ensure that such freight cars comply with Federal regulations and are safe to operate.

FRA uses waiver information to determine whether it is consistent with railroad safety and in the public interest to grant exemptions to railroads concerning the requirements spelled out in this regulation.

Defective equipment is tagged with information prescribed in § 232.15. Railroads may use either a tag/card or an automated tracking system approved by FRA to identify defective locomotives/cars. The information is used both by FRA/State inspectors and by railroad workers. FRA/State inspectors use the information for compliance purposes, particularly during audits in order to verify that railroads are following the requirements set out in the rule. FRA/State inspectors use the information to ensure that defective cars/locomotives are moved properly; that they are moved to the correct destinations; and that necessary repairs are performed. Railroad workers use the information to identify the nature of the defect; to ensure that defective cars/locomotives are handled properly so that they are not unnecessarily injured during these movements; and to ensure that these defective cars/locomotives are moved to the proper/correct destinations and not beyond, thus avoiding unnecessary additional costs to their employers and higher safety risks to the public and to themselves that such mistakes would bring. Also, railroad workers use defective tags/cards to notify the person in charge of the train in which the car or locomotive is to be moved and all other crew members of the presence of the defective car/locomotive and to inform them of the maximum speed and other restrictions that apply to the movement of these cars.

FRA reviews petitions for special approval of an alternative standard to determine whether the proposed alternative can be substituted for a particular requirement(s) of this Part. Specifically, FRA reviews these petitions for special approval to ensure that

appropriate data or analysis, or both, are provided for the agency to consider in determining whether the alternative standard proposed by the railroad will provide at least an equivalent level of safety to FRA's regulation. FRA also reviews these petitions for special approval of an alternative standard and accompanying documents to ensure that the railroad includes a statement affirming that a copy of the petition has been served on designated representatives of the railroad's employees. FRA also reviews these accompanying documents to confirm that a list of the names and addresses of the persons served by the railroad is included. FRA seeks to ensure that railroad employee representatives and railroad employees are kept fully informed concerning decisions affecting their health and safety.

With one exception, all railroad cars are required to have a legible stencil, sticker, or badge plate affixed to the car displaying the permissible brake cylinder piston travel range for the car at Class I brake tests and the length at which the piston travel renders the brake ineffective, if different from Class I brake test limits. Train crews and mechanics performing brake system inspections use this information to determine when a freight car's air brakes are not in effective operating condition based on piston travel. This information is essential in order for qualified railroad personnel to properly perform the brake inspections required by this regulation because of the growing number of cars with other than standard brake designs.

FRA reviews railroad plans to monitor all yard air sources (other than locomotives) to ensure that railroads have set up a method by which they can verify that yard air sources operate as intended and do not introduce contaminants into the brake system of freight equipment. The required monitoring plan mandates that railroads inspect each yard air source at least two times per calendar year – no less than five months apart – to ensure it operates as intended and does not introduce contaminants into the brake system of the equipment it services and thereby jeopardize the effectiveness of the brake system to stop the car. Each monitoring plan must also identify yard air sources found not to be operating as intended or found introducing contaminants into the brake system of the equipment it services. Additionally, each monitoring plan must provide for repair or other remedial action concerning any yard air source identified as not operating as intended or found introducing contaminants into freight car brake systems. Finally, each monitoring plan must provide for the maintenance of records relating to yard air sources found not to be operating as intended or found introducing contaminants into the brake system. FRA reviews these records during routine inspections and audits to verify railroads are complying with this regulation, particularly that they are implementing their monitoring program and take the necessary steps to maintain and promote rail safety. These records must be maintained for at least one year from the date of creation.

Locomotive engineers are required to be informed of the operational status of the dynamic brakes on all locomotive units in the train consist at the initial terminal or point of origin for a train and at other locations where a locomotive engineer first begins

operation of the train. This information must be maintained in written or electronic form in the cab of the locomotive, and is reviewed by the locomotive engineer so that he/she knows the operational status of the dynamic brakes on all locomotives in the consist at the initial terminal or point of origin where he/she first takes charge of the train. Locomotive engineers use this information to operate the train in the safest and most efficient manner possible. Moreover, all dynamic brakes found to be inoperative must be tagged, and must be repaired within 30 calendar days of becoming inoperative or at the locomotive's next periodic inspection, whichever comes first. Train crews use this information to ensure that a locomotive with inoperative, or deactivated dynamic brakes is not placed in the controlling/lead position of a consist, unless the locomotive has the capability of controlling the dynamic braking effort in the trailing locomotives in the consist that are so equipped and unless the locomotive has the capability of displaying to the locomotive engineer the deceleration rate of the train or the total dynamic brake retarding force.

FRA reviews required railroad written operating rules relating to operating trains with dynamic brake systems to ensure that railroads have developed appropriate written operating rules governing safe train handling procedures using dynamic brakes under all operating conditions. These operating rules must be tailored to the specific equipment and territory of the railroad. The required operating rules are used by railroads/their employees and enable them to analyze the safety impacts of the various ways to handle potentially dangerous situations. The railroad's operating rules must ensure that friction brakes are sufficient by themselves, without the aid of dynamic brakes, to stop the train under all operating conditions, and must include a miles-per-hour-overspeed-top rule. At a minimum, each miles-per-hour-overspeed-top rule must require that any train, when descending a grade of one percent or greater, shall be immediately brought to a stop, by an emergency brake application if necessary, when the train's speed exceeds the maximum authorized for that train by more than five miles per hour. FRA reviews railroads' operating rules to confirm that enough necessary forethought is exerted to develop necessary procedures so as to potentially pre-empt many mistakes that cause dangerous situations to occur.

Train brake system maintenance standards are used by railroads both as a training tool to qualify new train brake system inspectors and as a check list for supervisors performing spot checks of train brake system maintenance work.

Training records are used by railroads to demonstrate that individuals responsible for train brake system inspection, maintenance, and tests meet the minimum qualification requirements enumerated in the rule. FRA reviews training records to make sure that railroads have developed or incorporated a training curriculum that includes classroom and "hands-on" lessons necessary to impart the skills and knowledge necessary for their employees to perform tasks for which they will be/are responsible. FRA also reviews these records to ensure that railroads provide periodic refresher training at an interval not

to exceed three years that includes both classroom and “hands-on” training, as well as efficiency testing. FRA examines these records with a special focus on the qualifications of train crew members to assure brake inspections and tests are properly performed in order to protect both the public and railroad employees from the operation of equipment that does not meet Federal standards. FRA strictly scrutinizes the method and length of time spent by these individuals in the performance of required inspections. FRA believes the training and qualification requirements provide FRA with the ability to independently assess whether the training provided to a specific individual adequately addresses the tasks for which the individual is deemed capable of performing, and serves to prevent potential abuses by railroads to use insufficiently trained individuals to perform the necessary inspections, tests, and maintenance required by this rule. Additionally, railroads use these records to inform and keep up-to-date employees and/or contractors on their current qualification status. Since most railroads already voluntarily keep employee training records, this requirement supplements an existing practice.

FRA requires Class I brake tests (initial terminal inspection), Class IA brake tests (1,000 mile inspection), and Class II brake tests (intermediate inspections) be performed and the qualified person performing the “roll-by” inspection communicate the results of the inspection to the operator of the train. Locomotive engineers and train crews use the “roll-by” inspection information to determine when the train they are operating is due attention for testing and inspection purposes, thus enhancing the continued safe operation of the train. To have a train operate without these tests being performed could create an unsafe condition and risk the safety of the general public and railroad employees.

Railroad employees use the required single car test due date stenciling (a form of recordkeeping) to ascertain when a car's next scheduled single car test is due. Railroad employees use required the end-of-train device stenciling (again a form of recordkeeping) to ascertain when a two-way end-of-train device is due for calibration. For extended haul trains, FRA requires the performance of an inbound inspection at destination or at 1,500 miles, and requires carriers to maintain records of all defective conditions discovered on these trains for a period of one year. Railroads must maintain a record of all defective, inoperative, or ineffective brakes, as well as any conditions not in compliance with Parts 215 and 231 of this Chapter discovered at any time during the movement of the train. FRA uses these records to enhance the agency’s ability to independently monitor railroads’ operation of these types of trains. FRA also uses these records to assess the quality of a railroad’s inspection practices and to help FRA identify any systematic brake or mechanical problems that may result from these types of

Finally, FRA requires special approval for new brake system technology by the Associate Administrator for Safety and reviews railroads’ plans before implementation to ensure that all safety risks have been reduced to a level that permits the new brake system technology to be used in revenue service.

### **3. Extent of automated information collection.**

FRA strongly endorses and highly encourages the use of advanced information technology, wherever possible, to reduce burden on respondents. Under the new requirement in § 232.103(n)(7)(i), railroad notification to FRA that they have developed a plan specifying specific locations or circumstances when railroad equipment may be left unattended may be transmitted electronically or in writing. Such plans must be furnished to FRA upon request, and here too railroads may transmit them electronically via e-mail or fax or in writing.

Under § 232.103(n)(10), railroads are required to adopt and comply with procedures to ensure that, as soon as safely practicable, a qualified employee verifies the proper securement of any unattended equipment when the railroad has knowledge that a non-railroad emergency responder has been on, under, or between the equipment. Informational records regarding inspection of equipment by a qualified employee may be kept electronically.

Under § 232.105(h)(2), railroads are required to inspect and, where necessary, repair the locking mechanism during a locomotive's periodic inspection required in § 229.23 of this chapter. Records of inspection and repairs made may be kept electronically by railroads.

In the final revisions to the power brake regulations regarding ECP brakes that add §§ 232.605, 232.607, 232.609, and 232.611, FRA has again provided an electronic option to reduce burden on railroads. Under § 232.605, the required railroad and contractor records relating to the training of employees who perform inspection, testing, and maintenance of ECP brake systems may be kept either in writing or electronically.

Under § 232.607, a freight train operating in ECP brake mode must receive a Class I brake test as described in § 232.205(e) by a qualified mechanical inspector. The railroad is required to notify the locomotive engineer that the Class I brake test has been satisfactorily performed, and a written or electronic record of the required information must be retained in the cab of the controlling locomotive until the train reaches its destination. Also, under this section, each car and each solid block of cars not equipped with an ECP brake system that is added to a train operating in ECP mode must receive a visual inspection to ensure that it is properly placed in the train and safe to operate in accordance with the provisions contained in § 232.15. These provisions stipulate that defective equipment must be tagged on both sides of the equipment or locomotive and in the cab of the controlling locomotive or, in lieu of a tag or card, the required information placed in an automated tracking system approved for use by FRA. An electronic or written record or copy of each tag or card attached to or removed from a car or locomotive must be retained for 90 days.

Under § 232.609, a freight car equipped with an ECP brake system that is known to have

arrived with ineffective or inoperative brakes at initial terminal of the next train which the car is to be included or at a location where a Class I brake test is required to be performed under § 232.607(b)(1) through (b)(3) must not depart that location with ineffective or inoperative brakes in a train operating in ECP mode unless the car is properly tagged in accordance with § 232.15(b). Also, a freight car equipped with only conventional pneumatic brakes must not move in a freight train operating in ECP brake mode unless it would otherwise have effective and operative brakes if it were part of a conventional pneumatic brake equipped train or could be moved from the location in defective condition under the provisions contained in § 232.15 and is tagged in accordance with § 232.15. Also, a train operating with conventional pneumatic brakes must not operate with freight cars equipped with stand alone ECP brakes systems unless tagged in accordance with § 232.15(b). Again, in these situations, in lieu of a tag or card, an automated tracking system approved by FRA must be provided, and an electronic or written record or copy of each tag or card attached to or removed from a car or locomotive must be retained for 90 days.

Finally, under § 232.611, a single car brake test must be conducted in accordance with the procedure submitted and approved by FRA on each car retrofitted with a newly installed ECP brake system. These test results must be entered into AAR's electronic recordkeeping system called UMLER (Uniform Machine Language Register).

As noted in the submission before the last approved one, FRA increased the number of information collection requirements where railroads may avail themselves of the latest information technology, in particular electronic recordkeeping and automated tracking systems. For example, regarding the movement of conventional defective equipment/locomotives, railroads have the option of using a tag/card, or an approved automated tracking system upon the discovery of the defect. Also, the records required to identify yard air sources found not to be operating as intended or found introducing contaminants into the brake system of the equipment it services may be kept electronically. Further, the records that must be kept regarding the operational status of the dynamic brakes on all locomotive units in the consist at the initial terminal or point of origin for a train and at other locations where a locomotive engineer first begins operation of a train may be kept in written or electronic form.

Additionally, the required record that must be maintained in the cab of the controlling locomotive to ensure that a train crew employed by a railroad is given accurate information on the condition of the train brake system and train factors affecting brake performance when the crew takes over responsibility for the train may be kept electronically. Moreover, the records regarding training under § 232.203(e) may be kept electronically. Under these two requirements, a railroad or contractor must maintain adequate records to demonstrate the current qualification status of all its personnel assigned to inspect, test, or maintain a train brake system. Likewise, concerning extended haul trains, the record required of railroads regarding all defective, inoperative,

or ineffective brakes, as well as any conditions discovered at any time during the movement of the train that are not in compliance with Parts 215 and 231 of this Chapter, may be kept electronically.

The required records ensuring that Class I brake tests or single car tests were satisfactorily performed may be kept in a written or electronic format. In this rule, FRA has imposed extensive tagging requirements on freight cars which, due to the nature of the defective condition(s) detected, require a repair track brake test or single car test but which are moved from the location where repairs are performed prior to receiving the required test. As an alternative to the tagging requirements, FRA is allowing a railroad to use an automated tracking system to monitor these cars and ensure that they receive the requisite tests, provided the automated system is approved by FRA. Finally, under the inspection and testing of end-of-train devices section, the required record of notification to the locomotive engineer that a person other than a train crew member has successfully conducted a test of a two-way-end-of-train device may be kept electronically. Currently, 68 percent of all responses are kept electronically.

FRA believes that it is up to each railroad to decide for itself the most appropriate method of recordkeeping, given its financial resources and staffing situations. In keeping with both the goals of the 1995 Paperwork Reduction Act (PRA) and the 1998 Government Paperwork Elimination Act (GPEA), FRA has sought to reduce burden, wherever possible, by permitting the use of an electronic or automated option in order to allow railroads to determine for themselves the most cost-effective and convenient method to fulfill the rule's paperwork requirements.

Due to the nature of this rule's current and new requirements, approximately 21 percent of responses may be kept electronically. It is important to mention that 73 percent of responses involve verbal job briefings under new § 232.103(n)(9).

**4. Efforts to identify duplication.**

To our knowledge, this information is not duplicated anywhere. Similar data is not available from any other source.

**5. Efforts to minimize the burden on small businesses.**

Background

The "universe" of the entities under consideration includes only those small entities that can reasonably be expected to be directly affected by the provisions of this rule. In this case, the "universe" will be Class III freight railroads that own locomotives or that have traffic including trains that would be subject to proposed § 232.103(n)(6).

The U.S. Small Business Administration (SBA) stipulates in its “Size Standards” that the largest a railroad business firm that is “for-profit” may be, and still be classified as a “small entity,” is 1,500 employees for “Line Haul Operating Railroads” and 500 employees for “Switching and Terminal Establishments.” “Small entity” is defined in the Act as a small business that is independently owned and operated, and is not dominant in its field of operation. Additionally, section 601(5) defines “small entities” as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations less than 50,000.

Federal agencies may adopt their own size standards for small entities in consultation with SBA and in conjunction with public comment. Pursuant to that authority, FRA has published a final policy that formally establishes “small entities” as railroads which meet the line haulage revenue requirements of a Class III railroad.<sup>16</sup> The revenue requirements are currently \$20 million or less in annual operating revenue. The \$20 million limit (which is adjusted by applying the railroad revenue deflator adjustment)<sup>17</sup> is based on the Surface Transportation Board’s (STB) threshold for a Class III railroad carrier. FRA is using the STB’s threshold in its definition of “small entities” for this rule.

FRA believes that virtually all small railroads on the general system of rail transportation will be affected by this rule, as there are almost no railroads that do not own at least one locomotive. There are 671 small railroads on the general system of rail transportation. No small entities are expected to incur any costs under proposed § 232.103. Small entities owning locomotives may incur a cost to install a locking mechanism under § 232.105, but the locking mechanisms will pay for themselves in reduced vandalism costs in less than three years. FRA believes that at least 90 percent of affected locomotives are already equipped with locking mechanisms, and the cost to install a locking mechanism is \$100 for a mechanism that does not have to comply with AAR standards for interchange. Any small railroad’s locomotives operated in interchange service would have to have AAR compliant locks to remain in interchange service, but that is not a cost of the rule. Thus, the rule will impose a cost of \$100 on about ten percent of locomotives, but the investment will pay for itself in less than three years. FRA believes this is not a substantial impact on any small entity. Further, small railroads will benefit from a reduction in recordkeeping requirements.

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 605(b), the FRA Administrator certifies that this final rule will not have a significant economic impact on a substantial number of small entities. In the NPRM, FRA requested comment on both this analysis and the certification, and its estimates of the impacts on small railroads. The only comment FRA received was that the unit cost of locks for small railroads would be more than \$100, exceeding even the AAR estimated unit cost of \$210 per locomotive. For

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<sup>16</sup> See 68 FR 24891 (May 9, 2003); 49 CFR Part 209, app. C.

<sup>17</sup> For further information on the calculation of the specific dollar limit, please see 49 CFR Part 1201.



reasons discussed in the Regulatory Impact section above, FRA rejects that comment.

**6. Impact of less frequent collection of information.**

If this information were not collected or collected less frequently, the safety of rail freight operations in the United States would be greatly jeopardized. Specifically, without the information obtained under the new requirements of the rule, it is likely that there would be more rail accidents/incidents involving unsecured locomotives and trains. The new requirements under § 232.103(n) enhance safety by ensuring that affected railroads develop plans that identify specific locations or circumstances where rail equipment may be left unattended. Railroads will then communicate these plans to railroad employees who will have a clear understanding of where and under what circumstances a locomotive or other rail equipment may be left unattended and be secure.

Also, under § 232.103(n), the rule requires employee verification with another qualified employee of securement of a freight train or freight car left unattended. This is essentially encompassed in the job briefing. This requirement will enhance safety by ensuring that any employee who is responsible for securing equipment containing hazardous materials follows appropriate securement procedures. Such employees will need to fully consider these procedures in order to relay what was done to the qualified employee. This may be done by relaying pertinent securement information (i.e., the number of hand brakes applied, the tonnage and length of the train or vehicle, the grade and terrain features of the track, any relevant weather conditions, and the type of equipment being secured) to the qualified railroad employee. The qualified railroad employee must then verify and confirm with the train crew that the securement meets the railroad's requirements. The redundancy of the verification and confirmation will serve to minimize the risk of mistakes and reduce the chances of a locomotive or train becoming unsecured.

Under § 232.103(n)(10), FRA is requiring railroads to develop procedures to ensure that a qualified railroad employee inspects all equipment that any emergency responder has been on, under, or between for proper securement before the rail equipment or train is left unattended. As it may be necessary for emergency responders to modify the state of the equipment for the performance of their jobs by going on, under, or between equipment, it is critical for the railroad to have a qualified employee subsequently inspect the equipment to ensure that the equipment continues to be properly secured before it is again left unattended. Without these required inspections, locomotives and other rail equipment could be inadvertently rendered unsecured with potentially tragic consequences.

Without the requirements under § 232.105(h), there would be no way to ensure that

locking mechanisms for locomotive cabs are repaired in a reasonable time frame if broken or damaged. Unrepaired locking mechanisms that are broken or damaged increase risk of an untoward event occurring. A broken or damaged locking mechanism could attract vandals who could create havoc if they managed to get in the locomotive and set it in motion. FRA expects that each locomotive equipped with a locking mechanism will be inspected and maintained at the time of the locomotive's periodic inspection. If a locking mechanism is found inoperative at any time other than the periodic inspection, paragraph (h)(3) would require the railroad to repair it within 30 days. However, if the periodic inspection falls within the 30-day limit for repair, FRA would expect that the lock will be repaired at the time of the periodic inspection in accordance with the requirement in paragraph (h)(2). Safety is enhanced by the requirements of this section which serve to keep unwanted and untrained individuals out of locomotives and other rail equipment where they do not belong.

Without the additional information collected regarding ECP brakes, railroads and contractors might not adopt and comply with a training, qualification, and designation program for their employees who perform inspection, testing, or maintenance of freight cars or freight trains with ECP brake systems. Without railroads adopting such a training program and fully implementing it so that their employees receive comprehensive training on ECP brakes, railroad employees would not have the skills, knowledge, and hands-on experience necessary to enable them to operate this type of equipment safely. If such equipment were not properly inspected, tested, and maintained, there might be an increased number of accident/incidents, with corresponding injuries and fatalities, because unsafe locomotives and freight cars were placed in service. Also, without the required training program, locomotive engineers and conductors would not have the knowledge, skills, and hands-on familiarity to safely handle locomotives and freight trains equipped with ECP brakes or locomotives/freight trains operating in ECP brake mode. Improper or faulty train handling could lead to increased accidents/incidents and greater casualties on the nation's rails. Additionally, without the additional information collected, FRA would have no means to ensure that railroads and contractors periodically assess the effectiveness of their ECP brakes training program. Without a periodic effectiveness assessment of their training programs, railroads and contractors might be inadequately or improperly training their employees on ECP brakes. This could directly lead to more accidents/incidents and corresponding casualties involving locomotives and freight cars equipped with ECP brakes or such equipment operating in ECP mode.

Without this collection of information, FRA would have no means of determining whether railroads amended their operating rules to cover freight cars or freight trains equipped with an ECP brake system. Without such revised operating rules, train crews – and other railroad employees – would not have the readily available information they need to safely handle this type of equipment under all operating conditions. Failure by train crews/rail employees to understand or properly follow ECP operating rules could result in a derailment, collision, or other serious type of accident/incident leading to grave

injuries and perhaps fatalities to themselves and to members of the public at large.

Without this collection of information, there would be no way for FRA to ensure that freight trains operating in ECP mode receive the required Class I brake test or that a car equipped with an ECP brake system that is added to a train operating in ECP mode receive the required Class I brake test. Without this necessary brake test, ECP equipped freight cars and trains could be unsafe to operate and could become involved in a derailment, collision, or other type of accident/incident. Also, without this collection of information, there would be no way for FRA to know that each car or solid block of cars not equipped with an ECP brake system that is added to a train receives the necessary visual inspection to ensure that it is properly placed in the train and, if found defective, is properly tagged on both sides or, in lieu of a tag or card, placed in an automated tracking system in accordance with the provision contained in § 232.15. Again, such an omission could lead to an accident/incident because the condition of this equipment was not known and not passed on to the locomotive engineer/train crew or because the freight car or block of cars was not properly tagged to alert other rail employees.

Finally, without the required inspection records in this collection of information, FRA would have no way to verify that the periodic maintenance requirements contained in § 232.303(b)-(d) relating to the inspection of freight cars equipped with an ECP brake system were fulfilled according to Federal safety requirements. In the event of an accident/incident, these records would be essential to any investigation seeking to determine exactly what transpired.

Without this collection of information, locomotive engineers would not be informed of the operational status of the dynamic brakes on all conventional locomotive units in the consist at the initial terminal or point of origin for a train, or at other locations where they first take charge of a train. Consequently, they could take charge of a train with a defective locomotive(s) and cars, and would not be aware of this and other necessary restrictions that they ought to follow. This could lead to dangerous train handling situations and to an increase in the number of rail accidents/incidents and associated injuries/fatalities to crew members, as well as increased property damage. Also, if this information were not collected, yard air sources would not be monitored to ensure that they operate as intended. As a result, contaminants could be introduced into the brake system of freight equipment which could affect the functioning of the brakes and thus negatively impact railroad safety.

Without this collection of information, FRA could not ensure that train crews have written procedures that provide critical data regarding an array of factors which affect train performance. These procedures provide each train crew coming on duty with such information as the weight and length of the train (based on the best information available to the railroad); any special weight distribution that would require special train handling practices; the number of and location of cars with cut-out or otherwise ineffective brakes

and the location where they will be repaired; if a Class I or Class IA brake test is required prior to the next crew change point, the location at which that test will be performed; and any train system brake problems encountered by the previous crew of the train. These written procedures then are essential in providing data which help train crews avoid potentially dangerous train handling situations. They also enable railroads to comply with various Federal safety standards.

If this information were not collected or collected less frequently, FRA could not ensure that necessary brake inspections, tests, and repairs are completed. Consequently, the discovery and correction of minor defects would not occur in time to prevent them from becoming major defects and the source of severe rail accident/incidents. Also, without this information collection, FRA could not ensure that railroads adopt and implement a training, qualification, and designation program for employees and contractors who perform conventional brake system inspections, tests, and maintenance. Having unqualified employees work on conventional freight brake systems would endanger the safety of train crews, the general public, and the intact delivery of train cargo.

In sum, this collection of information advances the mission of FRA, which is to ensure, and promote safety throughout the U.S. rail system.

7. **Special circumstances.**

All information collection requirements contained in this rule are in compliance with this section.

8. **Compliance with 5 CFR 1320.8.**

In accordance with the Paperwork Reduction Act of 1995 and 5 CFR 1320 (§1320.13), FRA published a Notice in the **Federal Register** on August 1, 2018, soliciting public comment on these information collection requirements. See 83 FR 37606. FRA received no comments in response to this Notice.

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.**

Information collected is not of a confidential nature, and FRA pledges no confidentiality.

11. **Justification for any questions of a sensitive nature.**

These requirements have nothing to do with sensitive matters.

**12. Estimate of burden hours for information collected.**

*Note: Based on the latest agency data, there are approximately 741 railroads currently in existence throughout the nation and they comprise the respondent universe for this collection of information overall. Additionally, FRA estimates that there are approximately 100,000 railroad operating employees (90,000 train and engine employees plus 10,000 dispatchers) who will be affected by the rule. Finally, FRA estimates that there are currently approximately 30,000 locomotives covered by the rule.*

*Per OMB's request, FRA is including the annual dollar cost equivalent of the requested burden hours below. FRA derives this estimate from the 2017 AAR publication Railroad Facts (p. 57), and uses the average annual wages for each employee group as follows: For Executives, Officials, and Staff Assistants, this cost amounts to \$110 per hour. For Professional/Administrative staff, this cost amounts to \$73 per hour. For Maintenance of Way and Structure employees, this cost amounts to \$66 per hour. For Maintenance of Equipment and Stores employees, this cost amounts to \$59 per hour. For Transportation other than Train and Engine employees, this cost amounts to \$72 per hour. For Transportation Train and Engine employees, this cost amounts to \$74 per hour. All cost estimates include 75% overhead.*

**§ 229.27      Annual Tests**

Load meters that indicate current (amperage) being applied to traction motors shall be tested. Each device used by the engineer to aid in the control or braking of the train or locomotive that provides an indication of air pressure electronically shall be tested by comparison with a test gauge or self-test designed for this purpose. An error greater than five percent or greater than three pounds per square inch shall be corrected. The date and place of the test shall be recorded on Form FRA F 6180-49A, and the person conducting the test and that person's supervisor shall sign the form.

FRA estimates that approximately 30,000 load meters will be tested quarterly or approximately 120,000 load meters will be tested annually under this requirement. It is estimated that it will take approximately 15 minutes to perform the test, record the date and place of the test on form FRA F 6180.49A, and have the person conducting the test and his/her supervisor sign the form. Total annual burden for this requirement is 30,000 hours.

Respondent Universe:	30,000 locomotives
Burden time per response:	15 minutes
Frequency of Response:	Quarterly

Annual number of Responses:	120,000 tests/forms	
Annual Burden Hours:	30,000 hours	
Annual Cost:		\$2,160,000
	(\$72 x 30,000 hrs.)	

**Calculation:** 120,000 tests/forms x 15 min. = 30,000 hours

**§ 231.31      Drawbars for freight cars; standard height.**

On railroads operating on track with a gage other than those contained in paragraphs (a) (1)-(a)(3), the maximum and minimum height of drawbars for freight cars operating on those railroads shall be established upon written approval of FRA.

*FRA estimates that it will receive approximately zero (0) letters annually under this requirement. Consequently, there is no burden associated with this requirement.*

**§ 232.1      Scope**

A railroad may request earlier application of the requirements contained in subpart A through C and subpart F of this part upon written notification to FRA’s Associate Administrator for Safety. Such request shall indicate the railroad’s readiness and ability to comply with all of the requirements contained in those subparts.

*Since this provision no longer applies, there is no burden associated with this requirement.*

**§ 232.3      Applicability**

Export, industrial, and other cars not owned by a railroad which are not to be used in service, except for movement as shipments on their own wheels to given destinations. Such cars shall be properly identified by a card attached to each side of the car, signed by the shipper, stating that such movement is being made under the authority of this paragraph.

FRA estimates that approximately four (4) cars/locomotives will need to be properly identified. A total of eight (8) cards then will be completed under this requirement. It is estimated that it will take approximately 10 minutes for each card to be completed and signed by the shipper. Total annual burden for this requirement is one (1) hour.

Respondent Universe:	741 railroads
Burden time per response:	10 minutes

Frequency of Response:	On occasion	
Annual number of Responses:	8 cards	
Annual Burden Hours:		1 hour

Annual Cost:		\$72 (\$72 x 1 hr.)
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**Calculation:** 8 cards x 10 min. = 1 hour

**§ 232.7      Waivers.**

- (a) Any person subject to a requirement of this part may petition the Administrator for a waiver of compliance with such requirement. The filing of such a petition does not affect that person’s responsibility for compliance with that requirement while the petition is being considered.
- (b) Each petition for waiver must be filed in the manner and contain the information required by Part 211 of this Chapter.

Due to air brake life extension petitions, FRA estimates that it will receive approximately 10 waivers annually under this requirement. It is estimated that it will take approximately 160 hours for the respondent to prepare the necessary data required for each petition and forward it to FRA. Total annual burden for this requirement is 1,600 hours.

Respondent Universe:	741 railroads	
Burden time per response:	160 hours	
Frequency of Response:	On occasion	
Annual number of Responses:	10 petitions	
Annual Burden Hours:	1,600 hours	
Annual Cost:		\$116,800 (\$73 x 1,600 hrs.)

**Calculation:** 10 petitions x 160 hrs. = 1,600 hours

**§ 232.15      Movement of Defective Equipment.**

- A. At the place where the railroad first discovers the defect, a tag or card shall be placed on both sides of the defective equipment or locomotive and in the cab of the locomotive, or an automated tracking system approved for use by FRA shall be provided with the following information about the defective equipment:
- (i) The reporting mark and car or locomotive number;
  - (ii) The name of the inspecting railroad;
  - (iii) The name and job title of the inspector;
  - (iv) The inspection location and date;
  - (v) The nature of each defect;
  - (vi) A description of any movement restrictions;
  - (vii) The destination of the equipment where it will be repaired; and
  - (viii) The signature, or electronic identification, of the person reporting the defective condition.

The tag or card required by paragraph (b)(1) of this section must remain affixed to the defective equipment until the necessary repairs have been performed.

An electronic or written record or copy of each tag or card attached to or removed from a car or locomotive must be retained for 90 days and, upon request, must be made available within 15 calendar days for inspection by FRA or State inspectors.

Each tag or card removed from a car or locomotive shall contain the date, location, reason for its removal, and the signature of the person who removed it from the piece of equipment.

Any automated tracking system approved by FRA to meet the tagging requirements contained in paragraph (b)(1) of this section could be 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 ability to utilize an approved automated tracking system in lieu of tagging if FRA finds that the automated tracking system is not properly secure; is inaccessible to FRA or a railroad's employees; or fails to adequately track and monitor the movement of defective equipment. Such a determination will be made in writing, and will state the basis for such action.



FRA’s current regulations on power brakes do not contain requirements pertaining to the movement of equipment with defective power brakes. The movement of equipment with these types of defects is currently controlled by a specific statutory provision originally enacted in 1910.

Under this requirement, FRA is proposing that all cars or locomotives found with defective or inoperative braking equipment be tagged as bad and ordered with a designation of the location where the necessary repairs can and will be effectuated. These requirements are very similar to the tagging requirements currently contained in Part 215 regarding the movement of equipment not in compliance with the Freight Car Safety Standards, and are generally consistent with how most railroads currently tag equipment found with defective brakes. FRA recognizes that the industry is attempting to develop some type of automated tracking system capable of retaining the information required by this section and tracking defective equipment electronically, which FRA envisions would be used on an industry-wide level. Consequently, FRA has expressly provided the option to use an automated tracking system, if it is approved by FRA. Currently, FRA has several concerns regarding the accessibility, reliability, and security of the system being considered by the industry, and would not approve such a system without having those concerns addressed.

FRA estimates that approximately 64,200 defective cars or locomotives will need tags under this requirement. It is estimated that it will take approximately 2.5 minutes to prepare each tag and place one on both sides of the defective equipment. Total annual burden for this requirement is 5,350 hours.

Respondent Universe:

1,620,000  
cars/locomotives

Burden time per response:

2.5  
minutes per tag

Frequency of Response:

On occasion

Annual number of Responses:	128,400 tags	
Annual Burden Hours:	5,350 hours	
Annual Cost:		\$385,200 (\$72 x 5,350 hrs.)

**Calculation:** 128,400 tags x 2.5 min. = 5,350 hours

- B. The person in charge of the train in which the car or locomotive is to be moved must be notified in writing and inform all other crew members of the presence of the defective car or locomotive and the maximum speed and other restrictions determined under paragraph (a)(11)(i)(B) of this section. A copy of the tag or card described in paragraph (b) of this section may be used to provide the notification required by this paragraph.

FRA estimates that approximately 25,000 written notices will be issued annually under this requirement. It is estimated that it will take approximately three (3) minutes to prepare the notice and provide it to the train crew members. Total annual burden for this requirement is 1,250 hours.

Respondent Universe:	1,620,000	
	cars/locomotives	
Burden time per response:	3 minutes	
Frequency of Response:	On occasion	
Annual number of Responses:	25,000 notices	
Annual Burden Hours:	1,250 hours	
Annual Cost:		\$92,500 (\$74 x 1,250 hrs.)

**Calculation:** 25,000 notices x 3 min. = 1,250 hours

Total annual burden for this entire requirement is 6,600 hours (5,350 + 1,250).

**§ 232.17 Special approval procedure.**

The following procedures govern consideration and action upon requests for special approval of a plan under § 232.15(g); an alternative standard under § 232.305, § 232.603, or a single car test procedure under § 232.611; and pre-revenue service acceptance testing plans under subpart F of this part.

- A. Petitions for special approval of an alternative standard or test procedure. Each petition for special approval of a plan under § 232.15(g); an alternative standard under § 232.305 or § 232.603; or a single car test procedure under § 232.611 must contain—
- (1) The name, title, address, and telephone number of the primary person to

be contacted with regard to review of the petition;

- (2) The alternative standard or test procedure proposed, in detail, to be submitted for or to meet the particular requirement of this part;
- (3) Appropriate data or analysis, or both, for FRA to consider in determining whether the alternative standard or test procedure will provide at least an equivalent level of safety or otherwise meet the requirements contained in this part;
- (4) A statement affirming that the railroad has served a copy of the petition on designated representatives of its employees, together with a list of the names and addresses of the persons served.

Each petition must be submitted in triplicate to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., SE, Washington, DC 20590.

FRA estimates that it will receive approximately one (1) petition annually under this requirement. It is estimated that it will take each respondent approximately 100 hours to prepare its petition and forward it to FRA. Total annual burden for this requirement is 100 hours.

Respondent Universe:	741 railroads
Burden time per response:	100 hours
Frequency of Response:	On occasion
Annual number of Responses:	1 petition
Annual Burden Hours:	100 hours
Annual Cost:	\$7,300 (\$73 x 100 hrs.)

**Calculation:** 1 petition x 100 hrs. = 100 hours

B. Petitions for special approval of pre-revenue service acceptance testing plan. Each petition for special approval of a pre-revenue service acceptance testing plan 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 elements prescribed in § 232.505; and

Each petition must be submitted in triplicate to the Associate Administrator for Safety,

Federal Railroad Administration, 1200 New Jersey Ave., SE, Washington, DC 20590. FRA estimates that it will receive approximately one (1) petition annually under this requirement. It is estimated that it will take each respondent approximately 100 hours to prepare their petition and forward it to FRA. Total annual burden for this requirement is 100 hours.

Respondent Universe:	741 railroads	
Burden time per response:	100 hours	
Frequency of Response:	On occasion	
Annual number of Responses:	1 petition	
Annual Burden Hours:		100 hours
Annual Cost:		\$7,300 (\$73 x 100 hrs.)

**Calculation:** 1 petition x 100 hrs. = 100 hours

- C. (1) Service of each petition for special approval of an alternative standard under paragraph (b) of this section must be made on the following: (i) designated employee representatives responsible for the equipment’s operation, inspection, testing, and maintenance under this part; (ii) any organizations or bodies that either issued the standard incorporated in the section(s) of the rule to which the special approval pertains or issued the alternative standard that is proposed in the petition; and (iii) any other person who has filed with FRA a current statement of interest in reviewing special approvals under the particular requirement of this Part at least 30 days but not more than five (5) years prior to the filing of the petition. If filed, a statement of interest shall be filed with FRA’s Associate Administrator for Safety and shall reference the specific section(s) of this Part in which the person has an interest.

FRA estimates that this will be required under the one (1) petition filed annually under this requirement. It is estimated that it will take approximately 20 hours to provide copies of the petition to the required representatives. Total annual burden for this requirement is 20 hours.

Respondent Universe:	741 railroads	
Burden time per response:	20 hours	
Frequency of Response:	Annually	
Annual number of Responses:	1 petition	
Annual Burden Hours:		20 hours
Annual Cost:		
		\$14,600 (\$73 x 20 hrs.)

**Calculation:** 1 petition x 20 hrs. = 20 hours

(2) Additionally, FRA estimates that approximately four (4) people will file a statement of interest with FRA annually. It is estimated that it will take approximately eight (8) hours to prepare each statement. Total annual burden for this requirement is 32 hours.

Respondent Universe:	Public/railroad community	
Burden time per response:	8 hours	
Frequency of Response:	On occasion	
Annual number of Responses:	4 statements	
Annual Burden Hours:		32 hours
Annual Cost:		
		\$2,336 (\$73 x 32 hrs.)

**Calculation:** 4 statements x 8 hrs. = 32 hours

D. Comment. Not later than 30 days from the date of publication of the notice in the Federal Register concerning a petition under paragraph (b) of this section, any person may comment on the petition.

- (1) A 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.
- (2) The comment must be submitted in triplicate to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., SE, Washington, D C 20590.
- (3) The commenter must certify that a copy of the comment was served on each petitioner.

FRA estimates that it will receive approximately 13 comments annually on petitions that have been filed with the agency. It is estimated that it will take approximately four (4) hours for the individual or rail industry member to prepare his/her comments and file them with FRA. Total annual burden for this requirement is 52 hours.

Respondent Universe:	Public/Railroad community
Burden time per response:	4 hours
Frequency of Response:	Annually
Annual number of Responses:	13 comments
Annual Burden Hours:	52 hours
Annual Cost:	\$3,796 (\$73 x 52 hrs.)

**Calculation:** 13 comments x 4 hrs. = 52 hours

Total annual burden for this entire requirement is 304 hours (100 + 100 + 20 + 32 + 52).

**§232.103      General requirements for all train brake systems.**

A. Except for freight cars equipped with nominal 12-inch stroke (8-1/2 and 10-inch

diameters) brake cylinders, all cars must have a legible decal, stencil or sticker affixed to the car or must be equipped with a badge plate displaying the permissible brake cylinder piston travel range for the car at Class I brake tests and the length at which the piston travel renders the brake ineffective, if different from the Class I brake test limits. The decal, stencil, sticker, or badge plate must be located so that it may be easily read and understood by a person positioned safely beside the car.

This section states the standard for determining when a freight car's air brakes are not in effective operating condition based on piston travel. The piston travel limits for standard 12-inch stroke brake cylinders are the same as currently required. However, the experience of FRA indicates a proliferation of equipment with other than standard 12-inch stroke brake cylinders. As a result, mechanical forces and train crew members performing brake system inspections often do not know the acceptable range of brake piston travel for this non-standard equipment. In an attempt to improve this situation and to ensure the proper operation of a car's brakes after being inspected, FRA requires badge plates, stickers, or stenciling of cars with the acceptable range of piston travel for all vehicles equipped with other than standard 12-inch stroke brake cylinders. The information must include both the permissible brake cylinder piston travel range for the vehicle at Class I brake tests and the length at which the piston travel renders the brake ineffective. Due to the growing number of cars with other than standard brake designs, FRA believes that this information is essential in order for a person to properly perform the brake inspections specified in this rule.

### **Assumptions**

- There are approximately 100,000 cars remaining that have to have stickers, stencils, or badge plates applied.
- Approximately 48,800 cars are built each year; assuming 30 % of the newly built cars will require stickers, stencils, or badge plates, this leaves approximately 14,000 cars per year.
- Badge plates will be used on some cars instead of stickers (unlike stickers, only one is needed) reducing the number of stickers needed.
- Stencils will last five (5) years.

As noted above, FRA estimates then that approximately 100,000 cars will require stickers. One-third of the 100,000 cars or approximately 35,000 will receive the stickers each year, and each car will require two stickers. Thus, a total of 70,000 stickers (stencils/badge plates) will be affixed annually under this requirement. It is estimated that it will take approximately 10 minutes to complete and affix each sticker (stencil/badge plate). Total annual burden for this one-time requirement is 11,667 hours.

Respondent Universe:

114,000 cars

Burden time per response:	10 minutes
Frequency of Response:	On occasion
Annual number of Responses:	70,000 stickers/stencils/badge plates
Annual Burden Hours:	

11,667  
hours

Annual Cost:

\$840,0  
24  
(\$72 x  
11,667  
hrs.)

**Calculation:** 70,000 stickers x 10 min. = 11,667 hours

- B. All equipment ordered on or after August 1, 2002, or placed in service for the first time on or after April 1, 2004, shall have train brake systems designed so that an inspector can observe from a safe position either the piston travel, an accurate indicator which shows piston travel, or any other means by which the brake system is actuated. The design shall not require that the inspector to place himself/herself on, under, or between components of the equipment to observe brake actuation or release.

*The burden for this requirement is already covered under the requirement above. Consequently, there is no additional burden associated with this requirement.*

- C. Locomotives.

A railroad shall adopt and comply with a process or procedures to verify that the available hand brakes will sufficiently hold an unattended locomotive consist. A railroad shall also adopt and comply with instructions to address throttle position, status of the reverse lever, position of the generator field switch, status of the independent brakes, position of the isolation switch, and position of the automatic brake valve on all unattended locomotives. The procedures and instruction required in this paragraph shall take into account winter weather conditions as they relate to throttle position and reverser handle.



*This is a one-time burden which has already been fulfilled. Consequently, there is no additional burden associated with this requirement.*

(n) Securement of unattended equipment. Unattended equipment shall be secured in accordance with the following requirements:

(1) A sufficient number of hand brakes, to be not fewer than one, shall be applied to hold the equipment unless an acceptable alternative method of securement is provided pursuant to paragraph (n)(11)(i) of this section. Railroads shall develop and implement a process or procedure to verify that the applied hand brakes will sufficiently hold the equipment with the air brakes released.

*The burden for this requirement is included below under § 232.103(n)(3). Consequently, there is no additional burden associated with this requirement.*

(2) Except for equipment connected to a source of compressed air (e.g., locomotive or ground air source), or as provided under paragraph (n)(11)(ii) of this section, prior to leaving equipment unattended, the brake pipe shall be reduced to zero at a rate that is no less than a service rate reduction, and the brake pipe vented to atmosphere by leaving the angle cock in the open position on the first unit of the equipment left unattended. A train's air brake shall not be depended upon to hold equipment standing unattended (including a locomotive, a car, or a train whether or not locomotive is attached).

(3) Except for distributed power units, the following requirements apply to unattended locomotives:

(i) All hand brakes shall be fully applied on all locomotives in the lead consist of an unattended train.

(ii) All hand brakes shall be fully applied on all locomotives in an unattended locomotive consist outside of a yard.

(iii) At a minimum, the hand brake shall be fully applied on the lead locomotive in an unattended locomotive consist within a yard.

(iv) A railroad shall develop, adopt, and comply with procedures for securing any unattended locomotive required to have a hand brake applied pursuant to paragraph (n)(3)(i) through (n)(3)(iii) of this section when the locomotive is not equipped with an operative hand brake.

*This is a one-time burden which has already been fulfilled under the information collection associated with Emergency Order (EO 28) (OMB No 2130-0601). Consequently, there is no additional burden associated with this requirement.*

(n)(7)(i) No equipment described in paragraph (n)(6) of this section shall be left unattended on a main track or siding (except when that main track or siding runs through, or is directly adjacent to a yard) until the railroad has adopted and is complying with a plan identifying specific locations or circumstances when the equipment may be left unattended. The plan shall contain sufficient safety justification for determining when equipment may be left unattended. The railroad must notify FRA when the railroad develops and has in place a plan, or modifies an existing plan, under this provision prior to operating pursuant to the plan. The plan shall be made available to FRA upon request. FRA reserves the right to require modifications to any plan should it determine the plan is not sufficient.

*This is a one-time burden which has already been fulfilled under the information collection associated with Emergency Order (EO 28) (OMB No 2130-0601). Consequently, there is no additional burden associated with this requirement.*

Additionally, FRA estimates that there are approximately one (1) plan will need to be revised under the above requirement. It is estimated that it will take each railroad approximately 10 hours to complete its plan revision. Total annual burden for this requirement is 10 hours.

	Respondent Universe: 741 Railroads
Burden time per response:	10 hours
Frequency of Response:	On occasion
Annual number of Responses:	1 revised plan
Annual Burden:	10 hours
Annual Cost:	\$730 (\$73 x 10 hrs.)
<b><u>Calculation:</u></b>	1 revised plan x 10 hrs. = 10 hours

Furthermore, FRA estimates that approximately one (1) notification will be sent to FRA when railroads have developed a plan under the provision above prior to the railroad operating pursuant to the plan. It is estimated that it will take approximately 30 minutes to complete each notification. Total annual burden for this requirement is one (1) hour.

	Respondent Universe: 741 Railroads
Burden time per response:	30 minutes
Frequency of Response:	On occasion
Annual number of Responses:	1 notification
Annual Burden:	1 hour

Annual Cost: \$73 (\$73 x 1 hr.)

**Calculation:** 1 notification x 30 min. = 1 hour

(ii) Except as provided in paragraph (n)(8)(iii) of this section, any freight train described in paragraph (n)(6) of this section that is left unattended on a main track or siding that runs through, or is directly adjacent to, a yard shall comply with the requirements contained in paragraphs (n)(8)(i) and (n)(8)(ii) of this section.

(8)(i) Where a freight train or standing freight car or cars as described in paragraph (n)(6) of this section is left unattended on a main track or siding outside of a yard, and not directly adjacent to a yard, an employee responsible for securing the equipment shall verify with another person qualified to make the determination that the equipment is secured in accordance with the railroad's processes and procedures.

*The burden for this requirement is included under that of job briefings in section 232.103(n)(9). Consequently, there is no additional burden associated with this provision.*

(9) Each railroad shall implement operating rules and practices requiring the job briefing of securement for any activity that will impact or require the securement of any unattended equipment in the course of the work being performed.

*The above requirement related to operating rules and practices has now been fulfilled by all railroads. Consequently, there is no additional burden associated with this part of the requirement.*

As noted earlier, trains run approximately 260 days per year on average when not undergoing maintenance or repairs. Since there are approximately 90,000 railroad train and engine employees, FRA estimates that approximately 23,400,000 securement job briefings (90,000 employee briefings x 260 days p/yr.) will take place each year under the above requirement. It is estimated that it will take approximately 30 seconds to complete each securement job briefing. Total annual burden for this requirement is 195,000 hours.

	Respondent Universe:
	100,000
	Railroad Employees
Burden time per response:	30 seconds
Frequency of Response:	On occasion
Annual number of Responses:	23,400,000 securement job briefings
Annual Burden:	195,000 hours
Annual Cost:	\$14,430,000

(\$74 x 195,000 hrs.)

**Calculation:** 23,400,000 securement job briefings x 30 sec. = 195,000 hours

(10) Each railroad shall adopt and comply with procedures to ensure that, as soon as safely practicable, a qualified employee verifies the proper securement of any unattended equipment when the railroad has knowledge that a non-railroad emergency responder has been on, under, or between the equipment.

*Railroads have already completed the procedures required under provision. Consequently, there is no additional burden associated with this requirement.*

Additionally, FRA estimates that approximately 12 inspections of equipment that any emergency responder has been on, under, or between for proper securement before the train or vehicle is left unattended will be made by qualified employees each year under the above requirement. It is estimated that it will take approximately four (4) hours to complete each inspection. Total annual burden for this requirement is 48 hours.

Respondent Universe:	741 Railroads
Burden time per response:	4 hours
Frequency of Response:	On occasion
Annual number of Responses:	12 inspections
Annual Burden:	48 hours
Annual Cost:	\$3,456 (\$72 x 48 hrs.)

**Calculation:** 12 inspections x 4 hrs. = 48 hours

(11) Alternative securement. A railroad may adopt and then must comply with procedures to do the following:

(i) In lieu of applying hand brakes as required under paragraph (n) of this section, properly maintain and use mechanical securement devices, within their design criteria and as intended within a classification yard or on a repair track.

(ii) In lieu of compliance with the associated requirement in paragraph (n)(2) of this section – and in lieu of applying hand brakes as required under paragraph (n) of this section – isolate the brake pipe of standing equipment from atmosphere if it:

(A) Initiates an emergency brake application on the equipment:

(B) Closes the angle cock; and

(C) Operates the locomotive or otherwise proceeds directly to the opposite end of the equipment for the sole purpose to either open the angle cock to vent to atmosphere or provide an air source.

*The above requirement related to procedures has now been fulfilled by all railroads. Consequently, there is no additional burden associated with this part of the requirement.*

Total annual burden for this entire requirement is 206,726hours (11,667 + 10 + 1 + 195,000 + 48).

**§ 232.105      General requirements for locomotives.**

- A. (c) On locomotives so equipped, the hand or parking brake as well as its parts and connections must be inspected, and necessary repairs made as often as service requires but no less frequently than every 368 days. The date of the last inspection must either be entered on Form FRA F 6180-49A or suitably stenciled or tagged on the locomotive.

FRA estimates that approximately 30,000 locomotives will require handbrake inspections every 368 days. It is estimated that it will take approximately five (5) minutes to make the inspection and record the information on Form FRA 6180.49A. Total annual burden for this requirement is 2,500 hours.

Respondent Universe:	30,000 Locomotives
Burden time per response:	5 minutes
Frequency of Response:	On occasion
Annual number of Responses:	30,000 inspection/forms or records
Annual Burden Hours:	
	2,500 hours
Annual Cost:	\$182,500 (\$73 x 2,500 hrs.)

**Calculation:** 30,000 inspections x 5 min. = 2,500 hours

\* \* \* \*

(h)(1) After March 1, 2017, each locomotive left unattended outside of a yard, but not on a track directly adjacent to the yard, shall be equipped with an operative exterior locking mechanism. **(New Requirement)**

(2) The railroad shall inspect and, where necessary, repair the locking mechanism during a locomotive's periodic inspection required in § 229.23 of this chapter.

FRA estimates that there are approximately 30,000 locomotives currently in use. It is estimated that it will take approximately 15 seconds to complete the required inspection and another 15 seconds to record the information on Form FRA 6180.49A. Total annual burden for this requirement is 250 hours.

Respondent Universe:	30,000 Locomotives
Burden time per response:	15 seconds + 15 seconds
Frequency of Response:	On occasion
Annual number of Responses:	30,000 inspections/records
Annual Burden Hours:	

250  
hours

Annual Cost:

\$18,250 (\$73 x 250 hrs.)

**Calculation:** 30,000 inspections/records x 30 sec. = 250 hours

Further, as noted in the regulatory evaluation included in this rule, FRA estimates that approximately 73 locomotives per year will have a broken exterior locking mechanism requiring repair. It is estimated that it will take approximately one (1) hour to complete the necessary repairs and another 15 seconds to record the information on Form FRA 6180.49A. Total annual burden for this requirement is 73 hours.

Respondent Universe:	30,000 Locomotives
Burden time per response:	1 hour + 15 seconds
Frequency of Response:	On occasion
Annual number of Responses:	73 repaired exterior locomotive locking mechanisms/records
Annual Burden Hours:	

73

hours

Annual Cost:

\$5,256  
(\$72 x  
73  
hrs.)

**Calculation:** 73 repaired exterior locomotive locking mechanisms/  
records x 60.25 min. = 73 hours

Total annual burden for this entire requirement is 2,823 hours (2,500 + 250 + 73).

**§ 232.107 Air source requirements and cold weather operations.**

- A. Each railroad must adopt, comply with, and make available to FRA upon request a plan to monitor all yard air sources, other than locomotives, to ensure that they operate as intended and do not introduce contaminants into the brake system of freight equipment.

This plan shall require the railroad to:

- (1) Inspect each yard air source at least two times per calendar year, no less than five months apart, to ensure it operates as intended and does not introduce contaminants into the brake system of the equipment it services.
- (2) Identify yard air sources found not to be operating as intended or found introducing contaminants into the brake system of the equipment it services.
- (3) Repair or take other remedial action regarding any yard air source identified under paragraph (a)(2)(ii) of this section.
- (4) A railroad shall maintain records of information and actions required by paragraph (a)(2) of this section. These records shall be maintained for a period of at least one year from the date of creation, and may be maintained either electronically or in writing.

FRA here requires a monitoring program designed to ensure that yard air sources operate as intended. FRA believes that implementation of this monitoring program represents a method by which the industry can truly maximize the benefits to be realized through air dryer technology, which all parties acknowledge has been proven to reduce the level of moisture introduced into the train line, at a cost that is commensurate with the subsequent benefits. The program requires a railroad to take remedial action with respect to any yard air sources that are found not to be operating as intended, and further establishes a retention requirement with respect to records of these deficient units to facilitate the tracking and resolution of continuing problem areas.

**First Year of Program**

*The burden for the first year of this requirement has already been fulfilled. Consequently, there is no additional burden associated with it.*

**Subsequent Years**

FRA estimates that approximately one (1) new railroad will be formed annually that will need to prepare a plan in subsequent years under this requirement. Total annual burden is 40 hours.

Respondent Universe:		10 new railroads
Burden time per response:		40 hours
Frequency of Response:		On occasion
Annual number of Responses:	1 plan	
Annual Burden Hours:		40 hours
Annual Cost:		\$2,920 (\$73 x
	40 hrs.)	

**Calculation:** 1 plan x 40 hrs. = 40 hours

**Amendments to Plan**

FRA estimates approximately 10 amendments will be filed each year by respondents. It is estimated that it will take approximately 20 hours to prepare and file each amendment. Total annual burden for this requirement is 200 hours.

Respondent Universe:		50 existing plans
Burden time per response:		20 hours
Frequency of Response:		On occasion



Annual number of Responses:	10 amendments	
Annual Burden Hours:		200 hours
Annual Cost:		

\$14,600 (\$73 x 200 hrs.)

**Calculation:** 10 amendments x 20 hrs. = 200 hours

**Recordkeeping**

FRA estimates approximately 1,150 records will be kept annually by the respondents. It is estimated that each record will take approximately 20 hours. Total annual burden for this requirement is 23,000 hours.

Respondent Universe:	50 existing plans	
Burden time per response:	20 hours	
Frequency of Response:	Annually	
Annual number of Responses:	1,150 records	
Annual Burden Hours:		23,000 hours
Annual Cost:		

\$1,679,000 (\$73 x 23,000 hrs.)

**Calculation:** 1,150 records x 20 hrs. = 23,000 hours

- B. A railroad must adopt, comply with, and make available to FRA upon request detailed written operating procedures tailored to the equipment and territory of that railroad to cover safe train operations during cold weather situations. For purposes of this provision, cold weather means when the ambient temperature drops below 10 degrees Fahrenheit (F) (minus 12.2 Celsius).

*This requirement has already been fulfilled. Consequently, there is no additional burden associated with it.*

Total burden for this entire requirement is 23,240 hours (40 + 200 + 23,000).

**§ 232.109**     **Dynamic brake requirements.**

- A. Except as provided in paragraph (i) of this section, a locomotive engineer must be informed of the operational status of the dynamic brakes on all locomotive units in the consist at the initial terminal or point of origin for a train and at other locations where a locomotive engineer first begins operation of a train. The information required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the information must be maintained in the cab of the controlling locomotive.

In considering the entirety of the information available, FRA concluded that it is imperative that the locomotive engineer be informed of the operational status of the dynamic brakes on all locomotives in the consist at the initial terminal or point of origin for a train or at other locations where a locomotive engineer first takes charge of a train, and that a record, either written or electronic, be kept in the cab of the controlling locomotive.

FRA believes that – if the devices are available – engineers should be informed on their safe and proper use and be provided with information regarding the amount of dynamic braking power actually available on their respective trains. FRA believes that by providing an engineer with as much information as possible on the status of the dynamic brakes on a train, a railroad better enables that engineer to operate the train in the safest and most efficient manner.

FRA estimates this information will be required annually for the approximately 1,656,000 freight trains in service. It is estimated that it will take approximately four (4) minutes per freight train. Total annual burden for this requirement is 110,400 hours.

Respondent Universe:	741 railroads
Burden time per response:	4 minutes - freight trains
Frequency of Response:	On occasion
Annual number of Responses:	1,656,000 records - freight trains
Annual Burden Hours:	

110,400 hours  
- freight trains

Annual Cost:

\$8,169,600  
(\$74 x 110,400 hrs.)

**Calculation:** 1,656,000 records x 4 min. = 110,400 hours

- B. Except as provided in paragraph (e) of this section, all inoperative dynamic brakes must be repaired within 30 calendar days of becoming inoperative or at the locomotive's next periodic inspection pursuant to §229.23 of this chapter, whichever occurs first. An electronic or written record of repairs made to a locomotive's dynamic brakes must be retained for 92 days and, upon request, must be made available for inspection by FRA or State inspectors.

FRA estimates that approximately 6,358 locomotives (per AAR data) will be found with inoperative dynamic brakes that require repair under this requirement. It is estimated that it will take approximately four (4) minutes to make a written or electronic record of the required repairs. Total annual burden for this requirement is 424 hours.

Respondent Universe:	30,000 locomotives
Burden time per response:	4 minutes
Frequency of Response:	Annually
Annual number of Responses:	6,358 repair records
Annual Burden Hours:	

424

hours

Annual Cost:

\$30,528 (\$72 x 424 hrs.)

**Calculation:** 6,358 repair records x 4 min. = 424 hours

C. Except as provided in paragraph (e) of this section, a locomotive discovered with inoperative dynamic brakes must have a tag bearing the words “inoperative dynamic brake” securely attached and displayed in a conspicuous location in the cab of the locomotive. This tag must contain the following information:

- (1) The locomotive number;
- (2) The name of the discovering carrier;
- (3) The location and date where condition was discovered; and
- (4) The signature of the person discovering the condition.

FRA estimates that approximately 6,358 tags will be issued annually under this requirement. It is estimated that it will take approximately 30 seconds to place the required information on the tag, and place it in the locomotive. Total annual burden for this requirement is 53 hours.

Respondent Universe:	30,000 locomotives
Burden time per response:	30 seconds
Frequency of Response:	Annually
Annual number of Responses:	6,358 tags
Annual Burden Hours:	

53 hours

Annual Cost:

\$3,816  
(\$72 x  
53  
hrs.)

**Calculation:** 6,358 tags x 30 sec. = 53 hours

- D. A railroad may elect to declare the dynamic brakes on a locomotive deactivated without removing the dynamic brake components from the locomotive, only if all of the following conditions are met: (1) the locomotive is clearly marked with the words “dynamic brake deactivated” in a conspicuous location in the cab of the locomotive; and (2) the railroad has taken appropriate action to ensure that the deactivated locomotive is incapable of utilizing dynamic brake effort to retard or control train speed.

**First Year Burden**

*The burden for the first year of this requirement has already been fulfilled. Consequently, there is no additional burden associated with it.*

**Subsequent years**

FRA estimates that approximately 10 locomotives will have dynamic brakes that are declared deactivated in subsequent years. It is estimated that it will take approximately five (5) minutes to mark/stencil each locomotive with the words “dynamic brake deactivated” in a conspicuous location in the cab of the locomotive. Total subsequent yearly burden for this requirement is one (1) hour.

Respondent Universe:	8,000 locomotives	
Burden time per response:	5 minutes	
Frequency of Response:	On occasion	
Annual number of Responses:	10 markings/stencilings	
Annual Burden Hours:		1 hour
Annual Cost:		

\$72  
(\$72 x 1 hr.)

**Calculation:** 10 markings/stencilings x 5 min. = 1 hour

- E. A locomotive with inoperative or deactivated dynamic brakes must not be placed in the controlling (lead) position of a consist unless the locomotive has the capability of controlling the dynamic braking effort in trailing locomotives in the consist that are so equipped, and displaying to the locomotive engineer the deceleration rate of the train or the total dynamic brake retarding force.

*This information is communicated mechanically, and is not a paperwork requirement. Rather, it is a regulatory requirement governing the operation of the train which was mistakenly inserted into the last submission. Consequently, there is no burden associated with this provision.*

- F. All locomotives equipped with dynamic brakes and ordered on or after (insert date one year + 180 days from date of final rule publication), or placed in service for the first time on or after (insert date three years + 60 days from date of final rule publication) shall be designed to test the electrical integrity of the dynamic brake at rest, and to display the available total dynamic brake retarding force at various speed increments in the cab of the controlling (lead) locomotive.

*This is a regulatory/mechanical requirement, and not a paperwork requirement. Consequently, there is no burden associated with it.*

- G. All rebuilt locomotives equipped with dynamic brakes and placed in service for the first time on or after (insert date three years + 60 days from date of final rule publication) shall be designed to test the electrical integrity of the dynamic brake at rest, and to display either the train deceleration rate or the available total train dynamic brake retarding force at various speed increments in the cab of the controlling (lead) locomotive.

*This is a regulatory/mechanical requirement, and not a paperwork requirement. Consequently, there is no burden associated with it.*

- H. Each railroad operating a train with a brake system that includes dynamic brakes must adopt, comply with, and make available to FRA upon request written operating rules

governing safe train handling procedures using these dynamic brakes under all operating conditions, which must be tailored to the specific equipment and territory of the railroad.

**First Year Burden**

*The burden for the first year of this requirement has already been fulfilled. Consequently, there is no additional burden associated with it.*

**Subsequent years**

In subsequent years, FRA estimates that approximately five (5) new railroads per year will have to develop operating rules under this requirement. It is estimated that it will take approximately four (4) hours for each railroad to develop and file the required operating rules. Total one-time burden for this requirement is 20 hours.

Respondent Universe:	5 new railroads
Burden time per response:	4 hours
Frequency of Response:	One-time
Annual number of Responses:	5 operating rules
Annual Burden Hours:	
	20 hours

Annual Cost:

\$14,600 (\$73 x 20 hrs.)

**Calculation:** 5 operating rules x 4 hrs. = 20 hours

**Amendments**

FRA estimates that approximately 15 amendments will be submitted annually under this requirement. It is estimated that each amendment will take approximately one (1) hour to complete and forward to FRA. Total annual burden for this requirement is 15 hours.

Respondent Universe:	741 railroads	
Burden time per response:	1 hour	
Frequency of Response:	On occasion	
Annual number of Responses:	15 amendments	
Annual Burden Hours:		15 hours
Annual Cost:		\$1,095 (\$73 x 15 hrs.)

**Calculation:** 15 amendments x 1 hr. = 15 hours

- I. The railroad's operating rules must: (1) ensure that friction brakes are sufficient by themselves, without the aid of dynamic brakes, to stop the train under all operating conditions; and (2) include a miles-per-hour-overspeed-top rule. At a minimum, this rule shall require that any train, when descending a grade of one percent or greater, must be immediately brought to a stop, by an emergency brake application if necessary, when the train's speed exceeds the maximum authorized speed for that train by more than five miles per hour. A railroad shall reduce the five mile per hour over-speed restriction if validated research indicates the need for such a reduction. A railroad may increase the five mile per hour over-speed restriction only with approval of FRA and based on verifiable data and research.

**First Year Burden**

*The burden for this requirement has already been completed. Consequently, there is no additional burden associated with it.*

**Subsequent years**

FRA estimates that approximately five (5) new railroads per year will make a request to



FRA to increase the five mile per hour over-speed restriction. It is estimated that it will take approximately 30 minutes to compose the letter to FRA making this request, and an additional 20 hours to develop the verifiable data. Total annual burden for this requirement is 103 hours.

Respondent Universe:	741 railroads	
Burden time per response:	30 minutes + 20 hours	
Frequency of Response:	On occasion	
Annual number of Responses:	5 requests/letters	
Annual Burden Hours:		103 hours
Annual Cost:		\$7,519 (\$73 x 103 hrs.)

**Calculation:** 5 request/letters x 20.5 hrs. = 103 hours

- J. A railroad operating a train with a brake system that includes dynamic brakes must adopt, comply with specific knowledge, skill, and ability criteria to ensure that its locomotive engineers are fully trained in the operating rules prescribed by paragraph (j) of this section. The railroad shall incorporate such criteria into its engineer certification program pursuant to Part 240 of this chapter.

**First Year of Program**

*The burden for the first year of this requirement has already been completed. Consequently, there is no additional burden associated with it.*

**Subsequent Years**

In subsequent years, FRA estimates that approximately five (5) new railroads will have to

develop the required information and make amendments to their locomotive engineer certification program. It is estimated that it will take approximately 16 hours to complete each amendment. Total annual burden for this requirement is 80 hours.

Respondent Universe:	5 new railroads	
Burden time per response:	16 hours	
Frequency of Response:	One-time	
Annual number of Responses:	5 amendments	
Annual Burden Hours:		80 hours
Annual Cost:		\$5,840 (\$73 x 80 hrs.)

**Calculation:** 5 amendments x 16 hrs. = 80 hours

Total annual burden for this entire requirement is 111,096 hours (110,400 + 424 + 53 + 1 + 20 + 15 + 103 + 80).

**§ 232.111    Train information handling.**

A railroad must adopt and comply with written procedures to ensure that a train crew employed by the railroad is given accurate information on the condition of the train brake system and train factors affecting brake system performance and testing when the crew takes over responsibility for the train. The information required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the information must be maintained in the cab of the controlling locomotive. The procedures shall require that each train crew taking charge of a train be informed of the following:

- (1) The total weight and length of the train, based on the best information available to the railroad.

- (2) Any special weight distribution that would require special train handling procedures.
- (3) The number and location of cars with cut-out or otherwise inoperative brakes and the location where they will be repaired.
- (4) If a Class I or Class IA brake test is required prior to the next crew change point, the location at which that test shall be performed.
- (5) Any train brake system problems encountered by the previous crew of the train. This section contains a list of the specific information FRA proposes to require railroads to furnish train crew members about the train and the train's brake system at the time they take over the train. FRA believes that train crews need this information in order to avoid potentially dangerous train handling situations and to be able to comply with various Federal safety standards.

It should be noted that FRA has left the method by which railroads convey the required information to the train crews to the discretion of the railroads. FRA firmly believes that each individual railroad is in the best position to determine for itself the method it will use to dispense the required information, based on the individual characteristics of its operations. However, the means for conveying the necessary information will be part of the written operating requirements, and railroads will be obliged to follow their own requirements.

Most Class I railroads already provide the information required on weight, length, and weight distribution through on-board computers. However, information required under numbers 3, and 5 above will require either crew notation, as in the case where a brake is cut-out en route or where problems are encountered en route, or a system of communicating this information. As crew changes frequently take place where the crews do not see each other and locomotive consist changes take place en route, the system of communicating this information may be somewhat complicated. The railroads could require that the crews track and disseminate the information; they may rely on the dispatchers; they may use the onboard computer system; or they may rely on a paper system.

### **First Year of Program**

*The burden for the first year of this requirement has already been completed. Consequently, there is no additional burden associated with it.*

### **Assumptions:**

Complexity of written procedures will correspond to railroad size, such that a small

railroad will not require as much time or effort as a large railroad.

It will take a minimum of 40 hours for other railroads to develop written procedures.

**Subsequent Years**

FRA estimates approximately five (5) procedures will be developed by new railroads in subsequent years due to this requirement. It is estimated that it will the railroad approximately 40 hours to develop each procedure. Total burden for this requirement is 200 hours.

Respondent Universe:	5 railroads	
Burden time per response:	40 hours	
Frequency of Response:	One-time	
One-time number of Responses:	5 procedures	
One-time Burden Hours:		200 hours

Annual Cost:		\$14,600 (\$73 x 200 hrs.)
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**Calculation:** 5 procedures x 40 hrs. = 200 hours

**Amendments to Written Program**

FRA estimates approximately 100 amendments will be prepared and filed under this requirement. It is estimated that it will take approximately 20 hours to prepare and file each amendment. Total annual burden for this requirement is 2,000 hours.

Respondent Universe:	100 railroads
Burden time per response:	20 hours
Frequency of Response:	On occasion
Annual number of Responses:	100 amendments

Annual Burden Hours:

2,000  
hours

Annual Cost:

\$146,000  
(\$73 x  
2,000  
hrs.)

**Calculation:** 100 amendments x 20 hrs. = 2,000 hours

**Report requirements to train crew**

FRA estimates approximately 2,112,000 reports will be given to train crew members annually. Each report is estimated to take 10 minutes. Total annual burden for this requirement is 352,000 hours.

Respondent Universe: 741 railroads  
Burden time per response: 10 minutes  
Frequency of Response: Annually  
Annual number of Responses: 2,112,000 reports  
Annual Burden Hours:

352,000  
hours

Annual Cost:

\$25,696,000  
(\$73 x

352,000 hrs.)

**Calculation:** 2,112,000 reports x 10 min. = 352,000 hours

Total annual burden for this entire requirement is 354,200 hours (200 + 2,000 + 352,000).

### **Subpart C - Inspection and Testing Requirements**

#### **§ 232.203     Training requirements.**

- (a) Each railroad and each contractor must adopt, comply with a training, qualification, and designation program for its employees who perform brake system inspections, tests, or maintenance. For purposes of this section, a “contractor” is defined as a person under contract with the railroad or car owner. The records required by this section may be maintained either electronically or in writing.
- (b) As part of this program, the railroad or contractor must:
  - (1) Identify the tasks related to the inspection, testing, and maintenance of the brake system required by this Part that must be performed by the railroad or contractor and identify the skills and knowledge necessary to perform each task.
  - (2) Develop or incorporate a training curriculum that includes classroom and “hands-on” lessons designed to impart the skills and knowledge identified as necessary to perform each task. The developed or incorporated training curriculum must specifically address the Federal regulatory requirements contained in this part that are related to the performance of the tasks identified.
  - (3) Require all employees to successfully complete a training curriculum that covers the skills and knowledge the employee will need to possess in order to perform the tasks required by this Part that the employee will be performing, including the specific Federal regulatory requirements contained in this Part related to the performance of a task for which the employee will be responsible.
  - (4) Require all employees to pass a written or oral examination covering the

skills and knowledge the employee will need to possess in order to perform the tasks required for which the employee will be responsible, including the specific Federal regulatory requirements contained in this Part related to the performance of a task for which the employee will be responsible for performing.

- (5) Require all employees to individually demonstrate “hands-on” capability by successfully applying the skills and knowledge the employee will need to possess in order to perform the tasks required by this Part that the employee will be responsible for performing to the satisfaction of the employee’s supervisor or designated instructor.
- (6) An employee hired prior to June 1, 2001, for a railroad or contractor covered by this Part will be considered to have met the requirements, or a portion of the requirements, contained in paragraphs (b)(3) through (b)(5) of this section if the employee receives training and testing on the specific regulatory requirements contained in this Part related to the performance of the tasks which the employee will be responsible for performing; and if:
  - (i) The training or testing, including efficiency testing, previously received by the employee is determined by the railroad to meet the requirements, or a portion of the requirements, contained in paragraphs (b)(3) through (b)(5) of this section and such training or testing can be documented as required in paragraphs (e)(1) through (e)(4) of this section;
  - (ii) The employee passes an oral, written, or practical, “hands-on” test developed or adopted by the railroad or contractor which is determined by the railroad or contractor to ensure that the employee possesses the skills and knowledge, or a portion of the skills or knowledge, required in paragraphs (b)(3) through (b)(5) of this section and the test is documented as required in paragraph (e) of this section; or
  - (iii) The railroad or contractor certifies that a group or segment of its employees has previously received training or testing determined by railroad or contractor to meet the requirements, or a portion of the requirements, contained in paragraphs (b)(3) through (b)(5) of this section and complete records of such training are not available, provided the following conditions are satisfied:
    - (A) The certification is placed in the employee’s training records required in paragraph (e) of this section;
    - (B) The certification contains a brief description of the training provided and

the approximate date(s) on which the training was provided; and

- (C) Any employee determined to be trained pursuant to this paragraph is given a diagnostic oral, written, or “hands-on” test covering that training for which this paragraph is relied upon at the time the employee receives his or her first periodic refresher training under paragraph (b)(8) of this section.
- (iv) Any combination of the training or testing contained in paragraphs (b)(6)(i) through (b)(6)(iii) of this section and paragraphs (b)(3) through (b)(5) of this section;
- (7) Require supervisors to exercise oversight to ensure that all the identified tasks are performed in accordance with the railroad’s written procedures and the specific Federal regulatory requirements contained in this Part.
- (8) Require periodic refresher training, at an interval not to exceed three years, that includes classroom and “hands-on” training, as well as testing; except that employees that have completed their initial training under (b)(3) through (b)(6) of this Part prior to April 1, 2004, shall not be required to complete their first refresher training until four years after the completion of their initial training, and every three years thereafter. Observation and evaluation of actual performance of duties may be used to meet the “hands-on” portion of this requirement, provided such testing is documented are required in paragraph (e) of this section; and
- (9) Add new brake systems to the training, qualification, and designation program prior to its introduction to revenue service.
- (c) A railroad that operates trains required to be equipped with a two-way end-of-train telemetry device pursuant to Subpart E of this Part and each contractor that maintains such devices must adopt and comply with a training program which specifically addresses the testing, operation, and maintenance of two-way end-of-train devices for employees who are responsible for the testing, operation, and maintenance of the devices.
- (d) A railroad that operates trains under conditions that require setting air brake pressure retaining valves must adopt and comply with a training program which specifically addresses the proper use of retainers for employees who are responsible for using or setting retainers.

Two of the major factors in ensuring the quality of brake inspections are the proper training of the persons performing the inspections, and adequate enforcement of the



requirements. Therefore, FRA retained the current 1,000 mile inspection interval in the rule and incorporated general training requirements for persons conducting brake inspections. These training requirements include general provisions requiring both classroom and “hands-on” training, general testing requirements, and annual refresher training provisions. FRA also requires that various training records be maintained by the railroads, either electronically or in writing, in order for FRA to determine the basis for a railroad’s determination that a particular person is considered qualified to perform a brake inspection, test, or repair. FRA believes the general training and recordkeeping requirements provide some assurance that qualified people are conducting the required brake system inspections and tests.

In this rule and its associated information collection, FRA makes a concerted effort to focus on the qualifications of train crew members and to strictly scrutinize the method and length of time spent by these individuals in the performance of the required inspections. This scrutiny may involve the review of event recorder tapes to ensure that a sufficient amount of time was afforded for conducting a proper inspection of the brake system. FRA seeks to focus its inspection activities so as to ensure that train crews are provided the proper equipment necessary to perform many of the required inspections.

FRA believes that these minimum training qualifications needed to be established to assure that brake inspections and tests are properly performed so that both the public and railroad employees are safeguarded from the operation of equipment that does not meet Federal standards.

Under this section, FRA includes broad performance-based training and qualification requirements which permit railroads to develop programs specifically tailored to the type of equipment they operate and which are conducive to the instruction of employees designated by the railroad to perform the inspection, testing, and maintenance duties required in this rule. FRA agreed with several railroad commenters that there is no reason for individuals who solely perform pre-departure air brake tests and inspections to be as highly trained as a carman, since carmen perform many other duties which involve the maintenance and repair of equipment in addition to brake inspections. Therefore, the training and qualification requirements permit railroads to tailor their training programs to ensure the capability of its employees to perform the tasks for which they are responsible. Training and qualification requirements apply not only to railroad personnel but also to contract personnel and personnel in plants who build cars and locomotives and who are responsible for brake system inspections, maintenance, or tests required by this part.

Although the training and qualification requirements currently incorporated continue to require that any training provided include classroom and “hands-on” training, as well as oral or written examinations and “hands-on” proficiency, they do not mandate a specific number of hours that this training must encompass since that will vary depending on the employee or employees involved. FRA believes that this is probably best determined by

the railroad. Once training is provided, the rule's requirements also contain provisions for conducting periodic refresher training and supervisor oversight of employees performance.

As mentioned previously, the training can be tailored to the specific needs of the railroad. Across the industry as a whole, the rule does not require extensive changes in the way most railroads currently operate but does require some railroads to invest more time in the training of their personnel so as to prevent railroads from using minimally trained and unqualified people to perform crucial safety tasks.

Paragraph (2) above includes a series of general requirements or elements which must be part of any training and qualification plan developed and implemented by a railroad. FRA believes that the elements contained in this section are specific enough to ensure high quality training while being sufficiently broad to permit a railroad to develop a training plan that is best suited to its particular operation. This paragraph requires railroads to identify the specific tasks related to the inspection, testing, and maintenance of the brake systems operated by that railroad; develop written procedures for performing those tasks; and identify the skills and knowledge necessary to perform those tasks. FRA believes that these requirements ensure that, at a minimum, railroads survey their entire operation and identify the various activities their employees perform. FRA intends for these written procedures and for the identified skills and knowledge to be used as the foundation for any training program developed by the railroad. Thus, railroads would most likely not need to provide much additional training, except possibly refresher training, to its carmen forces that have completed an apprentice program for their craft.

Paragraph (3) above obliges each railroad which operates trains required to be equipped with two-way end-of-train devices to develop and implement a training program which specifically addresses the testing, operation, and maintenance of the devices.

FRA recognizes that some railroads are forced to place a greater emphasis on training and qualifications than they have in the past, and this requirement does result in additional costs for those railroads. However, the rule allows the railroads the flexibility to provide only that training which an employee needs for a specific job.

As previously noted, this rule – across the industry as a whole – does not require extensive changes in the way most railroads currently operate, but it does require some railroads to invest more time in the training of their personnel and ought to prevent railroads from using minimally trained and unqualified people to perform crucial safety tasks.

### **Training Program**

*The burden for the first year of this requirement has already been completed.*

Consequently, there is no additional burden associated with it.

**Subsequent Years of Program**

FRA estimates approximately five (5) training program will be developed by new railroads in subsequent years due to this requirement. It is estimated that it will take the railroad approximately 100 hours to develop such a program. Total burden for this requirement is 500 hours.

Respondent Universe:	15 railroads	
Burden time per response:	100 hours	
Frequency of Response:	One-time	
One-time number of Responses:	5 programs	
One-time Burden Hours:	500 hours	
Annual Cost:		\$36,500 (\$73
	x 500 hrs.)	

**Calculation:** 5 programs x 100 hrs. = 500 hours

**Amendments to Written Program**

FRA estimates approximately 695 amendments will be added as a result of this requirement. It is estimated that it will take approximately (8) hours to develop each amendment and send it to FRA. Total annual burden for this requirement is 5,560 hours.

Respondent Universe:	741 railroads	
Burden time per response:	8 hours	
Frequency of Response:	On occasion	
Annual number of Responses:	695 amendments	
Annual Burden Hours:		5,560
		hours

Annual Cost:

\$405,8  
80

(\$73 x  
5,560  
hrs.)

**Calculation:** 695 amendments x 8 hrs. = 5,560 hours

(e) A railroad or contractor must maintain adequate records to demonstrate the current qualification status of all of its personnel assigned to inspect, test, or maintain a train brake system. The records required by this paragraph may be maintained either electronically or in writing and shall be provided to FRA upon request. These records must include the following information concerning each such employee:

- (1) The name of the employee;
- (2) The dates that each training course was completed;
- (3) The content of each training course successfully completed;
- (4) The scores on each test taken to demonstrate proficiency;
- (5) A description of the employees "hands-on performance applying the skills and knowledge the employee needs to possess in order to perform the tasks required by this Part that the employee will be responsible for performing, and the basis for finding that the skills and knowledge were successfully demonstrated;
- (6) The task(s) required to be performed under this Part for which the person is deemed qualified to perform;
- (7) Identification of the person(s) determining the employee has successfully completed the training necessary to be considered qualified to perform the tasks identified in (e)(7) of this section; and
- (8) The date that the employee's status as qualified to perform the tasks identified in paragraph (e)(7) of this section expires due to the need for refresher training.

FRA believes that the recordkeeping and notification requirements contained in the rule are the cornerstone of the training and qualification provisions. As FRA is not propounding specific training curriculums or specific experience thresholds, FRA believes that these recordkeeping provisions are vital in ensuring that proper training is being provided to railroad personnel. FRA requires then that railroads maintain specific personnel qualification records, either electronically or in writing, for all personnel (including contract personnel) responsible for the inspection, testing, and maintenance of train brake systems. FRA requires that these records contain detailed information

regarding the training provided, as well as detailed information on the types of equipment the individual is qualified to inspect, test, or maintain and the duties the individual is qualified to perform. Most Class I and larger Class II railroads already keep records of this type; however, they are not always easily obtained by FRA. As an additional means of ensuring that only properly qualified individuals are performing only those tasks for which they are qualified, FRA requires railroads to promptly notify personnel of changes in their qualification status and specifically identify the date that the employees qualification ends unless refresher training is provided.

FRA estimates that the railroad industry (including passenger and commuter railroads) employ approximately 25,000 workers or supervisors responsible for train brake system inspection, test and maintenance.

**Training Records**

FRA estimates that the railroad management will create approximately 67,000 training records a year due to this requirement. It is estimated that it will take approximately eight (8) minutes to prepare each record. Total annual burden for this requirement is 8,933 hours.

		Respondent Universe: 741 railroads
Burden time per response:	8 minutes	
Frequency of Response:	On occasion	
Annual number of Responses:	67,000 records	
Annual Burden Hours:		8,933 hours
Annual Cost:		\$652,109 (\$73 x 8,933 hrs.)

**Calculation:** 67,000 records x 8 min. = 8,933 hours

**Training Notifications**

FRA estimates that the railroad management will issue 67,000 training notifications each year due to this requirement. It is estimated that it will take approximately three (3) minutes for each notification. Total annual burden for this requirement is 3,350 hours.

Respondent Universe:	741 railroads	
Burden time per response:	3 minutes	
Frequency of Response:	On occasion	
Annual number of Responses:	67,000 notifications	
Annual Burden Hours:		3,350 hours
Annual Cost:		\$244,5 50 (\$73 x 3,350 hrs.)

**Calculation:** 67,000 notifications x 3 min. = 3,350 hours

(f) A railroad must adopt and comply with a plan to periodically assess the effectiveness of its training program. One method of validation and assessment could be through the use of efficiency tests or periodic review of employee performance.

**Assessment Plan**

FRA estimates that approximately one (1) validation/assessment plan will be developed by the AAR/ASLRRA and used by all 695 railroads. It is estimated that it will take approximately 40 hours to develop such a plan and approximately one (1) minute per railroad to copy the plan. Total one-time burden for this requirement is 52 hours.

Respondent Universe:	741 railroads
Burden time per response:	40 hours +1 minute

Frequency of Response:	One-time	
One-time number of Responses:	1 plan + 695 copies (AAR/ASLRRRA plan)	
One-time Burden Hours:		52 hours
Annual Cost:	x 40 hrs.+ \$73 x 12 hrs.)	\$5,276 (\$110)

**Calculation:** 1 plan x 40 hrs. + 695 copies x 1 min. = 52 hours

**Amendments to Validation/Assessment Plan**

FRA estimates approximately 50 amendments will be filed annually by the respondents. It is estimated that it will take approximately 20 hours to complete each amendment. Total annual burden this requirement is 1,000 hours.

Respondent Universe:	741 railroads	
Burden time per response:	20 hours	
Frequency of Response:	Annually	
Annual number of Responses:	50 amendments	
Annual Burden Hours:		1,000 hours
Annual Cost:		\$73,000 (\$73 x 1,000 hrs.)

**Calculation:** 50 amendments x 20 hrs. = 1,000 hours

Total annual burden for this entire requirement is 19,395 hours (500 + 5,560 + 8,933 +

3,350 + 52 + 1,000).

**§ 232.205      Class I brake test--Initial terminal inspection.**

When the release is initiated by the controlling locomotive or yard test device, the brakes on each freight car shall be inspected to verify that they did release; this may be performed by a “roll-by” inspection. If a "roll-by" inspection of the brake release is performed, train speed must not exceed 10 MPH and the qualified person performing the “roll-by” inspection must communicate the results of the inspection to the operator of the train. The operator of the train will note successful completion of the release portion of the inspection on the written notification required in paragraph (d) of this section.

The railroad shall ensure that a written or electronic record indicating that the Class I brake test was satisfactorily performed is provided to the locomotive engineer or placed in the cab of the controlling locomotive following the test. The written or electronic record must be retained in the cab of the controlling locomotive until the train reaches its destination and must contain the date, time, number of freight cars inspected, and identify qualified person(s) performing the test and the location where the Class I brake test was performed.

FRA has found that train symbols change when trains are interchanged; crews do not know where trains originated, do not know mileage traveled, and do not know last tests and inspections performed. Without this knowledge of train history, railroads and train crews cannot possibly comply with Federal regulations in some instances. Therefore, FRA modified the language in the current regulation to eliminate this discrepancy, and further enhance the safety of train operations by requiring that an electronic or written record indicating the Class I brake test was satisfactorily performed be kept in the cab of the controlling locomotive. The locomotive engineer may receive the information that a roll-by release inspection has been completed via radio or other means of communication. The locomotive engineer may record the information on the inspection card. The notification must remain in the cab of the locomotive until the train reaches its destination. This modification in the language will ensure that train crews will know when the train they are operating is due attention for testing and inspection purposes, thereby enhancing the continued safe operation of the train.

FRA estimates that approximately 1,646,000 notifications will be written/electronically recorded annually. It is estimated that it will take approximately 45 seconds for each notice. Total annual burden for this requirement is 20,575 hours.

Respondent Universe:	741 railroads
Burden time per response:	45 seconds
Frequency of Response:	On occasion
Annual number of Responses:	1,646,000 notifications



Annual Burden Hours:

20,575  
hours

Annual Cost:

\$1,501,  
975  
(\$73 x  
20,575  
hrs.)

**Calculation:** 1,646,000 notifications x 45 seconds = 20,575 hours

**§ 232.207 Class IA brake tests--1,000-mile inspection.**

- A. Each railroad must designate the locations where Class IA brake tests will be performed; the carrier must furnish to the Federal Railroad Administration upon request a description of each location designated; and must notify in writing FRA's Associate Administrator for Safety 30 days prior to any change in the locations designated for such tests and inspections.

The Class IA brake test in the updated rule clarifies the requirements for performing 1,000-mile brake inspections currently contained in § 232.12(b). The rule makes clear that the most restrictive car or block of cars in the train determines when this inspection must occur on the entire train. FRA also requires that railroads designate the locations where these inspections will be conducted and does not permit a change in those designations without 30-day notice or the occurrence of an emergency situation. The Class II and Class III brake tests in the updated rule essentially clarify the intermediate terminal inspection requirements currently contained in § 232.13(c) and (d) regarding the performance of brake system inspections when cars are added en route or when the train consist is slightly altered en route.

**First Year of Program**

*The burden for the first year of this requirement has already been completed. Consequently, there is no additional burden associated with it.*

**Subsequent Years**

FRA estimates that approximately one (1) designation list will be prepared in subsequent years. It is estimated that each respondent will take approximately one (1) hour prepare this designation list and file it. Total annual burden for this requirement is one (1) hour.

Respondent Universe:	741 railroads	
Burden time per response:	1 hour	
Frequency of Response:	On occasion	
Annual number of Responses:	1 designation list	
Annual Burden Hours:		1 hour
Annual Cost:		
		\$73
		(\$73 x
		1 hr.)

**Calculation:** 1 list x 1 hr. = 1 hour

- B. In the event of an emergency that alters normal train operations such as a derailment or other unusual circumstances that reflect on the safe operation of the train, the railroad is not required to provide prior written notification of a change in the location where a Class IA brake test is performed, provided that the railroad notifies FRA’s Associate Administrator for Safety and the pertinent FRA Regional Administrator within 24 hours after the designation has been changed and the reason for that change.

FRA estimates that approximately 250 notices will be prepared annually due to this requirement. It is estimated that it will take each respondent approximately 10 minutes to prepare the necessary amendment and file it. Total annual burden for this requirement is 42 hours.

Respondent Universe:	741 railroads
Burden time per response:	10 minutes
Frequency of Response:	On occasion

Annual number of Responses:	250 notices	
Annual Burden Hours:	42 hours	
Annual Cost:	42 hrs.)	\$3,066 (\$73 x

**Calculation:** 250 notices x 10 min. = 42 hours

Total annual burden for this entire requirement is 43 hours (1 + 42).

**§ 232.209      Class II brake tests--Intermediate inspection.**

- A. When the release is initiated, the brakes on each car added to the train and on the rear car of the train must be inspected to verify that they did release; this may be performed by a “roll-by” inspection. If a "roll-by" inspection of the brake release is performed, train speed must not exceed 10 MPH and the qualified person performing the “roll-by” inspection must communicate the results of the inspection to the operator of the train.

FRA estimates that approximately 159,740 comments/communications will be made annually under this requirement. It is estimated that it will take each respondent approximately three (3) seconds to make the necessary comment. Total annual burden for this requirement is 133 hours.

Respondent Universe:	741 railroads	
Burden time per response:	3 seconds	
Frequency of Response:	On occasion	
Annual number of Responses:	159,740 comments	
Annual Burden Hours:	133 hours	
Annual Cost:	133 hrs.)	\$9,709 (\$73 x

**Calculation:** 159,740 comments x 3 sec. = 133 hours

- B. Before the train proceeds, the operator of the train shall know that the brake pipe pressure at the rear of freight train is being restored.

*This information is communicated mechanically, and is not a paperwork requirement. Rather, it is a regulatory requirement governing the operation of the train which was mistakenly inserted into earlier submissions. Consequently, there is no burden*

*associated with this provision.*

- C. If an electronic communication link between a controlling locomotive and a remotely controlled locomotive attached to the rear end of a train is utilized to determine that brake pipe pressure is being restored, the operator of the train shall know that the air brakes function as intended on the remotely controlled locomotive.

*Again, this information is communicated mechanically, and is not a paperwork requirement. Rather, it is a regulatory requirement governing the operation of the train which was mistakenly inserted into earlier submissions. Consequently, there is no burden associated with this provision.*

Total annual burden for this entire requirement is 133 hours.

**§ 232.211      Class III brake tests--Trainline continuity inspection.**

- A. Before proceeding, the operator of the train shall know that the brake pipe pressure at the rear of freight train is being restored.

*This information too is communicated mechanically, and is not a paperwork requirement. Rather, it is a regulatory requirement governing the operation of the train which was incorrectly inserted into earlier submissions. Consequently, there is no burden associated with this provision.*

- B. If an electronic or radio communication link between a controlling locomotive and a remotely controlled locomotive attached to the rear end of a train is utilized to determine that brake pipe pressure is being restored, the operator of the train shall know that the air brakes function as intended on the remotely controlled locomotive.

*This information also is communicated mechanically, and is not a paperwork requirement. Rather, it is a regulatory requirement governing the operation of the train which was mistakenly inserted into earlier submissions. Consequently, there is no burden associated with this provision.*

**§ 232.213      Extended haul trains.**

- A. A railroad may be permitted to move a train up to, but not exceeding, 1,500 miles between brake tests and inspections if the railroad designates a train as an extended haul train. In order for a railroad to designate a train as an extended haul train, **all** of the following requirements must be met:

- (1) The railroad must designate the train in writing to FRA's Associate Administrator

for Safety. This designation must include the following:

- (i) The train identification symbol or identification of the location where priority trains will originate and a description of the trains that will be operated as extended haul trains from those locations;
- (ii) The origination and destination points for the train;
- (iii) The type or types of equipment the train will haul; and
- (iv) The locations where all train brake and mechanical inspections and tests will be performed.

This paragraph sets forth the information that must be provided to FRA in writing when designating a train for such operation. The information required to be submitted is necessary to facilitate FRA's ability to independently monitor a railroad's operation of these extended haul trains.

FRA estimates that it will receive approximately 250 designations annually under this requirement. It is estimated that it will take each respondent approximately 15 minutes to prepare their designation letter and forward it to FRA. Total annual burden for this requirement is 63 hours.

Respondent Universe:	83,000 long distance train movements
Burden time per response:	15 minutes
Frequency of Response:	On occasion
Annual number of Responses:	250 designation letters
Annual Burden Hours:	

63  
hours

Annual Cost:

\$4,599  
(\$73 x  
63  
hrs.)

**Calculation:** 250 designation letters x 15 min. = 63 hours

- B. The railroad must maintain a record of all defective, inoperative, or ineffective brakes as well as any conditions not in compliance with Parts 215 and 231 of this chapter discovered at anytime during the movement of the train. These records must be retained for a period of one year and made available to FRA upon request. The records required by this section may be maintained either electronically or in writing.

*As of April 2008, this provision no longer applies. Consequently, there is no burden associated with this requirement.*

Total annual burden for this entire requirement is 63 hours.

#### **Subpart D - Periodic Maintenance and Testing Requirements**

##### **§ 232.303      General Requirements.**

- A. If it is necessary to move a car from the location where the repairs are performed in order to perform a repair track brake test or a single car test required by this part, a tag or card must be placed on both sides of the equipment, or an automated tracking system approved for use by FRA, with the following information about the equipment:
- (i) The reporting mark and car number;
  - (ii) The name of the inspecting railroad;
  - (iii) The location where repairs were performed and date;
  - (iv) Indication whether the car requires a repair track brake test or single car test;
  - (v) The location where the appropriate test is to be performed; and
  - (vi) The name, signature, if possible, and job title of the qualified person approving the move.

The tag or card required by paragraph (e)(1) of this section must remain affixed to the equipment until the necessary test has been performed.

An electronic or written record or copy of each tag or card attached to or removed from a car or locomotive must be retained for 90 days and, upon request, shall be made available within 15 calendar days for inspection by FRA or State inspectors.

The record or copy of each tag or card removed from a freight car or locomotive must

contain the date, location, and the signature of the qualified person removing it from the piece of equipment.

FRA estimates that approximately 2,800 cars will be tagged (on both sides) annually under this requirement. Thus, approximately 5,600 tags will be completed. It is estimated that will take approximately five (5) minutes to complete each tag. Total annual burden for this requirement is 467 hours.

Respondent Universe:	1,600,000 freight cars
Burden time per response:	5 minutes
Frequency of Response:	On occasion
Annual number of Responses:	5,600 tags
Annual Burden Hours:	467 hours
Annual Cost:	\$33,624 (\$72 x 467 hrs.)

**Calculation:** 5,600 tags x 5 min. = 467 hours

- B. The location and date of the last repair track brake test or single car test required by § 232.305 must be clearly stenciled, marked, or labeled in two-inch high letters or numerals on the side of the equipment. Alternatively, the railroad may use an electronic or automated tracking system to track the required information and the performance of the tests required by § 232.305.

Electronic or automated tracking systems used to meet the requirement contained in this paragraph may be 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 the railroad's ability to utilize an electronic or automated tracking system in lieu of stenciling or marking if FRA finds that the electronic or automated tracking system is not properly secure; is inaccessible to FRA or railroad employees; or fails to adequately track and monitor the equipment. Such a determination will be made in writing and will state the basis for such action.

FRA estimates that approximately 240,000 cars will need stenciling annually under this requirement. It is estimated that each stencil will take approximately five (5) minutes. Total annual burden for this requirement is 20,000 hours.

Respondent Universe:	1,600,000
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		freight cars
Burden time per response:		5 minutes
Frequency of Response:		On occasion
Annual number of Responses:	240,000 stencilings	
Annual Burden Hours:	20,000 hours	
Annual Cost:		\$1,440,000
	(\$72 x 20,000 hrs.)	

**Calculation:** 240,000 stencilings x 5 min. = 20,000 hours

Total annual burden for this entire requirement is 20,467 hours (467 + 20,000).

**§ 232.305     Single Car tests.**

Single car tests must be performed by a qualified person in accordance with either Section 3.0, “Tests-Standard Freight Brake Equipment,” and Section 4.0, “Special Tests,” of the Association of American Railroads Standard S-486-04, “Code of Air Brake System Tests for Freight Equipment,” contained in the *AAR Manual of Standards and Recommended Practices, Section E*, (January 1, 2004); an alternative procedure approved by FRA pursuant to § 232.17; or a modified procedure approved in accordance with the provisions contained in § 232.307. *(Note: The burdens for alternative procedures and modified procedures, are included under that of § 232.17 and § 232.307, respectively. Consequently, there is no additional burden associated with these requirements.)*

FRA estimates that approximately 240,000 cars will require a single car test each year. Test results have to be entered into AAR’s electronic recordkeeping system called UMLER (Uniform Machine Language Equipment Register). It is estimated that it takes approximately 60 minutes to conduct the test and record the results in UMLER. Total annual burden for this requirement is 240,000 hours.

Respondent Universe:		1,600,000 freight cars
Burden time per response:		60 minutes
Frequency of Response:		Annually



Annual number of Responses:	240,000 tests/records	
Annual Burden Hours:		240,000 hours
Annual Cost:		\$17,280,000 (\$72 x 240,000 hrs.)

**Calculation:** 240,000 tests/records x 60 min. = 240,000 hours

**§232.307 Modification of the single car air brake test procedures.**

(a) Request. The AAR or other authorized representative of the railroad industry may seek modification of the single car air brake test procedures prescribed in § 232.305(a). The request for modification must be submitted in triplicate to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey, S.E., Washington, D.C. 20590 and must contain: (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the modification; (2) The modification, in detail, to be substituted for a particular procedure prescribed in § 232.305(a); (3) Appropriate data or analysis, or both, for FRA to consider in determining whether the modification will provide at least an equivalent level of safety; and (4) A statement affirming that the railroad industry has served a copy of the request on the designated representatives of the employees responsible for the equipment's operation, inspection, testing, and maintenance under this part, together with a list of the names and addresses of the persons served.

FRA estimates that it will receive approximately one (1) modification request each year with the necessary data and/or analysis under the above requirement. It is estimated that it will take approximately 20 hours to complete each request, and approximately five (5) minutes to complete each required copy of the request. Total annual burden for this requirement is 20 hours.

Respondent Universe:	AAR
Burden time per response:	20

		hours + 5 minutes
Frequency of Response:		Annually
Annual number of Responses:	1 modification request + 3 copies	
Annual Burden Hours:		20 hours
Annual Cost:		
		\$1,460 (\$73 x 20 hrs.)

**Calculation:** 1 modification req. x 20 hrs. + 3 copies x 5 min. = 20 hrs.

Additionally, FRA estimates that approximately one (1) statement affirming that requests copies have been served to the designated representatives of the employees responsible for the equipment's operation, inspection, testing, and maintenance and four (4) modification request copies will be completed under the above requirement. It is estimated that it will take approximately 30 minutes to complete each affirmative statement and approximately five (5) minutes to copy and send the modification request. Total annual burden for this requirement is one (1) hour.

Respondent Universe:		AAR
Burden time per response:		30 minute s + 5 minute s
Frequency of Response:		Annually
Annual number of Responses:	1 statement + 4 copies	

Annual Burden Hours:

1 hour

Annual Cost:

\$73  
(\$73 x  
1 hr.)

**Calculation:**

1  
statem  
ent x  
30  
min. +  
4  
copies  
x 20  
min. =  
1 hour

(b) Federal Register document. Upon receipt of a request for modification, FRA will publish a document in the **Federal Register** containing the requested modification. The document will permit interested parties 60 days to comment on any requested modification.

FRA estimates that it will receive approximately two (2) comments regarding modification requests under the above requirement. It is estimated that it will take approximately eight (8) hours to complete each comment. Total annual burden for this requirement is 16 hours.

Respondent Universe:

RR  
Industr  
y/Gen.  
Public/  
Int.

Burden time per response:		Parties 8 hours
Frequency of Response:		On occasion
Annual number of Responses:	2 comments	
Annual Burden Hours:		16 hours
Annual Cost:		
		\$1,168 (\$73 x 16 hrs.)

<b><u>Calculation:</u></b>		2 comme nts x 8 hrs. = 16 hours
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Total annual burden for this entire requirement is 37 hours (20 + 1 + 16)

**§ 232.309      Repair track brake test and single car test equipment and devices.**

- (a) Equipment and devices used to perform single car air brake tests must be tested for correct operation at least once each calendar day of use.
- (b) Except for single car test devices, mechanical test devices such as pressure gauges, flow meters, orifices, etc., must be calibrated once every 92 days.

- (c.) Electronic test devices must be calibrated at least once every 365 days.
- (d) Test equipment and single car test devices placed in service must be tagged or labeled with the date its next calibration is due.
- (e) Each single car test device must be tested not less frequently than every 92 days after being placed in service and may not continue in service if more than one year has passed since its last 92 day test.
- (f) Each single car test device must be disassembled and cleaned not less frequently than every 365 days after being placed in service.

FRA is requiring that mechanical devices and gauges be tested and calibrated every 92 days; whereas, electronic gauges and devices appear to have much less exposure to many of the hazards encountered by mechanical devices and gauges and tend to be much more reliable and accurate for a longer period of time. Consequently, FRA only requires electronic yard test devices and gauges to be tested and/or calibrated on an annual basis.

FRA estimates that approximately 5,000 calibration tests will be performed annually. It is estimated that each test will take approximately 30 minutes to perform the test and record the results. Total annual burden for this requirement is 2,500 hours.

Respondent Universe:	640 shops	
Burden time per response:	30 minutes	
Frequency of Response:	Annually	
Annual number of Responses:	5,000 tests	
Annual Burden Hours:		2,500 hours

Annual Cost:		\$180,000 (\$72 x 2,500 hrs.)
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**Calculation:** 5,000 tests x 30 min. = 2,500 hours

**Subpart E - End-of-Train Devices**

**§ 232.403     Design standards for one-way end-of-train devices.**

Rear unit. The rear unit must be capable of determining brake pipe pressure on the rear car and transmitting that information to the front unit for display to the locomotive engineer.

*This information is communicated mechanically, and is not a paperwork requirement. Rather, it is a regulatory requirement governing the operation of the train which was mistakenly inserted into earlier submissions. Consequently, there is no burden associated with this provision.*

Unique code. Each rear unit must have a unique and permanent identification code that is transmitted along with the pressure message to the front-of-train unit. A code obtained from the Association of American Railroads (AAR), 50 F Street, NW., Washington, DC 20036, shall be deemed to be a unique code for purposes of this section. A unique code also may be obtained from the Office of Safety Assurance and Compliance (RRS-10), Federal Railroad Administration, Washington, D.C. 20590.

FRA estimates that approximately 12 unique code requests will be received annually under this requirement. It is estimated that it will take approximately five (5) minutes for each request. Total annual burden for this requirement is one (1) hour.

Respondent Universe:	245 railroads
Burden time per response:	5 minutes
Frequency of Response:	On occasion
Annual number of Responses:	12 requests
Annual Burden Hours:	1 hour

Annual Cost:

\$73  
(\$73 x 1 hr.)

**Calculation:** 12 requests x 5 min. = 1 hour

**§ 232.405      Design and performance standards for two-way-end-of-train devices.**

- A. The rear unit of the device shall send an acknowledgment message to the front unit immediately upon receipt of an emergency brake application command. The front unit shall listen for this acknowledgment and repeat the brake application command if the acknowledgment is not correctly received.

*This information is communicated mechanically, and is not a paperwork requirement. Rather, it is a regulatory requirement governing the operation of the train which was mistakenly inserted into earlier submissions. Consequently, there is no burden associated with this provision.*

- B. The front unit shall have a manually operated switch which, when activated, shall initiate an emergency brake transmission command to the rear unit, or the locomotive shall be equipped with a manually operated switch on the engineer control stand designed to perform the equivalent function. The switch must be labeled "Emergency" and must be protected so that there will exist no possibility of accidental activation.

*NOTE: This is not a paperwork requirement since we provide the railroads with the words that they must stencil.*

**§ 232.407      Operations requiring use of two-way end-of-train devices; prohibition on purchase of nonconforming devices.**

The helper locomotive engineer must initiate and maintain two-way voice radio communication with the engineer on the head end of the train; this contact must be verified just prior to passing the crest of the grade.

FRA estimates that there approximately 50,000 communications will take place annually due to this requirement. It is estimated that each communication will take approximately 30 seconds. Total annual burden for this requirement is 417 hours.

Respondent Universe:	245 railroads
Burden time per response:	30 seconds
Frequency of Response:	On occasion
Annual number of Responses:	50,000 communications
Annual Burden Hours:	

417  
hours

Annual Cost:

\$30,858 (\$74 x 417 hrs.)

**Calculation:** 50,000 communications x 30 seconds = 417 hours

**§ 232.409 Inspection and testing of end-of-train devices.**

- A. A two-way end-of-train device must be tested at the initial terminal or other point of installation to ensure that the device is capable of initiating an emergency power brake application from the rear of the train. If this test is conducted by a person other than a member of the train crew, the locomotive engineer must be notified that a successful test was performed. The notification required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the notification must be maintained in the cab of the locomotive and must include the date and time of the test, the location where the test was performed, and the name of the person conducting the test.

FRA requires that the locomotive engineer be informed in an appropriate way determined by the railroad when the required tests and inspections are performed by a person other than a train crew member. FRA requires that a record, either electronic or written, of the notification be kept in the cab of the locomotive, and that this notification include the date and time of the test, the location where the test was performed, and the name of the person performing the test.

FRA estimates that this will happen in approximately 75% of the tests to be performed annually or 447,500 times a year. Per test, it is estimated that it will take approximately 30 seconds for the person to inform the locomotive engineer (whether verbally or in writing) that the two-way end-of-train devices have been tested. Total annual burden for this requirement is 3,729 hours.

Respondent Universe:	245 railroads	
Burden time per response:		30 seconds



Frequency of Response:

On  
Occasion

Annual number of Responses: 447,500 notices/records

Annual Burden:

3,729  
hours

Annual Cost:

\$268,4  
88  
(\$72 x  
3,729  
hrs.)

**Calculation:** 447,500 notices/records x 30 sec. = 3,729 hours

- B. The telemetry equipment must be tested for accuracy and calibrated if necessary according to the manufacturer's specifications and procedures at least every 365 days. This must include testing radio frequencies and modulation of the device. The date and location of the last calibration or test, as well as the name of the person performing the calibration or test, must be legibly displayed on a weather-resistant sticker or other marking device affixed to the outside of both the front unit and the rear unit; however, if the front unit is an integral part of the locomotive, then the above information may be recorded on Form FRA F6180.49A, provided the serial number of the unit is recorded.

It is estimated that approximately 1,350 end-of-train devices will need to be calibrated annually. FRA estimates that it will take approximately one (1) minute per unit to record the date of the last calibration, the location where the calibration was made, and the name of the person doing the calibration on a sticker and affix the sticker outside of the front and rear unit. Total annual burden is 23 hours.

Respondent Universe:

245  
railroads

Burden time per response: 1  
minute

Frequency of Response: Annually

Annual number of Responses: 1,350 marked units  
Annual Burden:

23  
hours

Annual Cost:

\$1,656  
(\$72 x  
23  
hrs.)

**Calculation:** 1,350 marked units x 1 min. = 23 hours

Total annual burden for this entire requirement is 3,752 hours (3,729 + 23)

**Subpart F - Introduction of New Brake System Technology**

**§ 232.503      Process to introduce new brake system technology.**

- A. Pursuant to the procedures contained in § 232.17, each railroad must obtain special approval from the FRA Associate Administrator for Safety of a pre-revenue service acceptance testing plan, developed pursuant to § 232.505, for the new brake system technology, prior to implementing the plan.

This section makes clear that the approval of FRA’s Associate Administrator for Safety must be obtained by a railroad prior to the railroad’s implementation of a pre-revenue service acceptance test plan and before introduction of new brake system technology into revenue service.

FRA estimates that it will receive approximately one (1) letter requesting approval annually under this requirement. It is estimated that it will take approximately one (1) hour to complete such an approval letter. Total annual burden for this requirement is one (1) hour.

Respondent Universe:	741 railroads
Burden time per response:	1 hour
Frequency of Response:	On occasion
Annual number of Responses:	1 letter
Annual Burden Hours:	1 hour
Annual Cost:	
	\$73
	(\$73 x 1 hr.)

**Calculation:** 1 letter x 1 hour = 1 hour

- B. Each railroad must complete a pre-revenue service demonstration of the new brake system technology in accordance with the approved plan; must fulfill all of the other requirements prescribed in § 232.505; and must obtain special approval from the FRA Associate Administrator for Safety under the procedures of § 232.17 prior to using such brake system technology in revenue service.

FRA estimates that it will receive approximately one (1) request every 3 years. It is estimated that it will take the railroad approximately 10 hours to prepare its request and submit it to FRA. Total annual burden for this requirement is three (3) hours (1 x 10 hours ÷ 3 = 3 hours annually).

Estimated number of requests	1
Average hours per request	$\frac{3}{1}$
Estimated annual burden hours	3

Respondent Universe:	741 railroads
Burden time per response:	3 hours
Frequency of Response:	On occasion
Annual number of Responses:	1 request
Annual Burden Hours:	

3 hours

Annual Cost:

\$219  
(\$73 x  
3 hrs.)

**Calculation:** 1 request x 3 hours = 3 hours

Total annual burden for this entire requirement is four (4) hours (1 + 3).

**§ 232.505    Pre-revenue service acceptance testing plan.**

- A. Except as provided in paragraph (f) of this section, before using a new brake system technology for the first time on its system, the operating railroad or railroads must submit a pre-revenue service acceptance testing plan containing the information required by

paragraph (e) of this section and obtain the approval of the FRA Associate Administrator for Safety under the procedures specified in § 232.17.

For equipment that has not previously been used in revenue service in the United States, paragraph (a) of this section requires the operating railroad to develop a pre-revenue service acceptance testing plan and to obtain FRA approval of the plan under the procedures stated in § 232.17 before beginning testing.

After receiving FRA approval of the pre-revenue service testing plan and before introducing the new brake system technology into revenue service, the operating railroad or railroads must: (1) Adopt and comply with such FRA-approved plan, including fully executing the tests required by the plan; (2) Report to the FRA Associate Administrator for Safety the results of the pre-revenue service acceptance tests; and (3) Correct any safety deficiencies identified by FRA in the design of the equipment or in the inspection, testing, and maintenance procedures or, if safety deficiencies cannot be corrected by design or procedural changes, agree to comply with an operational limitations that may be imposed by the Associate Administrator for Safety on the revenue service operation of the equipment; and (4) Obtain FRA approval to place the new brake system technology in revenue service. The plan must be made available to FRA for inspection and copying upon request.

The plan must include all of the following elements:

- (1) An identification of each waiver, if any, of FRA or other Federal safety regulations required for the tests or for revenue service operation of the equipment.
- (2) A clear statement of the test objectives. One of the principal test objectives must be to demonstrate that the equipment meets the safety design and performance requirements specified in this Part when operated in the environment in which it is to be used.
- (3) A planned schedule for conducting the tests.
- (4) A description of the railroad property or facilities to be used to conduct the tests.
- (5) A detailed description of how the tests are to be conducted. This description must include:
  - (i) An identification of the equipment to be tested;
  - (ii) The method by which the equipment is to be tested;
  - (iii) The criteria to be used to evaluate the equipment's performance;

and

- (iv) The means by which the test results are to be reported to FRA.
- (6) A description of any special instrumentation to be used during the tests.
- (7) A description of the information or data to be obtained.
- (8) A description of how the information or data obtained is to be analyzed or used.
- (9) A description of any criteria to be used as safety limits during the testing.
- (10) A description of the criteria to be used to measure or determine the success or failure of the tests. If acceptance is to be based on extrapolation of less than full level testing results, the analysis to be done to justify the validity of the extrapolation must be described.
- (11) A description of any special safety precautions to be observed during the testing.
- (12) A written set of standard operating procedures to be used to ensure that the testing is done safely.
- (13) Quality control procedures to ensure that the inspection, testing, and maintenance procedures are followed.
- (14) Criteria to be used for the revenue service operation of the equipment.
- (15) A description of any testing of the equipment that has previously been performed, if any.

**First Year of Program**

*The burden for the first year of this requirement has already been completed. Consequently, there is no additional burden associated with this requirement.*

**Subsequent Years**

FRA estimates that it will receive approximately one (1) maintenance procedure in subsequent years. It is estimated that it will take the railroad approximately 160 hours to prepare this maintenance procedure. Total annual burden for this requirement is 160 hours.

Estimated number of respondents

1

	Average hours per maintenance procedure
	<u>160</u>
Estimated annual burden hours	160
Respondent Universe:	695 railroads
Burden time per response:	160 hours
Frequency of Response:	On occasion
Annual number of Responses:	1 maintenance procedure
Annual Burden Hours:	160 hours
Annual Cost:	\$11,680 (\$73 x 160 hrs.)

**Calculation:** 1 maintenance procedure x 160 hours = 160 hours

### Amendments

FRA estimates that it will receive approximately one (1) amended maintenance procedure in subsequent years. It is estimated that it will take the railroad approximately 40 hours to prepare this maintenance procedure. Total annual burden for this requirement is 40 hours.

Estimated number of respondents	1
	Average hours per maintenance procedure
	<u>40</u>
Estimated annual burden hours	40
Respondent Universe:	655 railroads
Burden time per response:	40 hours
Frequency of Response:	On occasion
Annual number of Responses:	1 maintenance procedure
Annual Burden Hours:	40 hours
Annual Cost:	\$2,920 (\$73 x 40 hrs.)

**Calculation:** 1 maintenance procedure x 40 hours = 40 hours

FRA estimates that it will receive approximately one (1) design description every three (3) years. It is estimated that it will take the railroad approximately 200 hours to create a new design requirement for new train brake system technology. Total annual burden for this requirement is 67 hours (1 x 200 hours ÷ 3 years = 67 hours annually).

Estimated number of petitions		1	
Average hours per petition			<u>67</u>
Estimated annual burden hours		67	
Respondent Universe:		741 railroads	
Burden time per response:		67 hours	
Frequency of Response:		On occasion	
Annual number of Responses:	1 petition		
Annual Burden Hours:		67 hours	
Annual Cost:			\$4,891 (\$73 x
	67 hrs.)		

**Calculation:** 1 petition x 67 hours = 67 hours

- B. Report to the FRA Associate Administrator for Safety the results of the pre-revenue service acceptance tests.

FRA estimates that approximately one (1) railroad will incorporate new train brake system technology every three (3) years. It is estimated that it will take the railroad approximately 40 hours to prepare, review, and submit its report to FRA analyzing the results of its pre-revenue service tests. Total annual burden for this requirement is 13 hours. (1 report x 40 hours ÷ 3 years = 13 hours).

Estimated number of reports		1	
Average hours per report			13
Estimated annual burden hours		13	
Respondent Universe:		695 railroads	
Burden time per response:		13 hours	
Frequency of Response:		On occasion	
Annual number of Responses:	1 report		
Annual Burden Hours:			13
			hours
Annual Cost:			\$949
			(\$73 x
			13
			hrs.)



**Calculation:** 1 report x 13 hours = 13 hours

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

FRA estimates that approximately one (1) description will be sent to FRA under this requirement. It is estimated that it will take each railroad approximately 40 hours to prepare, and send the testing description. Total annual burden for this requirement is 40 hours.

Respondent Universe:	741 railroads	
Burden time per response:	40 hours	
Frequency of Response:	On occasion	
Annual number of Responses:	1 description	
Annual Burden Hours:	40 hours	
Annual Cost:		\$2,920 (\$73 x 40 hrs.)

**Calculation:** 1description x 40 hours = 40 hours

Total annual burden for this entire requirement is 320 hours (160 + 40 + 67 + 13 + 40).

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

- A. **General.** A freight car or freight train equipped with an ECP brake system must, at a minimum, meet the Association of American Railroads (AAR) standards contained in the AAR Manual of Standards and Recommended Practices related to ECP brake systems listed in this section (§ 232.603(a)); an alternate standard approved by FRA pursuant to § 232.17; or a modified standard approved in accordance with the provisions contained in paragraph (f) of this section. (*Note: The burden for modified ECP brake system standards approved in accordance with § 232.603(f) is covered in the last paperwork requirement of this section.*)

Section 232.17 stipulates that each petition for an alternative standard or test procedure 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 alternative standard or test procedure proposed, in detail, to be submitted for or to meet the particular requirement of this part; (3) Appropriate data or analysis, or both, for FRA to consider in determining whether the alternative standard or test procedure will provide at least an equivalent level of safety or otherwise meet the requirements contained in this part; and (4) A statement affirming that the railroad has served a copy of the petition on designated representatives of its employees, together with a list of the names and addresses of the persons served.

*FRA estimates that approximately zero (0) alternate ECP brake system standards will be submitted to FRA under the above requirement. Consequently, there is no burden associated with this provision.*

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

*The burden for this requirement is included under that of § 232.17 above. Consequently, there is no additional burden associated with this requirement.*

- C. Configuration management. A railroad operating a freight train or freight car equipped with ECP brake systems must adopt and comply with the configuration management plan developed in accordance with the AAR standards incorporated by reference in this section (232.603). FRA reserves the right to audit a manufacturer’s configuration management plan at any time.

*This requirement has already been completed by the relevant railroads. Consequently, there is no additional burden associated with this requirement.*

### **Subsequent Years**

FRA estimates that approximately one (1) configuration management plans will be periodically updated (by railroads) to maintain currency under the above requirement. It is estimated that it will take approximately 60 hours to update these plans submit them to FRA. Total annual burden for this requirement is 60 hours.

Respondent Universe:	4 railroads
Burden time per response:	60 hours
Frequency of Response:	On occasion

One-time number of Responses: 1 updated plan  
One-time Burden Hours:

60  
hours

Annual Cost:

\$4,380  
(\$73 x  
60  
hrs.)

**Calculation:** 1 updated plan x 60 hrs. = 60 hours

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

*FRA estimates that it will receive zero (0) exception requests under the above requirement. Consequently, there is no burden associated with this requirement.*

FRA's Associate Administrator (for Safety) may revoke such exception in writing after providing an opportunity for responses by affected parties.

*Since FRA estimates that it will receive zero exception requests, no exceptions will be revoked by the Associate Administrator under the above requirement. Consequently, there is no additional burden associated with this requirement.*

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

Section 232.307 stipulates that the request for modification must be submitted in triplicate to the Associate Administrator for Safety, Federal Railroad Administration,

1200 New Jersey Ave. SE, Washington, DC 20590 and must contain: (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the modification; (2) The modification, in detail, to be substituted for a particular procedure prescribed in § 232.305(a); (3) Appropriate data or analysis, or both, for FRA to consider in determining whether the modification will provide at least an equivalent level of safety.

FRA estimates that it will receive approximately one (1) request each year to modify the standards contained in AAR Manual of Standards and Recommended Practices related to ECP brake systems listed in this section (§ 232.603(a)). It is estimated that it will take approximately eight (8) hours to complete the modification request and five (5) minutes each to make the two additional copies to submit the request in triplicate to FRA. Total annual burden for this requirement is eight (8) hours.

Respondent Universe:	4 railroads
Burden time per response:	8 hours + 5 minutes
Frequency of Response:	On occasion
One-time number of Responses:	1 modification request + 2 copies
One-time Burden Hours:	
	8 hours

Annual Cost:	
	\$584
	(\$73 x
	8 hrs.)

**Calculation:** 1 modification request x 8 hrs. + 2 copies x 5 min. = 8 hours

(4) A statement affirming that the railroad industry has served a copy of the request on the designated representatives of the employees responsible for the equipment's operation, inspection, testing, and maintenance under this part, together with a list of the names and addresses of the persons served.

FRA estimates that approximately four (4) affirmative statements will be completed and six (6) copies of the modification request will be served by each of the four railroads on

the designated representatives of the employees responsible for the ECP brake system equipment's operation, inspection, testing, and maintenance under this requirement. It is estimated that it will take approximately 60 minutes to complete each affirmative statement and approximately five (5) minutes to complete each modification request copy. Total burden for this requirement is six (6) hours.

Respondent Universe:	4 railroads
Burden time per response:	60 minutes + 5 minutes
Frequency of Response:	On occasion
One-time number of Responses:	4 affirmative statements + 24 modification request copies
One-time Burden Hours:	6 hours
Annual Cost:	\$438 (\$73 x 6 hrs.)

**Calculation:** 4 affirmative statements x 60 min. + 24 req. x 5 min. = 6 hrs

Further, § 232.307 says that, upon receipt of a request for modification, FRA will publish a document in the **Federal Register** containing the requested modification. Interested parties then have 60 days to comment on any requested modification. FRA estimates that approximately four (4) comments will be sent to the agency under the above requirement, and that it will take approximately two (2) hours to complete each comment. Total annual burden for this requirement is eight (8) hours.

Respondent Universe:	Public/Interested Parties
Burden time per response:	2 hours
Frequency of Response:	On occasion
One-time number of Responses:	4 comments on modification requests
One-time Burden Hours:	8 hours
Annual Cost:	\$584 (\$73 x 8 hrs.)

**Calculation:** 4 comments x 2 hrs. = 8 hours

Total annual burden for this entire requirement is 82 hours (60 + 8 + 6 + 8).

**§ 232.605 Training requirements.**

(a) Inspection, Testing and Maintenance. A railroad that operates a freight car or freight train equipped with an ECP brake system and each contractor who performs inspection, testing, or maintenance on a freight car or freight train equipped with an ECP brake system must adopt and comply with a training, qualification, and designation program for

its employees who perform inspection, testing or maintenance of ECP brake systems. The training program required by this section shall meet the requirements in § 232.203(a), (b), (e), and (f).

*FRA estimates that there are zero (0) training programs being developed at this time. Consequently, there is no additional burden associated with this requirement.*

Additionally, under § 232.203(b), as part of developing the above required program, the railroad or contractor must: (3) Require all employees to successfully complete a training curriculum that covers the skills and knowledge the employee will need to possess in order to perform the tasks required by this part that the employee will be responsible for performing, including the specific Federal regulatory requirements contained in this part related to the performance of a task for which the employee will be responsible; (4) Require all employees to pass a written or oral examination covering the skills and knowledge the employee will need to possess in order to perform the tasks required by this part that the employee will be responsible for performing, including the specific Federal regulatory requirements contained in this part related to the performance of a task for which the employee will be responsible for performing; and (5) Require all employees to individually demonstrate "hands-on" capability by successfully applying the skills and knowledge the employee will need to possess in order to perform the tasks required by this part that the employee will be responsible for performing to the satisfaction of the employee's supervisor or designated instructor. (6) An employee hired or working prior to June 1, 2001, for a railroad or contractor covered by this part will be considered to have met the requirements, or a portion of the requirements, contained in paragraphs (b)(3) through (b)(5) of this section if the employee receives training and testing on the specific Federal regulatory requirements contained in this part related to the performance of the tasks which the employee will be responsible for performing; and if: (i) The training or testing, including efficiency testing, previously received by the employee is determined by the railroad or contractor to meet the requirements, or a portion of the requirements, contained in paragraphs (b)(3) through (b)(5) of this section and such training or testing can be documented as required in paragraphs (e)(1) through (e)(4) of this section; (ii) The employee passes an oral, written, or practical, "hands-on" test developed or adopted by the railroad or contractor which is determined by the railroad or contractor to ensure that the employee possesses the skills and knowledge, or a portion of the skills or knowledge, required in paragraphs (b)(3) through (b)(5) of this section and the test is documented as required in paragraph (e) of this section; or (iii) The railroad or contractor certifies that a group or segment of its employees has previously received training or testing determined by the railroad or contractor to meet the requirements, or a portion of the requirements, contained in paragraphs (b)(3) through (b)(5) of this section and complete records of such training are not available, provided the following conditions are satisfied: (A) The certification is placed in the employee's training records required in paragraph (e) of this section; (B) The certification contains a

brief description of the training provided and the approximate date(s) on which the training was provided; and (C) Any employee determined to be trained pursuant to this paragraph is given a diagnostic oral, written, or "hands-on" test covering that training for which this paragraph is relied upon at the time the employee receives his or her first periodic refresher training under paragraph (b)(8) of this section. (iv) Any combination of the training or testing contained in paragraphs (b)(6)(i) through (b)(6)(iii) of this section and paragraphs (b)(3) through (b)(5) of this section. (7) Require supervisors to exercise oversight to ensure that all the identified tasks are performed in accordance with the railroad's written procedures and the specific Federal regulatory requirements contained in this part; (8) Require periodic refresher training, at an interval not to exceed three years, that includes classroom and "hands-on" training, as well as testing; except that employees that have completed their initial training under paragraphs (b)(3) through (b)(6) of this part prior to April 1, 2004, shall not be required to complete their first periodic refresher training until four years after the completion of their initial training, and every three years thereafter. Observation and evaluation of actual performance of duties may be used to meet the "hands-on" portion of this requirement, provided that such testing is documented as required in paragraph (e) of this section; and (9) Add new brake systems to the training, qualification and designation program prior to its introduction to revenue service.

Over the anticipated 10-year implementation period of the final rule, FRA estimates approximately 1,602 employees – 748 railroad inspectors and 854 conductors/locomotive engineers – will successfully complete the initial ECP training curriculum each year, including passing a written or oral exam under the above requirement. It is estimated that training classes will be conducted in groups of 25. Thus, there will be a total of approximately six (6) training classes for railroad inspectors and approximately seven (7) training classes for conductors/locomotive engineers. It is estimated that it will take approximately eight (8) hours to initially train railroad inspectors and 24 hours to initially train conductors/locomotive engineers. Total annual burden for this requirement is 26,480 hours.

Respondent Universe:	1 railroad
Burden time per response:	8 hours + 24 hours
Frequency of Response:	One-time
One-time number of Responses:	1,602 ECP trained employees
One-time Burden Hours:	26,480 hours
Annual Cost:	\$1,933,040 (\$73 x 26,480 hrs.)

**Calculation:** 748 insp. x 8 hrs. + 854 conductor/engineers. x 24 hrs. = 26,480 hours

Subsequent Years

Additionally, FRA estimates these 1,602 employees – 748 railroad inspectors and 854 conductors/locomotive engineers – will also receive ECP annual training. Again, it is estimated that training classes will be conducted in groups of 25 and that there will be a total of approximately six (6) training classes for railroad inspectors and approximately seven (7) training classes for conductors/locomotive engineers. It is estimated that it will take approximately one (1) hour to conduct/complete the annual training for railroad inspectors and approximately eight (8) hours to conduct/complete the annual training for train conductors/locomotive engineers. Total annual burden for this requirement is 7,580 hours.

Respondent Universe:	1 railroad
Burden time per response:	1 hour + 8 hours
Frequency of Response:	One-time
One-time number of Responses:	1,602 ECP trained employees
One-time Burden Hours:	7,580 hours
Annual Cost:	\$553,340 (\$73 x 7,580 hrs.)

**Calculation:** 748 insp. x 1 hr. + 854 trained conductors/engineers x 8 hrs. = 7,580 hours

Further, under § 232.203(e), a railroad or contractor must maintain adequate records to demonstrate the current qualification status of all of its personnel assigned to inspect, test, or maintain a train brake system. The records required by this paragraph may be maintained either electronically or in writing and must be provided to FRA upon request. These records must include the following information concerning each such employee: (1) The name of the employee; (2) The dates that each training course was completed; (3) The content of each training course successfully completed; (4) The employee's scores on each test taken to demonstrate proficiency; (5) A description of the employee's "hands-on" performance applying the skills and knowledge the employee needs to possess in order to perform the tasks required by this part that the employee will be responsible for performing and the basis for finding that the skills and knowledge were successfully demonstrated; (6) The tasks required to be performed under this Part which the employee is deemed qualified to perform; and (7) Identification of the person(s) determining that the employee has successfully completed the training necessary to be considered qualified to perform the tasks identified in paragraph (e)(7) of this section. (8) The date that the employee's status as qualified to perform the tasks identified in paragraph (e)(7) of this section expires due to the need for refresher training.

FRA estimates approximately 1,602 records will be created/amended relating to the initial ECP training and qualifications records under the above requirement. It is estimated that it will take approximately eight (8) minutes to complete each record. Total



burden for this requirement is 214 hours.

Respondent Universe:	2 railroads	
Burden time per response:	8 minutes	
Frequency of Response:	On occasion	
One-time number of Responses:	1,602 ECP records	
One-time Burden Hours:	214 hours	
Annual Cost:		\$15,622 (\$73
	x 214 hrs.)	

**Calculation:** 1,602 ECP records x 8 min. = 214 hours

Subsequent Years (Records)

FRA estimates approximately 1,602 records will be updated relating to the recurring ECP training and qualifications records under the above requirement. It is estimated that it will take approximately four (4) minutes to complete each record. Total burden for this requirement is 107 hours.

Respondent Universe:	2 railroads	
Burden time per response:	4 minutes	
Frequency of Response:	On occasion	
One-time number of Responses:	1,602 ECP records	
One-time Burden Hours:	107 hours	
Annual Cost:		\$7,811 (\$73 x
	107 hrs.)	

**Calculation:** 1,602 ECP records x 4 min. = 107 hours

Finally, under § 232.203(f), a railroad or contractor must adopt and comply with a plan to periodically assess the effectiveness of its training program. One method of validation and assessment could be through the use of efficiency tests or periodic review of employee performance.

FRA estimates approximately one (1) ECP plan will be developed/amended to existing plans under the above requirement. It is estimated that it will take each railroad approximately 40 hours to develop such a plan/amend the existing plan. Total burden for this requirement is 40 hours.

Respondent Universe:	2 railroads	
Burden time per response:	40 hours	
Frequency of Response:	One-time	
One-time number of Responses:	1 ECP plan	

One-time Burden Hours:	40 hours	
Annual Cost:		\$2,920 (\$73 x
	40 hrs.)	

**Calculation:** 1 amended ECP plan x 40 hrs. = 40 hours

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

FRA estimates approximately one (1) written operating rules regarding safe train handling procedures of ECP brake systems and equipment will be amended under the above requirement. It is estimated that it will take each railroad approximately 24 hours to amend its written operating rules. Total burden for this requirement is 24 hours.

Respondent Universe:	2 railroads	
Burden time per response:	24 hours	
Frequency of Response:	One-time	
One-time number of Responses:	1 ECP amended operating rule	
One-time Burden Hours:	24 hours	
Annual Cost:		\$1,752 (\$73 x
	24 hrs.)	

**Calculation:** 1 ECP amended operating rule x 24 hrs. = 24 hours

(c) Locomotive Engineers. A railroad operating a freight car or freight train equipped with an ECP brake system must adopt and use in its training program under part 240 specific knowledge, skill, and ability criteria to ensure that its locomotive engineers are fully trained with the operating rules governing safe train handling procedures related to ECP brake systems and equipment under all operating conditions and tailored to the specific equipment and territory of the railroad.

FRA estimates approximately one (1) locomotive engineer certification programs will be amended to include ECP brake systems and equipment specific knowledge, skill, and ability criteria under the above requirement. It is estimated that it will take each railroad approximately 40 hours to amend their certification programs. Total burden for this requirement is 40 hours.

Respondent Universe:	2 railroads	
Burden time per response:	40 hours	
Frequency of Response:	One-time	
One-time number of Responses:	1 amended locomotive engineer	

One-time Burden Hours:	certification programs 40 hours	
Annual Cost:	40 hrs.)	\$2,920 (\$73 x

**Calculation:** 1 amended loco. engineer cert. prog. x 40 hrs. = 40 hours

*The burden for training locomotive engineers is already covered in § 232.605(a) above. Consequently, there is no additional burden associated with this requirement.*

Finally, as noted earlier, § 232.203(e) stipulates that a railroad or contractor must maintain adequate records to demonstrate the current qualification status of all of its personnel assigned to inspect, test, or maintain a train brake system.

*The burden for training locomotive engineers is already covered in § 232.605(a) above. Consequently, there is no additional burden associated with this requirement.*

Total annual burden for this entire requirement is 34,485 hours (26,480 + 7,580 + 214 + 107 + 40 + 24 + 40).

**§ 232.607      Inspection and testing requirements.**

- A. Trains at initial terminal. A freight train operating in ECP brake mode shall receive at its point of origin (initial terminal): a Class I brake test as described in § 232.205(c) by a qualified mechanical inspector (QMI); and a pre-departure freight inspection pursuant to Part 215 of this chapter by an inspector designated under § 215.11 of this chapter.

Among its other requirements, section 232.205(c) stipulates the following: When the release is initiated by the controlling locomotive or yard test device, the brakes on each freight car shall be inspected to verify that they did release; this may be performed by a “roll-by” inspection. If a "roll-by" inspection of the brake release is performed, train speed must not exceed 10 MPH and the qualified person performing the “roll-by” inspection must communicate the results of the inspection to the operator of the train. The operator of the train must note successful completion of the release portion of the inspection on the written record required in paragraph (d) of this section.

A railroad must notify the locomotive engineer that the Class I brake test was satisfactorily performed and provide the information required in this paragraph to the locomotive engineer or place the information in the cab of the controlling locomotive following the test. The information required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the information must be retained in the cab of the controlling locomotive until the train reaches its destination. The written or electronic record must contain the date, time, number of freight cars inspected, and identify the

qualified person(s) performing the test and the location where the Class I brake test was performed.

FRA has found that train symbols change when trains are interchanged; crews do not know where trains originated, do not know mileage traveled, and do not know last tests and inspections performed. Without this knowledge of train history, railroads and train crews cannot possibly comply with Federal regulations in some instances. Therefore, FRA modified the language in the current regulation to eliminate this discrepancy, and further enhance the safety of train operations by requiring that an electronic or written record indicating the Class I brake test was satisfactorily performed be kept in the cab of the controlling locomotive. The locomotive engineer may receive the information that a roll-by release inspection has been completed via radio or other means of communication. The locomotive engineer may record the information on the inspection card. The notification must remain in the cab of the locomotive until the train reaches its destination. This modification in the language will ensure that train crews will know when the train they are operating is due attention for testing and inspection purposes, thereby enhancing the continued safe operation of the train.

FRA estimates that approximately 750 Class I brake test inspections will be performed by a qualified mechanical inspector and 750 notifications (records) to the locomotive engineer that the Class I brake test was successfully performed will be completed in writing/electronically each year under the above requirement each year. It is estimated that it will take approximately 90 minutes to perform each Class I brake test inspection and approximately 45 seconds to complete each notification. Total annual burden for this requirement is 1,134 hours.

Respondent Universe:	1 railroad
Burden time per response:	90 minutes + 45 seconds
Frequency of Response:	On occasion
Annual number of Responses:	750 inspections + 750 notifications/records
Annual Burden Hours:	1,134 hours
Annual Cost:	\$81,648 (\$72 x 1,134 hrs.)

**Calculation:** 750 brake test inspections x 90 min. + 750  
notifications/records x 45 seconds = 3,781 hours

- B. Trains en route. (1) Except for a unit or cycle train, a train operating in ECP brake mode shall not operate a distance that exceeds its destination or 3,500 miles, whichever is less, unless inspections meeting the requirements of paragraph (a) of this section are performed on the train. (2) A unit or cycle train operating in ECP brake mode shall receive the inspections required in paragraph (a) of this section at least every 3,500 miles. (3) The greatest distance that any car in a train has traveled since receiving a Class I

brake test by a qualified mechanical inspector (QMI) will determine the distance that the train has traveled. (4) A freight train operating in ECP brake mode shall receive a Class I brake test as described in § 232.305(c) by a qualified person at a location where the train is off air for a period of more than (i) 24 hours, or (ii) 80 hours, if that train remains inaccessible to the railroad and in an extended off air facility. For the purpose of this section, an extended off air facility means a location controlled by a sole shipper or consignee which restricts access to the train and provides sufficient security to deter vandalism.

*The burden for this requirement is covered in that of § 232.607A above. Consequently, there is no additional burden associated with this requirement.*

- C. Cars added en route. (1) Each freight car equipped with an ECP brake system that is added to a freight train operating in ECP brake mode must receive a Class I brake test as described in § 232.205(c) by a qualified person, unless all of the following are met: (i) The car has received a Class I brake test by a qualified mechanical inspector within the last 3,500 miles; (ii) Information identified in § 232.205(e) relating to the performance of the previously received Class I brake test is provided to the train crew; (iii) The car has not been off air for more than 24 hours or more than 80 hours, if that train remains in an extended off air facility; and (iv) A visual inspection of the car’s brake systems is conducted to ensure that the brake equipment is intact and properly secured. This may be accomplished as part of the inspection required under § 215.13 of this chapter and may be conducted while the car is off air.

FRA estimates that approximately 50 blocks of cars will be affected annually by the above requirement. Thus, approximately 50 will need inspections and, of these 50 blocks of cars, approximately 25 will require notifications. It is estimated that it will take approximately 60 minutes to perform each Class I brake test inspection and approximately 45 seconds to complete each notification. Total annual burden for this requirement is 50 hours.

Respondent Universe:	4 railroads
Burden time per response:	60 minutes + 45 seconds
Frequency of Response:	On occasion
Annual number of Responses:	50 brake tests + 25 notifications
Annual Burden Hours:	50 hours
Annual Cost:	\$3,600 (\$72 x 50 hrs.)

**Calculation:** 50 brake tests x 60 minutes + 25 notifications x 45 seconds = 50 hours

- (2) Each car and each solid block of cars not equipped with an ECP brake system that is

added to a train operating in ECP mode must receive a visual inspection to ensure it is properly placed in the train and safe to operate and must be moved and tagged in accordance with the provisions contained in § 232.15.

Under § 232.15, at the place where the railroad first discovers the defect, a tag or card must be placed on both sides of the defective equipment, except that defective locomotives may have the tag or card placed in the cab of the locomotive. In lieu of a tag or card, an automated tracking system approved for use by FRA shall be provided. The tag, card, or automated tracking system must contain the following information about the defective equipment: (i) The reporting mark and car or locomotive number; (ii) The name of the inspecting railroad; (iii) The name and job title of the inspector; (iv) The inspection location and date; (v) The nature of each defect; (vi) A description of any movement restrictions; (vii) The destination where the equipment it will be repaired; and (viii) The signature, or electronic identification, of the person reporting the defective condition. The tag or card required by paragraph (b)(1) of this section must remain affixed to the defective equipment until the necessary repairs have been performed.

An electronic or written record or copy of each tag or card attached to or removed from a car or locomotive must be retained for 90 days and, upon request, must be made available within 15 calendar days for inspection by FRA or State inspectors.

Each tag or card removed from a car or locomotive must contain the date, location, reason for its removal, and the signature of the person who removed it from the piece of equipment.

Any automated tracking system approved by FRA to meet the tagging requirements contained in paragraph (b)(1) 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 approved automated tracking system in lieu of tagging if FRA finds that the automated tracking system is not properly secure; is inaccessible to FRA or a railroad's employees; or fails to adequately track and monitor the movement of defective equipment. FRA will record such a determination in writing, include a statement of the basis for such action, and provide a copy of the document to the railroad.

Under this requirement, FRA is proposing that all cars or locomotives found with defective or inoperative braking equipment be tagged as bad and ordered with a designation of the location where the necessary repairs can and will be effectuated.

This will happen very rarely. FRA estimates that approximately 25 cars will require visual inspections and, as a result, approximately 50 defective cars will need tags (one tag for each side or a total of 50 tags) under this requirement. It is estimated that it will take approximately five (5) minutes to complete the visual inspection and approximately 2.5

minutes to prepare each tag and place it on one of the sides of the defective equipment. Total annual burden for this requirement is four (4) hours.

Respondent Universe:	200 Cars	
Burden time per response:	5 minutes per inspection + 2.5 minutes per tag	
Frequency of Response:		On occasion
Annual number of Responses:	25 inspections + 50 tags/electronic or written records	
Annual Burden Hours:	4 hours	
Annual Cost:		\$288 (\$72 x 4 hrs.)

**Calculation:** 50 inspections x 5 min. + 100 tags/records x 2.5 min.  
= 8 hours

Total annual burden for this entire requirement is 1,188 hours (1,134 + 50 + 4).

**§ 232.609 Handling of defective equipment with ECP brake systems.**

(a) Ninety-five percent of the cars in a train operating in ECP brake mode shall have effective and operative brakes prior to use or departure from the train's initial terminal location or any location where a Class I brake test is required to be performed on the entire train by a qualified mechanical inspector pursuant to § 232.607.

(b) A freight car equipped with an ECP brake system that is known to have arrived with ineffective or inoperative brakes at initial terminal of the next train which the car is to be included or at a location where a Class I brake test is required under § 232.607(b)(1) through (b)(3) shall not depart that location with ineffective or inoperative brakes in a train operating in ECP mode, unless: (i) The location does not have the ability to conduct the necessary repairs; (ii) The car is hauled only for the purpose of repair to the nearest forward location where the necessary repairs can be performed consistent with the guidance contained in § 232.15(f); (iii) The car is not being placed for loading or unloading while being moved for repair unless unloading is necessary for the safe repair of the car; and (iv) The car is properly tagged in accordance with § 232.15(b).

*The burden for this requirement is included under that of § 232.607C (2) above. Consequently, there is no additional burden associated with this requirement.*

(c) A freight car equipped with only conventional pneumatic brakes shall not move in a freight train operating in ECP brake mode unless it would otherwise have effective and operative brakes if it were part of a conventional pneumatic brake-equipped train or could

be moved from the location in defective condition under the provisions contained in and tagged in accordance with § 232.15.

FRA estimates that the number of cars affected by this requirement will be very few. FRA estimates that approximately 25 cars per year will need to be tagged (one tag on each side of the car or a total of 50 tags). It is estimated that it will take approximately 2.5 minutes to prepare each tag and place it on one of the sides of the defective car. Total annual burden for this requirement is two (2) hours.

Respondent Universe:	Cars	25
Burden time per response:		2.5 minute s per tag
Frequency of Response:		On occasion
Annual number of Responses:	50 tags/electronic or written records	
Annual Burden Hours:	2 hours	
Annual Cost:	2hrs.)	\$144 (\$72 x

**Calculation:** 50 tags/records x 2.5 min. = 2 hours

(d) A freight train operating in ECP brake mode shall not move if less than 85 percent of the cars in the train have operative and effective brakes. However, after experiencing a penalty for having less than 85 percent operative and effective brakes, a freight train operating in ECP brake mode may be moved if all of the following are met: (1) The train is visually inspected; (2) Appropriate measures are taken to ensure that the train is safely operated to the location where necessary repairs or changes to the consist can be made; (3) A qualified person determines that it is safe to move the train; and (4) The train is moved in ECP brake Switch Mode to the nearest or nearest forward location where necessary repairs or changes to the consist can be made.

FRA estimates that approximately 10 cars will require visual inspections and, as a result, approximately 10 defective cars will need tags (one tag for each side of the car or a total of 40 tags) under this requirement. It is estimated that it will take approximately five (5) minutes to complete the visual inspection and approximately 2.5 minutes to prepare each tag and place it on one of the sides of the defective equipment. Total annual burden for this requirement is two (2) hours.



Respondent Universe:	Cars	10
Burden time per response:	5 minutes per inspection + 2.5 minutes per tag	
Frequency of Response:		On occasion
Annual number of Responses:	10 inspections + 20 tags/electronic or written records	
Annual Burden Hours:	2 hours	
Annual Cost:		\$144 (\$72 x 2 hrs.)

**Calculation:** 10 inspections x 5 min. + 20 tags/records x 2.5 min. =  
2 hours

(e) A freight car or locomotive equipped with an ECP brake system that is found with inoperative or ineffective brakes for the first time during the performance of a Class I brake test or while en route may be used or hauled without civil penalty liability under this part to its destination, not to exceed 3,500 miles; provided, all applicable provisions of this section are met and the defective car or locomotive is hauled in a train operating in ECP brake mode.

*The burden for this requirement is included under that of § 232.609(b) above. Consequently, there is no additional burden associated with this requirement.*

(f) A freight car equipped with an ECP brake system that is part of a train operating in ECP brake mode (1) that is found with a defective non-brake safety appliance may be used or hauled without civil penalty under this part to the nearest or nearest forward location where the necessary repairs can be performed consistent with the guidelines contained in § 232.15(f); (2) that is found with an ineffective or inoperative brake shall be hauled in accordance with the following: (i) § 232.15(e)(1); (ii) No more than two freight cars with brakes pneumatically cut out or five freight cars or five units in a multi-unit articulated piece of equipment with brakes electronically cut out shall be consecutively placed in the same train.

FRA estimates that approximately 25 cars will need tags (one tag for each side of the car or a total of 50 tags) under the above requirement. It is estimated that it will take approximately 2.5 minutes to prepare each tag and place it on one of the sides of the defective equipment. Total annual burden for this requirement is two (2) hours.

Respondent Universe:	Cars	25
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Burden time per response:

2.5  
minute  
s per  
tag

Frequency of Response:

On occasion

Annual number of Responses:

50 tags/electronic or written records

Annual Burden Hours:

2 hours

Annual Cost:

\$144 (\$72 x 2

hrs.)

**Calculation:** 50 tags/records x 2.5 min. = 2 hours

(g) A train operating with conventional pneumatic brakes shall not operate with freight cars equipped with stand alone ECP brake systems unless:

(1) The train has at least the minimum percentage of operative brakes required by paragraph (h) of this section when at an initial terminal or paragraph (d) of this section when en route; and

(2) The stand-alone ECP brake equipped cars are:

(i) Moved for the purpose of delivery to a railroad receiving the equipment or to a location for placement in a train operating in ECP brake mode or being moved for repair to the nearest available location where the necessary repairs can be made in accordance with § 232.15(a)(7) and (f);

(ii) Tagged in accordance with § 232.15(b); and

(iii) Placed in the train in accordance with § 232.15(e).

FRA estimates that approximately 25 cars moved for the purpose of delivery for repair will need to be tagged under the above requirement (one tag for each side or a total of 50 tags). It is estimated that it will take approximately 2.5 minutes to complete each tag. Total annual burden for this requirement is two (2) hours.

Respondent Universe:

50

Cars

Burden time per response:

2.5  
minute  
s per  
tag

Frequency of Response:		On occasion
Annual number of Responses:	50 tags/electronic or written records	
Annual Burden Hours:	2 hours	
Annual Cost:		\$144 (\$72 x 2 hrs.)
<b>Calculation:</b>	50 tags/records x 2.5 min. = 2 hours	

(h) A train equipped and operated with conventional pneumatic brakes may depart an initial terminal with freight cars that are equipped with stand-alone ECP brake systems, provided all of the following are met: (1) The train has 100 percent effective and operative brakes on all cars equipped with conventional pneumatic brake systems;

(2) The train has at least 95 percent effective and operative brakes when including the freight cars equipped with stand-alone ECP brake systems; and (3) The requirements contained in paragraph (g) of this section are met.

*The burden for this requirement is included under that of § 232.609(g) above. Consequently, there is no additional burden associated with this requirement.*

(i) Tagging of defective equipment. A freight car equipped with an ECP brake system that is found with ineffective or inoperative brakes will be considered to be electronically tagged under § 232.15(b)(1) and (b)(5) if the car is used or hauled in a train operating in ECP brake mode and the ECP brake system meets the following:

(1) The ECP brake system is able to display information in the cab of the lead locomotive regarding the location and identification of the car with defective brakes;

(2) The information is stored or downloaded and is accessible to FRA and appropriate operating and inspection personnel; and

(3) An electronic or written record of the stored information is retained and maintained in accordance with § 232.15(b)(3).

*The burden for this requirement is included under that of § 232.609(b). Consequently, there is no additional burden associated with this requirement.*

(j) Procedures for handling ECP brake system repairs and designation of repair locations.

(1) Each railroad operating freight cars equipped with ECP brake systems must adopt and comply with specific procedures developed in accordance with the requirements related to the movement of defective equipment contained in this subpart. These procedures must be made available to FRA upon request.

FRA estimates that approximately one (1) procedure will be developed under the above requirement. It is estimated that it will take approximately 24 hours to develop the necessary procedures and submit them to FRA. Total annual burden for this requirement is 24 hours.

Respondent Universe:		2 railroads
Burden time per response:		24 hours
Frequency of Response:		On occasion
Annual number of Responses:	1 procedure	
Annual Burden Hours:		24 hours
Annual Cost:		\$1,752 (\$73 x
	24 hrs.)	

**Calculation:** 1 procedures x 24 hrs. = 24 hours

(2) Each railroad operating freight trains in ECP brake mode must submit to FRA's Associate Administrator for Safety a list of locations on its system where ECP brake system repairs will be performed.

FRA estimates that approximately one (1) list will be submitted to FRA under the above requirement. It is estimated that it will take approximately eight (8) hours to develop each list and send it to FRA. Total annual burden for this requirement is eight (8) hours.

Respondent Universe:		2 railroads
Burden time per response:		8 hours
Frequency of Response:		On occasion
Annual number of Responses:	1 list	
Annual Burden Hours:		8 hours
Annual Cost:		\$584 (\$73 x 8
	hrs.)	

**Calculation:** 1 list x 8 hrs. = 8 hours

A railroad must notify FRA's Associated Administrator for Safety in writing 30 days prior to any change in the locations designated for such repairs. A sufficient number of locations must be identified to ensure compliance with the requirements related to the

handling of defective equipment contained in this part.

FRA estimates that approximately one (1) notification will be submitted to FRA regarding any changes in repair locations under the above requirement. It is estimated that it will take approximately 60 minutes to compose each notification and send it to FRA. Total annual burden for this requirement is one (1) hour.

Respondent Universe:	4 railroads
Burden time per response:	60 minutes
Frequency of Response:	On occasion
Annual number of Responses:	1 notification
Annual Burden Hours:	1 hour
Annual Cost:	\$73 (\$73 x 1 hr.)

**Calculation:** 1 notifications x 60 min. = 1 hour

Total annual burden for this entire requirement is 41 hours (2 + 2 + 2 + 2 + 24 + 8 + 1).

**§ 232.611    Periodic maintenance.**

(a) In addition to the periodic maintenance requirements contained in § 232.303(b) through (d), a freight car equipped with an ECP brake system must be inspected and repaired before being released from a shop or repair track to ensure the proper and safe condition of the following: (1) ECP brake system wiring and brackets; (2) ECP brake system electrical connections; (3) Car mounted ECP brake system components.

FRA estimates that approximately 300 inspections will be conducted each year under the above requirement. It is estimated that it will take approximately 10 minutes to conduct each inspection and record the results. Total annual burden for this requirement is 50 hours.

Respondent Universe:	300 freight cars
Burden time per response:	10 minutes
Frequency of Response:	Annually
Annual number of Responses:	300 inspections/records
Annual Burden Hours:	50 hours
Annual Cost:	\$3,600 (\$72 x

50 hrs.)

**Calculation:** 300 tests/records x 10 min. = 50 hours

(b) Single car air brake test procedures. Prior to placing a freight car equipped with an ECP brake system into revenue service, it shall receive a single car air brake test using the appropriate standard submitted to and approved by FRA pursuant to § 232.17.

Under § 232.17(c), the following applies:

*Petitions for special approval of pre-revenue service acceptance testing plan.* Each petition for special approval of a pre-revenue service acceptance testing plan must contain: (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition; and (2) The elements prescribed in § 232.505.

Each petition for special approval under § 232.17 (c) must be submitted in triplicate to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., SE, Washington, DC 20590.

Under § 232.505(e), elements of the plan must include all of the following: (1) An identification of each waiver, if any, of FRA or other Federal safety regulations required for the tests or for revenue service operation of the equipment. (2) A clear statement of the test objectives. One of the principal test objectives shall be to demonstrate that the equipment meets the safety design and performance requirements specified in this part when operated in the environment in which it is to be used. (3) A planned schedule for conducting the tests. (4) A description of the railroad property or facilities to be used to conduct the tests. (5) A detailed description of how the tests are to be conducted. This description shall include: (i) An identification of the equipment to be tested; (ii) The method by which the equipment is to be tested; (iii) The criteria to be used to evaluate the equipment's performance; and (iv) The means by which the test results are to be reported to FRA. (6) A description of any special instrumentation to be used during the tests. (7) A description of the information or data to be obtained. (8) A description of how the information or data obtained is to be analyzed or used. (9) A description of any criteria to be used as safety limits during the testing. (10) A description of the criteria to be used to measure or determine the success or failure of the tests. If acceptance is to be based on extrapolation of less than full level testing results, the analysis to be done to justify the validity of the extrapolation shall be described. (11) A description of any special safety precautions to be observed during the testing. (12) A written set of standard operating procedures to be used to ensure that the testing is done safely. (13) Quality control procedures to ensure that the inspection, testing, and maintenance procedures are followed. (14) Criteria to be used for the revenue service operation of the equipment. (15) A description of all testing of the equipment that has previously been performed, if

any.

FRA estimates that approximately one (1) procedure/petition and two copies will be submitted under the above requirement by the Association of American Railroads (AAR). All four railroads will follow this procedure. It is estimated that it will take approximately 100 hours to develop the procedure and compose the petition and approximately five (5) minutes to make a copy by the AAR. Total one-time burden for this requirement is 24 hours.

Respondent Universe:

1  
Railroad  
Representative

Burden time per response: 24  
hours + 5  
minutes

Frequency of Response:	One-time	
Annual number of Responses:	1 procedure/petition + 2 copies	
Annual Burden Hours:	24 hours	
Annual Cost:	24 hrs.)	\$1,752 (\$73 x

**Calculation:** 1 procedure/petition x 24 hrs. + 2 copies x 5 min. = 24 hrs.

(c) Except as provided in § 232.303(e), a single car air brake test conducted in accordance with the procedure submitted and approved in accordance with paragraph (b) of this section shall be performed by a qualified person on a freight car equipped with an ECP brake system whenever any of the events identified in § 232.305 occur, except for those identified in paragraph (f) of this section.

*The burden for this requirement is already included under that of § 232.305. Consequently, there is no additional burden associated with this requirement.*

(d) A single car air brake test conducted in accordance with the procedure submitted and approved in accordance with paragraph (b) of this section shall be performed by a

qualified person on each freight car retrofitted with a newly installed ECP brake system prior to placing or using the car in revenue service.

FRA estimates that approximately 50 freight cars meeting the above requirements will require a single car test each year. Test results have to be entered into AAR's electronic recordkeeping system called UMLER (Uniform Machine Language Equipment Register). It is estimated that it takes approximately 45 minutes to conduct the test and record the results in UMLER. Total annual burden for this requirement is 38 hours.

Respondent Universe:		50 freight cars
Burden time per response:		45 minutes
Frequency of Response:		Annually
Annual number of Responses:	50 tests/records	
Annual Burden Hours:	38 hours	
Annual Cost:		\$2,736 (\$72 x 38 hrs.)

**Calculation:** 50 tests/records x 45 min. = 38 hours

(e) Modification of single car test standard. A railroad or a duly authorized representative of the railroad industry may seek modification of the single car test standard approved in accordance with paragraph (b) of this section. The request for modification will be handled and shall be submitted in accordance with the modification procedures contained in § 232.307.

FRA estimates that approximately one (1) modification per year will occur under the above requirement. It is estimated that it will take approximately 40 hours to modify the procedure and submit it to FRA for approval. Total annual burden for this requirement is 40 hours.

Respondent Universe:		1 Railroa d Repres entativ
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Burden time per response:		40 hours
Frequency of Response:	On occasion	
Annual number of Responses:	1 modified single car test procedure	
Annual Burden Hours:	40 hours	
Annual Cost:		\$2,920 (\$73 x 40 hrs.)

**Calculation:** 1 modified single car test procedures x 40 hrs. = 40 hours

Total annual burden for this entire requirement is 152 hours (50 + 24 + 38 + 40).

Total estimated annual burden for this entire information collection is **1,080,245** hours.  
The dollar equivalent cost for these estimated burden hours is **\$78,857,092**.

**13. Estimate of total annual costs to respondents.**

**Rule Costs**

Section 232.105(h) of the rule requires, after March 1, 2017, that each locomotive left unattended outside of a yard shall be equipped with an operative exterior locking mechanism. AAR standard S-5520 requires that each locomotive left unattended outside of a yard shall be equipped with an operative exterior locking mechanism, and requires that locomotives be equipped in order to be used in interchange service. These mechanisms will meet the requirements of § 232.105(h). The unit cost for a locking mechanism meeting AAR standard S-5520 is \$215.

FRA believes that smaller railroads could comply with § 232.105(h) with a simpler lock and hasp system, for a unit cost of \$100. Given the smaller number of locomotives, personnel, territory, and facilities, use of this type of system would not be problematic. FRA believes that no more than 500 locomotives belonging to Class III railroads lack locking mechanisms that comply with new § 232.105(h). Thus, the cost to install the locking mechanisms would be no more than 500 times \$100, or **\$50,000**.

**Additional Costs**

Besides the costs to respondents enumerated in the answer to question number 12, there are other miscellaneous costs that railroads will incur annually from the old requirements.

They are as follows:

\$7,029.90 Cost to print 140,598 tags @ \$.05 per tag  
 3,500.00 Cost for 70,000 stickers @\$0.05 ea.

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\$10,529.90 **TOTAL**

**\$60,529.90 GRAND TOTAL**

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

- A. There is no additional cost to the Federal Government related to the rule’s new requirements. This is because FRA railroad and State inspectors will monitor compliance with the new requirements as part of their routine inspection duties. Furthermore, there is no cost to the Federal Government connected to the recordkeeping requirements. These records are examined on a somewhat routine basis in connection with regular enforcement activities designed to monitor carrier compliance with inspection and testing requirements. The information on the record is not collected or compiled by any Federal agency.
- B. The reports required to be submitted to FRA will be reviewed and evaluated by a Motive Power and Equipment Specialist in Washington, D.C. It is estimated 200 hours will be required annually for these reviews. Based on \$86 per man hour (includes 75 percent for overhead), the annual cost to the Federal Government is \$17,200. **Total cost** to the Federal Government then is **\$17,200**.

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

The burden for this collection of information has decreased by a total of **92,393 hours** and by **1,634,074 responses** from the last approved submission. The decreases are due solely to **adjustments**, which are detailed in the table below:

**TABLE FOR ADJUSTMENTS**

CFR Section	Responses & Avg. Time (Previous Submission)	Responses & Avg. Time (This Submission)	Burden Hours (Previous Submission)	FRA Burden Hours (This Submission)	Difference (plus/minus)
232.103(n)(7)(i) – Plan for equipment left on track or siding - Notification to FRA	10 plans 10 hours	1 plan 10 hours	100 hours	10 hours	- 90 hours - 9 responses
	10 notices	1 notice	5 hours	1 hour	- 4 hours

on development of plan	30 minutes	30 minutes			- 9 responses
232.103(n)(9) – Revised operating rules/practices	491 rules 2 hours	0 rules 0 hours ( <i>already completed</i> )	982 hours	0 hours	- 982 hours - 491 resp.
232.103(n)(11) – Alternative securement procedure	655 procedures 1 hour	0 procedures 0 hours ( <i>already completed</i> )	655 hours	0 hours	- 655 hours - 655 resp.
232.203 – Amendments to written program - Assessment Plans	559 amend. 8 hours	695 amend. 8 hours	4,472 hours	5,560 hours	+ 1,088 hours +136 resp.
	1 plan + 559 copies 40 hours + 1 minute	1 plan + 695 copies 40 hours + 1 mn.	49 hours	52 hours	+ 3 hours + 136 resp.
232.207 – Designated locations for Class IA brake tests	5 lists 1 hour	1 list 1 hour	5 hours	1 hour	- 4 hours - 4 resp.
232.209 – Class II brake tests: communication of results of roll-by inspection	1,597,400 comm. 3 seconds	159,740 comm. 3 seconds	1,331 hours	133 hours	- 1,198 hours - 1,437,660 responses
232.303– Stenciling/ marking of last repair brake test/single car test	320,000 marks 5 minutes	240,000 marks 5 minutes	26,667 hours	20,000 hours	- 6,667 hours - 80,000 resp.
232.305 – Single car brake test/record	320,000 tests/ records 60 minutes	240,000 marks 5 minutes	320,000 hours	240,000 hours	- 80,000 hours - 80,000 resp.
232.307 – RR/AAR request to modify single car air brake test procedure	1 request + 3 copies 100 hours + 5 minutes	1 request + 3 copies 20 hours + 5 minutes	100 hours	20 hours	- 80 hours 0 responses
232.409- Calibration of End-of-Train Devices (EOTs) – Markings/records	32,708 marked units 1 minute	1,350 marked units 1 minute	545 hours	23 hours	- 522 hours - 31,358 resp.
232.603 – Configuration management plans	1 plan 160 hours	0 plans 0 hours ( <i>already completed</i> )	160 hours	0 hours	- 160 hours - 1 response
232.605 – RRs Operating freight cars w/ECP brakes: Training, qualification, and designation program - Subsequent Years: Programs	1 program 100 hours	0 programs 0 hours ( <i>already completed</i> )	100 hours	0 hours	- 100 hours - 1 response
	1 program 100 hours	0 programs 0 hours ( <i>already completed</i> )	100 hours	0 hours	- 100 hours - 1 response

232.607–Class I brake tests: Tests/ notifications/records -	2,500 tests + 2,500 notices/ records 90 minutes + 45 seconds	750 tests + 750 notices/ records 90 minutes + 45 seconds	3,781 hours	1,134 hours	- 2,647 hours - 3,500 resp.
232.607–Cars added en route needing inspections/records -	250 tests + 125 notices/ records 60 minutes + 45 seconds	50 tests + 25 notices/ records 60 minutes + 45 seconds	253 hours	50 hours	- 203 hours - 300 resp.
232.607 – Visual inspection of cars note equipped with ECP brakes added to train or freight car operating in ECP mode + tagging defective cars	50 inspections minutes + 100 tags 5 minutes + 2.5 minutes	25 inspections minutes + 50 tags 5 minutes + 2.5 minutes	8 hours	40 hours	- 4 hours - 75 resp.
232.609 – Handling defective cars equipped w/ECP brakes having less than 85% operative or effective brakes - Tagging cars moved for repair purposes	20 inspections minutes + 40 tags/records 5 minutes + 2.5 minutes  100 tags 2.5 minutes	10 inspections minutes + 29 tags 5 minutes + 2.5 minutes  50 tags 2.5 minutes	3 hours  4 hours	2 hours  2 hours	- 1 hour - 30 resp.  - 2 hours - 50 responses
232.609 – Procedures for handling ECP brake system repairs /designation of repair locations - RR list of system locations where ECP brakes are performed	2 procedures 24 hours  2 lists 8 hours	1 procedure 24 hours  1 list 8 hours	48 hours  16 hours	24 hours  8 hours	- 24 hours - 1 response  - 8 hours - 1 response
232.611 – Periodic maintenance: Inspection of freight car w/ECP brake system before being released from repair shop or repair track	500 inspections /records 10 minutes	300 inspections /records 10 minutes	83 hours	50 hours	- 33 hours - 200 resp.

**Adjustments** above decreased the number of burden hours by **92,393 hours**, and decreased the number of **responses** by **1,634,074**.

The current inventory shows a burden total of *1,172,638 hours*, while the present submission exhibits a burden total of *1,080,245 hours*. Hence, there is a total burden decrease of **92,393 hours** for this information collection request.

There is no **change** in the costs to respondents.

**16. Publication of results of data collection.**

There are no plans for publication regarding this information collection.

**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 all five DOT strategic goals. First, it supports the Department's highest strategic goal, namely transportation safety. If this information were not collected or collected less frequently, the safety of rail freight operations in the United States would be greatly jeopardized. Specifically, without the information obtained under the new requirements of the proposed rule, it is likely that there would be more rail accidents/incidents involving unsecured locomotives and trains. The new requirements under § 232.103(n) enhance safety by ensuring that affected railroads develop plans that identify specific locations or circumstances where rail equipment may be left unattended. Railroads will then communicate these plans to railroad employees who will have a clear understanding of where and under what circumstances a locomotive or other rail equipment may be left unattended and be secure.

Also, under new § 232.103(n), the rule requires employee verification with another qualified employee of securement of a freight train or freight car left unattended. This is essentially encompassed in the job briefing. This requirement will enhance safety by ensuring that any employee who is responsible for securing equipment containing hazardous materials follows appropriate securement procedures. Such employees will need to fully consider these procedures in order to relay what was done to the qualified employee. This may be done by relaying pertinent securement information (i.e., the number of hand brakes applied, the tonnage and length of the train or vehicle, the grade and terrain features of the track, any relevant weather conditions, and the type of equipment being secured) to the qualified railroad employee. The qualified railroad employee must then verify and confirm with the train crew that the securement meets the railroad's requirements. The redundancy of the verification and confirmation will serve to minimize the risk of mistakes and reduce the chances of a locomotive or train becoming unsecured.

Under new § 232.103(n)(10), FRA is requiring railroads to inspect all equipment that any emergency responder has been on, under, or between for proper securement before the rail equipment or train is left unattended. As it may be necessary for emergency responders to modify the state of the equipment for the performance of their jobs by going on, under, or between equipment, it is critical for the railroad to have a qualified employee subsequently inspect the equipment to ensure that the equipment continues to be properly secured before it is again left unattended. Without these required inspections, locomotives and other rail equipment could be inadvertently rendered unsecured with potentially tragic consequences.

Without the new requirements under paragraph (n)(11), railroads would not have the flexibility to use in a prescribed location an alternative means of securement in lieu of hand brakes per the remainder of paragraph (n). Like in TB 10-01, FRA continues to believe in this final rule that unattended equipment in classification yards—a series of tracks where locomotives and cars are classified or switched to dismantle and make-up train sets—present situations where alternate forms of securement can be allowed.

Classification yards may have hump, bowl, flat or severe grades, or other characteristics. These characteristics and other local conditions, such as prevailing winds and possible severe weather, should be considered by the railroad in developing its instructions for using alternate forms of securement. The burden of proof is on the railroad in the use of alternate securement. If alternate securement is not effective, securement defaults to the application of a sufficient number of hand brakes. FRA inspectors will review alternative securement procedures to make sure that they are sufficient to secure unattended equipment. This option for railroads helps to promote railroad safety.

Without the new requirements under § 232.105(h), there would be no way to ensure that locking mechanisms for locomotive cabs are repaired in a reasonable time frame if broken or damaged. Unrepaired locking mechanisms that are broken or damaged increase risk of an untoward event occurring. A broken or damaged locking mechanism could attract vandals who could create havoc if they managed to get in the locomotive and set it in motion. FRA expects that each locomotive equipped with a locking mechanism will be inspected and maintained at the time of the locomotive's periodic inspection. If a locking mechanism is found inoperative at any time other than the periodic inspection, proposed paragraph (h)(3) would require the railroad to repair it within 30 days. However, if the periodic inspection falls within the 30-day limit for repair, FRA would expect that the lock will be repaired at the time of the periodic inspection in accordance with the requirement in paragraph (h)(2). Safety is enhanced by the requirements of this section which serve to keep unwanted and untrained individuals out of locomotives and other rail equipment where they do not belong.

The ECP modification to the rule and its associated collection of information seeks to reduce the number and severity of railroad accidents/incidents by ensuring that brake equipment used in freight operations throughout the United States are properly inspected, tested, and maintained. In particular, mandating written standard operating procedures will force railroads to analyze the safety impacts of the various ways to handle potentially dangerous situations. These written operating procedures requirements formalize what is already being practiced by many railroads. FRA believes that the forethought required to develop these procedures will preempt many mistakes that cause dangerous situations to occur. By reducing safety risks, there should be a corresponding reduction in the number of accidents/incidents, and severity of injuries to railroad employees and members of the general public.

Furthermore, training records will be used by railroads to demonstrate that the individuals responsible for train brake system inspection, maintenance, and tests meet the minimum qualification requirements enumerated in this new rule. FRA has access to these records, so it can independently assess whether the training provided to a specific individual adequately addresses the tasks for which the individual is deemed capable of performing. Knowing that FRA has access to these records and can review them at any time will serve to prevent potential abuses by railroads to use insufficiently trained individuals to perform necessary inspections, tests, and maintenance required by this rule. The training and qualification requirements provide the means by which FRA can judge the

effectiveness and appropriateness of a railroad's training and qualification program. By using properly qualified and trained individuals, brake equipment should be in better and safer condition. The ECP modification to the rule also clarifies tagging requirements, contains provisions regarding the placement of defective equipment, and provides a consistent method for calculating the percentage of operative brakes on a train. The duties imposed on railroads when moving defective equipment are made clearer in this new rule. Consequently, FRA believes the prescribed requirements help to ensure the safe and proper movement of defective equipment.

This information collection also supports the DOT strategic goal of mobility. By ensuring rail brake equipment will be in better and safer condition, the overall safety of the rail system is enhanced, and flexibility of choice is maintained for shippers and manufacturers. Manufacturers and shippers then have another option, and can decide for themselves on the mode of transportation to move their goods which best meets their time and cost schedules. A safer rail system will be more accessible, more convenient, and also more efficient.

This information also supports the DOT strategic goal of economic growth and trade. As previously mentioned, a national rail system which has less accidents/incidents due to better maintained and safer freight cars is going to be a more efficient and more economically competitive option to move various products. Moving a greater number of goods by rail – as a result of lower costs – is going to promote both economic growth as well as trade. Shipping a greater number of goods serves to increase the national gross domestic product. Destinations receiving these goods have included and doubtless will include points both in Canada and Mexico as well as throughout the U.S. Rail then is and will continue to be a critical component of an accessible and flexible transportation system. Rail has contributed notably to the recent unparalleled national prosperity. The new rule and corresponding information collection help ensure the continued free flow of goods by promoting and enhancing safe rail transportation.

This information collection also supports the Human and Natural Environment strategic goal in a very important way. By reducing the number and severity of railroad accidents/incidents and resulting property damage, communities and the natural environment affected will be protected. This is especially true in the case of train-tanker truck collisions and other accidents/incidents involving hazardous materials that are caused by defective brakes. Fewer accidents/incidents will translate into fewer pollutants, and other possible toxic substances being released into the natural environment. This serves to promote the sustainability and livability of communities throughout the country.

Finally, this information collection supports National Security. Freight cars which are secure would be a crucial component to move men, and material in the event of a national emergency. In a world filled with terrorism and instability, getting men and material to specific destinations safely and on schedule would undoubtedly 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.