

FEDERAL RAILROAD ADMINISTRATION



OFFICE OF RAILROAD SAFETY

VOLUME I - SIGNAL AND TRAIN CONTROL COMPLIANCE PROGRAMS AND POLICIES

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Chapter 1 – General

Introduction

This portion of the Signal and Train Control (S&TC) Technical Manual sets forth the methods, policies, and procedures that shall be used by Federal Railroad Administration (FRA) and State S&TC inspectors during their inspection and investigation activities to enforce and obtain railroad compliance with the regulations, laws, and orders issued by FRA, and such other activities as may be assigned as part of their duties.

The directives and guidance contained in the S&TC Technical Manual are designed to maximize the effective use of available resources to obtain uniform application of FRA signal and train control regulations throughout the Nation. This uniformity is mandated, to the extent practicable, by the Federal Railroad Safety Act of 1970 and is necessary for the effective management of the national safety program.

The S&TC Technical Manual is applicable to Federal and State S&TC inspectors and State highway-rail grade crossing inspectors. All S&TC personnel should refer to the manual as often as necessary to obtain a clear understanding of: (1) FRA policies, procedures, and programs, (2) proper applications of the regulations pertaining to signal and train control systems, and (3) required personal conduct while enforcing those regulations and performing inspections and investigations. If there is any doubt at any time about the intended meaning or proper application of any section of the manual, an inspector should ask his or her regional supervisory specialist for clarification.

As Federal regulations continue to be revised, amended, and newly promulgated—or new FRA policies, procedures, or programs are created or existing ones revised—the manual will likewise be in need of revision. Therefore, any comments or suggestions pertaining to future revisions are encouraged. Such comments or suggestions should be forwarded to the S&TC Staff Director, through the respective regional supervisory specialist and/or Regional Administrator or Deputy Regional Administrator.

The information in the manual is intended to provide internal guidance, and does not provide any basis for a private party to challenge FRA's exercise of enforcement discretion in a particular case. The guidance provided in the manual may be revoked or modified by FRA without prior notice at any time. The manual supersedes all previous S&TC enforcement and/or compliance manuals.

The manual is a complement to the Office of Railroad Safety's General Manual (General Manual). The General Manual provides detailed information regarding FRA's overall operation, history, and statutory authority; rulemaking process; and inspection and investigation procedures. Both manuals are specifically intended for use by S&TC safety inspectors and technical specialists throughout the country who monitor compliance with Federal law and safety regulations that apply to railroad signal and train control systems and highway-rail grade crossing warning devices.

Using both the discipline-specific manual and the General Manual will aid FRA and State inspectors in the performance of their duties and in the uniform application of Federal S&TC safety laws and regulations.

Program Goals

The goal of the S&TC safety program is to improve railroad safety by limiting the number of train accidents and highway-rail grade crossing accidents caused or contributed to by improperly installed and/or maintained signal and train control systems. This is done by reducing the number of unsafe failures and limiting the associated risks related to these systems. The S&TC safety program strives to reduce errors or defective conditions resulting in false proceed signal failures, malfunctions of highway-rail grade crossing active warning systems, noncompliance with the applicable Federal requirements, and other unsafe conditions related to signal and train control systems. FRA seeks to achieve the safety program's goals through effective oversight of the level of compliance with the Federal requirements related to the design, installation, maintenance, inspection, testing, and repair of these systems.

While FRA recognizes that it may never be possible for the railroads to eliminate all possibility of accidental derailments and/or collisions, FRA does believe it is possible to significantly reduce the number of rail-related accidents that do occur through compliance with its regulations. Very few accidents are actually caused by the failures of signal or train control systems. However, the record shows that each year the Nation's railroads report dozens of false proceed signal failures and several hundred activation failures of highway-rail grade crossing active warning systems. One of FRA's goals is to achieve a significant reduction of the occurrence of these type failures, thereby also reducing the risk of railroad accidents and injuries related to their occurrence.

On-the-Job Training (OJT) Program

The S&TC Field Training and Orientation Guide (also referred to as the OJT Booklet) is intended for OJT of new GS-09, -11, and -12 Federal inspectors as well as the State inspector equivalents of these grade levels. The standards contained in the guide are **not** intended to be used to evaluate GS-05 Federal inspectors or their State equivalents. However, they may be used for GS-07 inspectors, provided two conditions are met: (1) The GS-07 level trainee has completed the Level 2 task standards, and (2) FRA and the trainee have agreed upon a discipline of expertise for achieving the GS-09 level.

The task inventories that provide the foundation of the OJT program are the consensus product of the Safety Improvement and Development Division (SIDD). The methodology used in development of the program included validation of the standards against the inspection program activity codes, as well as the policies and guidelines available in the enforcement manuals and technical bulletins.

These standards supersede any previous methods the organization has used to evaluate proficiency levels of new inspectors. The use of written tests or other mechanisms to supplement the criteria set forth in this document are not acceptable, unless they are a formal part of the OJT program and listed in the OJT Booklet.

The standards intentionally require a significant amount of practice; experience has proven that proficiency improves with repetition.

The S&TC OJT program includes the following standards:

- S&TC and State highway-rail grade crossing inspectors **should not** be partially certified for Title 49 Code of Federal Regulations (CFR) Parts 233, 234, 235, or 236.

- All disciplines may be certified to perform Part 214 inspections once they have completed all related tasks, including completion of the self-study guide and test that are incorporated in those standards.

Analysis of the table at the end of the foreword section of the OJT Booklet is critical for understanding the process. Those involved in the process should take particular note of the “Conditions” column, which places responsibility on the organization to provide the tools, equipment, documentation, and practice necessary for a new inspector to achieve the standards.

The S&TC OJT standards are intended for two groups of inspectors:

- Federal and State S&TC Inspectors
- State Highway-Rail Grade Crossing Inspectors

The tasks specific to Parts 233, 235, and 236 are for S&TC inspectors only. The tasks specific to Parts 214 and 234 are for both S&TC and State highway-rail grade crossing inspectors. For quick reference, the tasks that apply only to State highway-rail grade crossing inspectors are ***bolded and italicized*** in the table of contents of the OJT Booklet.

S&TC regional supervisory specialists and inspectors should become familiar with the instructions and guidelines associated with the OJT program, and ensure that the standards are followed regarding all new S&TC inspectors. S&TC regional supervisory specialists and inspectors should read the foreword section of the OJT Booklet, specifically the section that outlines their roles and responsibilities.

Additional OJT Booklets, computerized versions of the OJT Booklet, and the training verification forms can be obtained by contacting the S&TC training specialist.

S&TC Division Staff Director, HQ Staff Specialists, and HQ Staff Electronic Engineers

Responsibilities

The S&TC Division Staff Director is responsible for the technical oversight of all S&TC discipline functions and outcomes within the Nation, and for the highest level possible of uniform application and enforcement of all FRA regulations and orders pertaining to railroad signal and train control systems. He or she is a member of the staff of the Director–Office of Safety Assurance and Compliance, and serves as the ultimate technical advisor on all S&TC matters throughout the Nation.

The FRA headquarters (HQ) staff specialists (staff specialists) and the HQ staff electronic engineers (electronic engineers), also referred to as HQ staff members, are responsible for the technical oversight of all S&TC discipline functions and outcomes within the Nation in the categories that are specifically assigned to them by the Staff Director. They are also responsible for providing the associated guidance necessary to achieve the highest level possible of uniform application of all Federal regulations and orders pertaining to railroad signal and train control systems. HQ staff members serve as the nationwide technical experts and advisors on specific S&TC matters as assigned by the Staff Director.

Duties

The Staff Director provides general technical review, evaluation, and analysis of the activities and outcomes of all inspection, enforcement, and investigation functions of the respective discipline. The Staff Director assigns and coordinates this oversight by specific category among the HQ staff members.

The Staff Director and HQ staff members:

- Provide guidance, direction, and advice to all personnel of the discipline in order to obtain the highest level possible of uniform application of the S&TC regulations. If there is a question about the correct application of a regulation, the regional supervisory specialist shall contact the Staff Director or the assigned HQ staff member for guidance.
- Direct the implementation of national enforcement policies and programs and assist in determining railroad compliance with Federal railroad safety regulations, laws, and standards involving S&TC discipline matters. They maintain accident and signal-related failure information and evaluate the safety performance of railroads across the country. They identify the need and develop recommendations for railroad system assessments, special areas of focus, and adjustment of enforcement priorities that result from safety evaluations of S&TC discipline matters.
- Direct the planning of special investigations and studies assigned throughout the Nation. For major investigations, the Staff Director and HQ staff members may personally plan and outline procedures to be followed and may be team leaders for a project.
- Oversee the appropriate and successful development, testing, and implementation of new technologies within the S&TC discipline. This function, in great part, includes HQ staff involvement in the various Positive Train Control (PTC) projects ongoing nationwide.
- Keep field personnel appropriately advised and involved to the extent available and applicable in these projects, and provide the guidance necessary in their development, implementation, and eventual in-service inspection techniques and practices.
- Advise FRA senior leadership on railroad safety issues or concerns related to S&TC discipline matters having railroad system, regional, or national impact, and make suggestions or recommendations regarding revision of agency policies, procedures, and specific activities included in such as the National Safety Program Plan (NSPP) or the National Inspection Plan (NIP).
- Represent FRA in contact with the railroad industry, other governmental agencies, unions, and civic and private groups related to all S&TC discipline matters. Through these contacts they are able to evaluate the status of assigned activities and ensure that the railroad industry and the public have a better understanding of FRA's S&TC programs and functions.

S&TC Division PTC Branch Supervisory Specialist (Branch Chief), PTC Senior Test Monitors, and PTC Regional Specialists

Responsibilities

The S&TC Division PTC Branch supervisory specialist (Branch Chief) provides specialized technical support to the Staff Director and S&TC Division, and leadership and direction to the other members of the PTC Branch staff. The Branch Chief also provides technical guidance to other internal and external personnel, related to PTC implementation and use across a major portion of the U.S. rail industry. He or she is a member of the staff of the Staff Director, and serves as the primary technical advisor to the Staff Director and other staff members on all PTC matters throughout the Nation.

The PTC Branch senior test monitors and the PTC regional specialists are members of the staff of the PTC Branch Chief and are responsible for the direct oversight of the design and implementation of PTC systems, as assigned, that are occurring within the railroad industry. The PTC senior test monitors and PTC regional specialists provide advice and guidance within FRA and other agencies, and to industry signal engineering officials, manufacturers of signal equipment, and labor organizations on the requirements of the Rail Safety Improvement Act of 2008 (RSIA) and the Federal rules and regulations pertaining to PTC systems.

Duties

The PTC Branch Chief leads and directs the PTC Branch staff in analyzing and overseeing the proper and safe development, testing, and implementation of PTC, as well as providing direction and guidance in monitoring the ongoing development, testing, and use of these systems. The PTC Branch Chief plans, develops, coordinates, implements, and directs the PTC Program consistent with the FRA NSPP and other policies and plans, the U.S. Department of Transportation (DOT) Strategic Plan, FRA technical directives and guidance, and accepted criteria for railway and structural engineering. He or she coordinates and directs the review of various industry-submitted PTC documentation, as well as the implementation of national enforcement policies and programs, to ensure a uniform enforcement of Federal laws, regulations, and standards pertaining to PTC systems. The PTC Branch Chief serves as the primary advisor to the Staff Director on all aspects of PTC development, testing, and program implementation, to include development and revision of national policies, programs, rules, regulations, standards, and procedures related to the program.

The PTC Branch Chief, senior test monitors, and PTC regional specialists:

- Provide oversight of the design and implementation of PTC systems that are occurring within the railroad industry.
- Review PTC systems and all associated documentation submissions as they are developed and provide recommendations to the Staff Director, the PTC Branch Chief, and the senior technical staff of the Associate Administrator for Railroad Safety/Chief Safety Officer.
- Provide advice and guidance within FRA, other agencies, industry signal engineering officials, manufacturers of signal equipment, and labor organizations on the requirements of Federal rules and regulations in this area of expertise.

- Attend various review and planning meetings associated with the individual PTC projects.
- Monitor laboratory and field testing of PTC systems presently under development and test, as well as future systems, to ensure the proper and safe development, testing, and implementation of PTC within the U.S.
- Determine railroad compliance with Federal railroad safety regulations, laws, and standards involving PTC matters.
- Provide technical advice to the railroads and help ensure that the applicable Federal regulations are adhered to and that safety principles are appropriately applied to these projects and programs.
- Provide advice to FRA regional personnel on PTC systems and the application of the associated rules.
- Conduct evaluations of PTC system failures and focused inspections of PTC systems.
- Assist the S&TC Training Specialist in developing training materials related to PTC systems and in training classes as needed.

S&TC Regional Supervisory Specialist

Responsibilities

The S&TC regional supervisory specialist (regional specialist) is responsible for the technical review and oversight of all S&TC inspection and investigation activity within his or her region, and for the uniform application and enforcement of all FRA regulations and orders pertaining to railroad signal and train control systems. The regional specialist is a member of the staff of the Regional Administrator and serves as the primary advisor on all S&TC matters within his or her region.

Duties

The regional specialist reports to and receives direction from the Regional Administrator. On matters pertaining to signal and train control systems, the regional specialist serves as a staff advisor to the Regional Administrator.

In addition, the regional specialist has the following duties:

- Provides technical evaluation of the S&TC safety inspectors (S&TC inspectors) and their work. The regional specialist will also coordinate the assignment and review of special assignments involving S&TC inspectors while exercising administrative supervision over a dispersed technical workforce. Approves work schedules and forms of leave, counsels employees, adjudicates employee complaints and problems, evaluates performance of subordinates, identifies and makes provisions for training needs of employees, and interviews candidates and makes recommendations for appointments, promotions, and reassignments.

- Provides guidance and advice to the S&TC inspectors in his or her region in order to attain uniform application and enforcement of the S&TC regulations. If there is a question about the correct application of a regulation, the regional specialist shall contact the S&TC Staff Director or S&TC HQ staff specialists for their guidance.
- Provides the assignment and evaluation of individual inspection areas to attain a uniform and effective workload among the various S&TC inspectors in his or her region.
- Reviews S&TC inspection reports; technical correspondence; and reports of investigations of false proceed signal failures, highway-rail grade crossing activation failures, applications and waivers, complaints, violations, etc., for timeliness, appropriate format, as well as technical thoroughness and correctness. Assures that associated reports are complete, accurate, meet expected standards, and are submitted in an appropriate and timely manner.
- Provides coordination of the investigation and preparation of the reports of investigations of serious rail accidents, and reviews the final report for technical thoroughness and accuracy of items pertaining to signal and train control systems.
- Assigns the investigation of railroad applications to remove or materially modify signal or train control systems, and for relief from the requirements of signal-associated Federal regulations. Further, the regional specialist provides the review for completeness and technical accuracy of the resulting report before it is forwarded through the Regional Administrator to the Associate Administrator for Railroad Safety/Chief Safety Officer.
- Directs the implementation of regional enforcement policies and programs to determine railroad compliance with Federal safety regulations, laws, and standards pertaining to railroad safety involving signal and train control matters. Maintains accident and signal failure information and evaluates the safety performance of railroads in his or her area of responsibility. Identifies the need and develops recommendations for system assessments and adjustments of enforcement priorities that result from his or her safety evaluation of signal and train control matters.
- Directs the formulation of plans for special investigations and studies assigned within the region. For major investigations, the supervisory specialist may personally plan and outline procedures to be followed. Reviews planned and completed itineraries to ensure thorough coverage of inspection points and economy of travel. Directs the investigation of violations and complaints regarding railroad safety, or alleged noncompliance with safety rules.
- Provides input and recommendations for the revision of existing regulations and promulgation of new regulations involving signal or train control systems.
- Provides guidance to State S&TC or highway-rail grade crossing inspectors and monitors their activities to achieve inspection efforts that are uniform with FRA's goals and activities.
- Carries out such special inspections, investigations, or other projects as may be assigned to him or her.

- Develops plans of action to resolve unique problems involving signal or train control systems and the compliance with associated regulations and standards that might come to his or her attention.
- Maintains appropriate and effective contact with the railroads that operate in his or her region and with manufacturers of signal equipment to keep abreast of new installations on the railroads, and new industry developments in the design of signal and train control systems.
- Administers the responsibilities of the Regional Administrator in his or her absence (when directed).

S&TC Railroad Safety Inspector

Responsibilities

The S&TC railroad safety inspector (S&TC inspector) is responsible for the enforcement of all Federal rules, regulations, and orders pertaining to railroad signal and train control systems within an assigned inspection area. The S&TC inspector is obligated to perform inspections and investigations within the guidelines established by FRA and effectively enforce the appropriate regulations, orders, or statutes. If the S&TC inspector is unsure about the application or relevancy of a particular regulation, it is the responsibility of the S&TC inspector to consult with his or her regional specialist for a correct application. In instances where the regional specialist is unavailable and guidance is needed immediately, the S&TC inspector may consult with the Staff Director or the HQ staff specialist assigned to the specified area or topic of interest. In such a case, the regional specialist shall be readily advised of the results of the consultation.

DOT and FRA require that S&TC inspectors perform their duties with courteous and professional deportment. S&TC inspectors are representatives and the primary public contacts of the agency. It is the S&TC inspector's responsibility to see that his or her activities and demeanor reflect creditably on the FRA. FRA's success in obtaining railroad compliance with its railroad safety program depends not only on S&TC inspectors being fully knowledgeable and consistent in correctly applying the railroad safety regulations, orders, and statutes, but also on S&TC inspectors acting in a polite and professional manner.

S&TC inspectors must never engage in conduct or make statements that are unbecoming to their positions, even if such conduct or statements are invited or provoked by the people with whom they are dealing. S&TC inspectors shall not make any derogatory remarks about any railroad, railroad employee, or group of railroad employees. Likewise, S&TC inspectors shall not make any derogatory remarks or recommendations about any manufacturer, manufacturer's employees, or a manufacturer's product, nor about any service a railroad contractor might offer.

It is the responsibility of the S&TC inspector to be aware of and to conform to the rules of conduct in order to eliminate the possibility of being accused of actually having (or having the appearance of) a conflict of interest. No S&TC inspector shall (or appear to) solicit, accept, or agree to accept—directly or indirectly—any favor, gift, loan, free service, or other item of economic value in any form whatsoever, from any railroad or railroad employee, or from any outside person, corporation, or group, if the S&TC inspector has reason to believe that the person, corporation, or group:

1. Has, or is seeking to obtain, contractual or other business of a financial relationship with DOT or a State agency;
2. Conducts operations or activities that are regulated by DOT;
3. Has interests that may be substantially affected by the S&TC inspector's performance or nonperformance of his or her official duties; or
4. Is attempting to reward or influence the S&TC inspector's official actions.

It is the responsibility of the S&TC inspectors to be guarded in their conversations in public places and to refrain from discussing the affairs of FRA or from making critical comments about the policies, actions, or competence of officials or employees of FRA or any other governmental, railroad, or labor organization.

S&TC inspectors shall remain aware that the railroads are private corporations and the conduct of their business is the prerogative of their officers. S&TC inspectors shall not preempt the authority of railroad officials to issue lawful orders or instructions to railroad employees.

S&TC inspectors are frequently asked about the applicability or the proper technical application of FRA's signal or train control regulations. It is the responsibility of the S&TC inspector to give appropriate answers regarding the application of the Federal regulations by making reference to the proper regulations and appropriate documents. If S&TC inspectors have any reservations about a particular issue, they shall refer the question to their regional specialist.

From time to time, S&TC inspectors will be asked about Federal regulations other than railroad S&TC regulations. S&TC inspectors shall not attempt to furnish answers about Federal regulations governing other disciplines, but shall refer such questions to the regional office for resolution. Further, S&TC inspectors shall not respond to inquiries concerning regulations not promulgated by FRA, but shall, in a courteous manner, suggest to the persons making such inquiries that they contact the agency or administration having jurisdiction in such matters.

In addition to the issues addressed above, State inspectors should be familiar with and adhere to the rules of conduct prescribed by their respective States.

Duties

The S&TC inspector shall:

- Carry out the FRA compliance program and conduct such investigations that may be assigned to him or her in compliance with established procedures. An S&TC inspector shall not undertake the investigation of matters not within FRA's purview without the express authority of his or her supervisor.
- Inspect and observe testing of railroad signal and train control systems, devices, appliances, and similar systems for compliance with the Rules, Standards, and Instructions (RS&I), and the Grade Crossing Signal System Safety and State Action Plans requirements. At the conclusion of each

inspection, an S&TC inspector shall issue an inspection report (Form FRA F 6180.96) to a railroad representative accompanying the inspector or otherwise having jurisdiction, citing the defects found and, if appropriate, recommending that a violation report be forwarded to FRA's Office of Chief Counsel.

- Monitor railroad properties to ensure that railroads are in compliance with all applicable CFR parts, including the requirements for reporting, the requirements and provisions for the filing of block signal applications, and the process for applying for relief from the RS&I and/or the Grade Crossing Signal System Safety and State Action Plans requirements, respectively.
- Conduct investigations of railroad accidents as directed by his or her supervisor, or (as occasion demands) on his or her own initiative. He or she shall make inspections and observe railroad tests to determine the condition and operation of the involved signal and train control systems and devices, or the highway-rail grade crossing active warning systems and devices, in service at the time of the accident. The investigation of the accident should include an evaluation of each of the following:
 - The railroad's associated operating practices and operating rules
 - The condition and design of the railroad's associated signal system
 - The stopping distances of trains involved
 - The appropriate spacing of associated signals for the train speeds involved
 - Any other significant factors contributing to the accident.

The S&TC inspector shall submit a detailed report of his or her investigation and file appropriate violation reports where warranted.

- Conduct investigations of complaints alleging noncompliance with FRA's signal regulations or of malfunctioning signal and train control systems, devices, or appliances, or any other unsafe conditions, when assigned to do so by his or her supervisor. When the investigation is completed, an S&TC inspector shall submit a written report of the investigation. This report shall clearly state whether the allegations were substantiated and what action was taken. If the S&TC inspector finds that the allegations are substantiated and involve noncompliance with any FRA regulation, he or she shall file a violation report, when warranted.
- Conduct investigations and submit reports with his or her recommendations for action to be taken on railroad applications to discontinue or materially modify signal and train control systems, or on petitions for relief from applicable Federal requirements, when assigned to do so by his or her supervisor.
- Conduct investigations and submit reports of investigations of reported false proceed signal failures, highway-rail grade crossing activation failures, and other related reports when instructed to do so by his or her supervisor. If an S&TC inspector learns of a condition that appears to present imminent danger to the passage of trains, to the safety of railroad employees, or to the general public, he or she is expected to take immediate action to ascertain the facts and then take such action, as appropriate, to prevent an accident or incident. The S&TC inspector will inform his or her supervisor or other regional management of the events and of his or her actions as soon as possible.

- Maintain an appropriate and effective liaison with the railroad officers in his or her inspection area and with industry representatives to keep abreast of new signaling technologies and new developments in railroad signal equipment.
- Assist as assigned in the training of State S&TC inspectors where such State inspectors are employed.

Basis for Regulation and Inspection

Statutory Authority

FRA's authority to promulgate and enforce regulations pertaining to railroad signal systems derives from the Federal Railroad Safety Statutes (49 U.S.C. ch. 201-213), which have incorporated the Signal Inspection Act of 1937 (Signal Inspection Act) and the Federal Railroad Safety Act of 1970 (Federal Railroad Safety Act). The Signal Inspection Act and the Federal Railroad Safety Act, as amended, give the Secretary of Transportation virtual plenary authority over signal and train control systems in use on the Nation's railroads. As discussed below, the legislation gives the Secretary authority to (1) order railroads to install signal and train control systems, devices, and appliances; (2) prohibit railroads, without approval, from materially modifying or discontinuing signal and train control systems once installed; (3) promulgate regulations pertaining to the installation, maintenance, and repair of signal and train control systems; (4) order the railroads to report failures of signaling devices in such manner as the Secretary may require; (5) prohibit the railroads to use or permit to be used any system, device, or appliance that is not in condition to be safely used; and (6) inspect and observe testing of the signal and train control systems in use on the Nation's railroads.

The Signal Inspection Act sets forth the basic requirements pertaining to railroad signal systems. When it was enacted by Congress on August 27, 1937, the statute charged the Interstate Commerce Commission (ICC) with the responsibility for administering the provisions of the act. Pursuant to the Department of Transportation Act of 1966, that responsibility now rests with the Secretary of Transportation and has been delegated to FRA.

The Signal Inspection Act provides that the Secretary may—after an investigation and if found to be in the public interest—order any railroad, within a time specified in the order, to install a block signal system, interlocking, automatic train stop, train control, and/or cab signal devices, and/or other similar appliances, methods, and systems intended to promote the safety of railroad operation (collectively referred to as “signal systems”). The railroad operation would be required to comply with the requirements prescribed by the Secretary, upon the whole or any part of its railroad, as prescribed in the order. Further, the Signal Inspection Act provides that any such signal systems put into service or installed pursuant to an order of the Secretary may not be discontinued or materially modified without the consent of the Secretary.

The Signal Inspection Act authorizes the Secretary to promulgate rules, standards, and instructions for the installation, inspection, maintenance, and repair of systems, devices, and appliances covered by the Act; serve them on the railroads, and make them obligatory for each railroad.

The Signal Inspection Act further provides that each railroad shall be required to report to the Secretary, in such manner as the Secretary might determine, each signal system failure to function as intended. In cases where an accident that is caused by the failure of a signal system results in an injury to person or property, the railroad is required to make a written report of the failure and circumstances of the accident. Such accidents also are subject to investigation by the Secretary.

Authority to Inspect

Under the Signal Inspection Act, it is unlawful for a railroad to use any signal system covered by S&TC regulations unless the signal system can be operated without unnecessary peril to life and limb. The signal system must be inspected from time to time and meet the requirements of those tests required by the rules, standards, and instructions adopted and approved by the Secretary. FRA's S&TC employees play an essential role in ensuring that such signal systems are properly inspected and that they operate safely.

The Federal Railroad Safety Act generally provides authority for the Secretary to "enter and inspect railroad equipment, facilities, rolling stock, operations, and relevant records." The Signal Inspection Act specifically authorizes the Secretary to inspect and observe testing of S&TC systems to determine that the systems are in proper condition to operate and provide adequate safety. The Secretary may employ persons familiar with signal systems to make inspections. However, such persons may not have an interest in a patented article that is required to be used in a railroad signal system and cannot have a financial interest in a railroad carrier or in an entity that deals in railroad supplies.

Penalties for Violations of S&TC Regulations

The Federal Railroad Safety Act, as amended, set penalties for violations of FRA regulations governing railroad signal systems, railroad employees engaged in signal construction and maintenance work under the hours of service laws, and provided further authority for safety regulations. Through subsequent legislation, the penalty amount for a violation of an FRA regulation pertaining to signal systems can range from \$650 to \$100,000.

Signal and Train Control Regulations, Laws, and Orders

The Interstate Commerce Commission (ICC) issued the initial rules pertaining to signal and train control systems on September 24, 1937. Under the new rules, railroads could no longer discontinue or materially modify signal or train control systems without approval of the ICC. Each railroad was required to file its rules, standards, and instructions for such systems within 6 months after the enactment of the amendatory provisions. Moreover, those railroads owning signal or train control systems were required to immediately report each accident resulting from the failure of such systems, devices, or appliances to function as intended.

On December 1, 1937, the ICC issued detailed instructions on the procedure for submitting applications for approval of a discontinuance or material modification, and for the reporting of signal failures and accidents on published forms beginning with the month of January 1938. In response to the failure of most railroads to submit their own rules, standards, and instructions for railroad signal systems, the ICC in 1939 issued its own Rules, Standards, and Instructions for the Installation, Inspection, Maintenance, and Repair of Automatic Block Signal Systems, Interlocking, Centralized Traffic Control Systems, Automatic

Train Stop and Train Control Systems, Automatic Cab Signal Systems, Dragging Equipment and Slide Detectors and other Similar Protective Devices, and Other Similar Appliances, Methods, and Systems (the RS&I). The RS&I was originally promulgated under 49 CFR Part 136. On April 1, 1967, the RS&I was retitled as 49 CFR Part 236 as a result of the creation of FRA under DOT.

On June 17, 1947, the ICC issued Order 29543, which required the Nation's railroads to install a manual block system or an automatic block signal system on any track where freight trains were permitted to operate at 50 or more mph or passenger trains were permitted to operate at 60 mph or more. Order 29543 also required an automatic cab signal system, automatic train stop system, or automatic train control system be installed on any track where any train would be permitted to operate at 80 mph or more. Further, such systems were required to comply with the RS&I, identified then as 49 CFR Part 136. Many efforts were made to modify Order 29543 over the years, but the Order remained unchanged until February 27, 1984, when its provisions were modified and incorporated into the FRA's Rules RS&I, now 49 CFR Part 236.

Presently, there are four parts of 49 CFR that pertain exclusively to railroad signal and train control systems: Parts 233 (Signal Systems Reporting Requirements), 234 (Grade Crossing Signal System Safety and State Action Plans), 235 (Instructions Governing Applications for Approval of a Discontinuance or Material Modification of a Signal System or Relief from the Requirements of Part 236), and 236 (Rules, Standards, and Instructions Governing the Installation, Inspection, Maintenance, and Repair of Signal and Train Control Systems, Devices, and Appliances). Federal and State S&TC inspectors also affect oversight of compliance with requirements for Roadway Worker Protection, Bridge Worker Safety, and Roadway Maintenance Machines found in Part 214, and of the limitations and requirements of the Hours of Service Act related to Signal Covered Service as well as the associated recordkeeping and reporting requirements of Part 228.

Correct Reference to the Federal Regulations

Many times Federal and/or State personnel must reference Federal regulations, verbally and/or in written form. It is important that the manner in which those references are made be technically proper. The following guidance is provided so that reference can be made in the technically correct manner.

The applicable regulations are found in 49 CFR—Transportation, Parts 200–299 under the title Chapter II—Federal Railroad Administration, Department of Transportation. CFR parts may be divided into subparts. Each rule within a part or subpart is titled as a “section” (symbol §). A section may be divided into subsections. A few examples of correct reference are as follows:

- Title 49 CFR Part 233, Section 5, or directly referred to as Section 233.5 or § 233.5;
- Title 49 CFR Part 234, Subpart D, Section 209, subsection (b)(1), or directly referred to as Section 234.209(b)(1) or § 234.209(b)(1);
- Title 49 CFR Part 235, Section 7, Subsection (b)(24)(vi), or directly referred to as Section 235.7(b)(24)(vi) or § 235.7(b)(24)(vi);

- Title 49 CFR Part 236, Subpart E, Section 587, Subsection (a)(4), or directly referred to as Section 236.587(a)(4) or § 236.587(a)(4).

Notice that there is a space between the section symbol (§) and the number, just like if section were spelled out, but no spaces between the section number and the subsection(s) (i.e., § 235.7(c)(24)(vi)).

Title 49 CFR Part 233 – Signal Systems Reporting Requirements – Overview

Title 49 CFR Part 233, “Signal Systems Reporting Requirements,” contains the reporting requirements and sets forth the responsibilities of the railroads to report to FRA, in a timely manner, the occurrence of the failure of an appliance, device, method, or system to function or indicate as required by Part 236 that results in a more favorable aspect than intended or other condition hazardous to the movement of a train (commonly termed false proceed signal failures), and specifically the occurrence of any accident/incident caused by signal failures. It also requires railroads to report, once every 5 years, current information surrounding their methods of operation, block signal systems, interlockings, traffic control systems, automatic train stop, train control, and cab signal systems, or other similar appliances, methods, and systems.

Part 233 requires the railroads to report any failure of a signal system or its components to function or indicate as intended within 15 days of the occurrence and requires the railroad to report within 24 hours by telephone, any accident/incident that is caused by a failure of a signal system or a component of a signal system to function as intended. A toll-free telephone number is maintained by FRA for such reporting. The 5-year signal systems report initially became due no later than April 1, 1997, and once every 5 years thereafter. This report is used by FRA to compile statistics on how our Nation’s railroads are being operated.

The technical application of Part 233 regulations is further defined in Volume II of FRA’s Signal and Train Control Technical Manual titled: “S&TC Regulations, Technical Applications, and Defect Codes.” The manual section addressing Part 233 provides authoritative guidance regarding the correct application of the Federal requirements, as well as a listing of the appropriate defined defect codes, regarding the reporting requirements of Part 233.

Title 49 CFR Part 234 – Grade Crossing Signal System Safety and State Action Plans – Overview

Title 49 CFR Part 234, “Grade Crossing Signal System Safety And State Action Plans,” contains the reporting requirements and sets forth the responsibilities of railroads regarding the installation, maintenance, inspection, testing, and repair of highway-rail grade crossing active warning systems, devices, and appliances; as well as recordkeeping, and activation failure and accidents caused by activation failure, reporting requirements.

The technical application of the Part 234 regulations are further defined in Volume II of FRA’s Signal and Train Control Technical Manual titled: “S&TC Regulations, Technical Applications, and Defect Codes.” The chapter addressing Part 234 provides authoritative guidance regarding the correct application of the Federal requirements, as well as a listing of the appropriate defined defect codes, regarding the inspection and determination of compliance related to highway-rail grade crossing active warning systems, devices, and appliances.

The rules contained in Part 234 are used by inspectors in their inspection and investigation activities, and are the **minimum** standards by which highway-rail grade crossing warning systems are evaluated for compliance. It is pertinent to note that many railroads have adopted their own standards that are more stringent than those set forth in Part 234. However, the FRA and State inspectors can enforce only the **minimum** standards set forth in Title 49 CFR Part 234.

Title 49 CFR Part 235 – Instructions Governing Applications for Approval of a Discontinuance or Material Modification of a Signal System or Relief from the Requirements of Part 236 – Overview

Title 49 CFR Part 235, “Instructions Governing Applications for Approval of a Discontinuance or Material Modification of a Signal System or Relief from the Requirements of Part 236,” prescribes the procedure to be used by a railroad to obtain FRA approval of a discontinuance or material modification of a signal or train control system or similar protective system or device. As noted above, these instructions were originally issued by the ICC in 1937. They have been amended many times to help ensure that discontinuation, modification, and regulatory relief issues are clearly defined. The railroads may examine these rules to determine the circumstances under which an application must be filed.

Part 235 also provides the format for such applications, and details the information the railroad must provide with its application. Part 235 further sets forth the procedure and details regarding the manner in which an application is to be filed in order to gain relief from any provision of Part 236, the RS&I. Such applications are acted on by FRA and relief is either granted, dismissed, or denied. In the matter of both block signal applications and applications for regulatory relief, FRA may take one of the following actions:

- Approve the application
- Approve the application with conditions
- Approve the application in part and deny the application in part
- Dismiss the application as either not being necessary or not being filed in accordance with the requirements
- Deny approval of the application in the interest of safety.

The railroad may petition FRA for reconsideration, and the agency may reconsider the application if the conditions and information warrant such an action.

Further, FRA may hold public hearings to permit a railroad to make its case and/or to permit interested parties and the general public to present arguments and information that might have a bearing on the case. A notice of such hearings will be published in the Federal Register, and such hearings are normally held at or near the application area to permit easier access by those most interested in the disposition of the application.

The technical application of the Part 235 regulations is further defined in Volume II of FRA’s Signal and Train Control Technical Manual. The chapter addressing Part 235 provides authoritative guidance regarding the correct application of the Federal requirements, as well as a listing of the appropriate

defined defect codes regarding the filing of block signal applications and requests for relief from the requirements of Part 236.

Title 49 CFR Part 236 – Rules, Standards, and Instructions Governing the Installation, Inspection, Maintenance, and Repair of Signal and Train Control Systems, Devices, and Appliances – Overview

Title 49 CFR Part 236, “Rules, Standards, and Instructions Governing the Installation, Inspection, Maintenance, and Repair of Signal and Train Control Systems, Devices, and Appliances,”—referred to as the Rules, Standards, and Instructions (RS&I)—governs the installation, maintenance, inspection, and testing of signal and train control systems on our Nation’s railroads.

The RS&I have been modified many times since its adoption in 1939. Major revisions were made to the RS&I on January 26, 1984, which became effective on February 27, 1984. Additional major revisions were made on March 7, 2005, becoming effective on June 6, 2005, when Part 236, Subpart H (the “processor-based” rule commonly known as the PTC rule) became a final rule. The most recent major revisions were made on January 15, 2010, becoming effective on March 16, 2010, when Subpart I (the mandate for PTC subsequent to the RSIA) became a final rule.

Part 236 now contains the provisions of the original Order 29543 as well as all the regulations pertaining to the installation, maintenance, inspection, testing, and repair of signal and train control systems, protective devices or systems, and other similar devices, systems, and methods. The RS&I are the technical regulations governing the way signal and train control systems are to be designed, installed, tested, and maintained.

The technical application of the Part 236 regulations is further defined in Volume II of FRA’s Signal and Train Control Technical Manual. The chapter addressing Part 236 provides authoritative guidance regarding the correct application of the Federal requirements, and lists the appropriate defined defect codes regarding the installation, maintenance, inspection, testing, and repair of signal and train control systems, devices, and appliances.

The rules contained in Part 236 are used by inspectors in their inspection and investigation activities, and are the **minimum** standards by which a railroad’s signal and train control systems are evaluated for compliance. It is pertinent to note that many railroads have adopted their own standards that are more stringent than those set forth in Part 236. However, FRA and State S&TC inspectors can enforce only the **minimum** standards set forth in title 49 CFR Part 236.

Hours of Service Law Governing Railroad Signal Employees - Overview

The Hours of Service Act (“Act”) was first enacted in 1907, and was intended to promote the safety of employees and travelers upon railroads by limiting the hours of service of certain railroad employees. The original Act, popularly known as “the 16-hour law,” covered only certain operating employees and employees engaged in the transmittal or receipt of train orders. The Act has been amended several times, with major changes being made in 1969, 1976, and 2008. First enacted into law in 1976, the limitations on hours of *signal employees* were clarified by the 1978 amendments.

FRA S&TC inspectors assigned to perform hours of service inspections or investigations should consult FRA Technical Bulletin G-00-02, "The Federal Hours of Service Laws and Signal Service." The guidance in this technical bulletin, along with that which may be attained from either the FRA S&TC Division or the Operating Practices Division at HQ, provides the guidance necessary for inspection and investigation related to railroad signal employees' hours of service. This technical bulletin is in the process of being updated to reflect FRA's final decisions regarding the correct interpretation of the most recent modifications to both the law and the recordkeeping and reporting requirements. Once completed, this manual will be revised accordingly with the reissued technical bulletin.

The technical application of the hours of service requirements are further defined in Volume II of FRA's Signal and Train Control Technical Manual. The chapter addressing hours of service—Rules of Signal Service, along with the recordkeeping and reporting requirements of Part 228, provides authoritative guidance regarding the correct application of the Federal requirements, regarding the limitations and associated recordkeeping and reporting requirements of the hours of service related to signal employees.

Personal Safety

Inspectors shall make a conscious effort to maintain their personal safety and the safety of those with whom they are working. Inspectors should watch for and voice a cautionary warning if they see any condition that might imperil any person comprising the inspection group, or any train movement. Inspectors should be especially alert and attentive when riding on the rails in hi-rail vehicles. The safety of everyone in the vehicle makes it imperative that each person aboard understands the rules and authority limitations under which they operate. Each person must be aware that their subsequent actions and vehicle movements must comply with those rules and authorities. Be particularly wary when inspections and/or investigations are being performed on or around multiple track main lines, and/or third-rail electrified territory.

The inspector shall strive in every way possible to comply with the provisions of the Roadway Worker Protection regulations found at 49 CFR Part 214. Failure to comply with these regulations sends the wrong message to railroad employees who may observe this action.

If the inspectors have their own safety equipment, they shall use it. If the railroad provides other additional safety equipment and requests that it be used, inspectors shall comply with the railroad's request.

Chapter 2 – Inspection and Investigation Procedures

Inventory of Inspection Territory (Regional Inspection Points)

Each inspector will use the inventory of signaling devices located within his or her inspection area to assist in the planning of inspection activity. Inspectors shall keep their Regional Inspection Points (RIP) inventory updated by noting the changes in signaling apparatus or systems while making their inspections. When requested, inspectors will provide the regional supervisory specialist with updated information to maintain a reliable inventory of signaling systems, devices, and appliances.

Inspection Priorities

The Regional Administrator, through the regional supervisory specialist, shall establish priorities appropriate to the urgency and seriousness of any alleged violation or other situation. If catastrophic and/or fatal accidents, or complaints of a serious nature, require the full usage of existing resources, the regional supervisory specialist shall accomplish the handling of the problems before releasing resources to resume the activity of regular inspection work.

Unless otherwise instructed, an inspector shall perform his or her duties in accordance with definite priorities. The priorities established are as follows:

<u>Priority</u>	<u>Category</u>
1	Accident Investigation
2	Complaint Investigation
3	BSAP/Waiver Application Investigation
4	False Proceed Signal Failure/Activation Failure Investigation
5	Assessments/Special Inspection
6	Regular Inspection

Discipline Inspection Guidance (DIG)

The following guidance was developed so that those working in the S&TC discipline may best determine the areas on which to focus the attentions of their limited resources. This guidance is intended to work in harmony with the allocation of resources identified in the NIP resource allocation model provided annually to each region, which the Regional Administrator may adjust as the need arises. This guidance may be revised as database programs, or other applicable information or processes, change.

Using Data Analysis to Determine Appropriate Focus

Purpose:

The purpose of using data analysis to determine appropriate areas of focus in ongoing S&TC inspection/investigative efforts is so that we can best determine how to use FRA's limited resources toward areas of identified concern, and therefore increase rail safety. Analysis of the data most applicable includes: signal-caused rail equipment accidents/ incidents, malfunction-related highway-rail grade

crossing accident/incidents, false proceed signal failures, highway-rail grade crossing active warning system activation failures, and past inspection efforts and findings. Other possible areas of consideration may become available on a case-by-case basis (e.g., high-profile accidents/incidents, complaints, waivers, etc.). Pertinent data related to these primary areas indicated above needs to be tracked, sorted, and analyzed on a national level, on specific railroads, within each specific region, and/or within each specific inspector's assigned territories.

The most uniformly accurate, thorough, and cost- and time-effective way to sort and analyze a major part of this data currently is through the detailed data programs developed by FRA's Knowledge Management staff. The exception will be the direct review and analysis, by HQ and the regions, of both the false proceed signal and activation failure databases. What follows is a description of the data retrieval, review, and analysis process within each category, including who should perform what function and how often, and how the findings should be determined, formatted, and disseminated.

1. Rail Equipment Accidents/Incidents:

The review of rail equipment accidents/incidents is performed in order to identify any that involved signal causes and sort them by cause, problem area, and any trends that warrant particular follow up or attention. While there are relatively few train accidents associated with signal causes, the S&TC discipline still needs to be informed when they occur. We further need to identify and separate those events that are truly "signal caused" in the sense of discipline-related technical or regulatory issues within a signal or train control system (e.g., false proceed signal failure) as opposed to those that are of a different nature (e.g., accidents involving yard, hump, or retarder operations, radio communication, hand signals, etc.). Both categories are important, but they may warrant different types of responses and follow up by FRA.

Railroads are required to file a Rail Equipment Accident/Incident Report (Form 6180.54) to report rail equipment accident/incidents to FRA within 30 days following the end of the month in which the event occurred. (See 49 CFR §§ 225.11 and 225.19) However, this is not the only reporting requirement when an accident/incident involves a signal system failure. Railroads are required to report to FRA any accident/incident arising from a signal failure within 24 hours of the event, through the National Response Center (NRC), by toll-free telephone. See 49 CFR § 233.5. Therefore, FRA should have very timely knowledge of the occurrence of these types of events. The S&TC HQ staff will review accident/incident reports being submitted by railroads for those that indicate a signal cause, determine if any necessary telephonic notification was forthcoming, and review for incomplete or incorrect reporting (particularly related to cause). Discrepancies in these reporting areas will be handled for correction with the reporting railroad.

The data to be retrieved should include the numbers and specifics associated with the previous full calendar year and the current year-to-date information. This data should be sorted monthly on a national perspective by railroad, region, and cause.

A HQ staff member will use the Office of Safety Analysis Web site to retrieve all train accident data associated with signal causes (see criteria below). Any accident/incident indicating a signal cause will be listed along with its associated individual detailed report (Form 6180.54).

This information will be provided directly to the S&TC regional supervisory specialist of the region in which the event occurred, with copies provided to the RA, DRAs, and the S&TC Staff Director. A copy

also will be saved to a designated file on the FRA's R drive. Appropriate regional follow up will then be expected with the ultimate findings/ actions taken reported back to HQ. The idea is to access and review the data, identify issues and trends (including any reporting discrepancies warranting correction), draw conclusions, and formulate possible recommendations for action. The designated S&TC HQ staff will create a "running" summary report of the pertinent information surrounding the events, sorted by region and by railroad, which will also be maintained in the file on the R drive.

Criteria for reviewing and analyzing railroad-submitted rail equipment accident/incident reports that indicate a signal cause include:

- Who: S&TC HQ staff (the S&TC regional supervisory specialists, their regional managers, or field inspectors may perform the same review as the need may arise).
- When: Monthly review (info then provided to the region for follow up on a case-by-case basis).
- What: S&TC HQ staff shall conduct a monthly review of the data and email to the regions any issues for their follow up on a case-by-case basis; a "tally report" of events and actions taken will be maintained by HQ.
- Action: Inspection efforts or other appropriate follow up will be identified and performed.

2. Highway-Rail Grade Crossing Accidents/Incidents:

The review of highway-rail grade crossing accidents/incidents is performed in order to identify all that may have involved active warning system malfunctions and sort them by cause, problem areas, and any trends that warrant particular follow up or attention. While there are relatively few grade crossing accidents associated with warning system malfunctions, the S&TC discipline still needs to be informed about their occurrence. We further need to identify and separate those events that are truly malfunctions in the sense of discipline technical or regulatory issues related to the functioning of the system (e.g., involving activation failure) in comparison to those that are related to different disciplines (e.g., involving hi-rail vehicles, on-track equipment, or other movements not expected to activate the warning system). Both categories are important, but they may warrant different types of responses and follow up by FRA.

Railroads are required to report highway-rail grade crossing accident/incidents to FRA within 30 days following the end of month in which the event occurred using the Highway-Rail Grade Crossing Accident/Incident Report (Form 6180.57). (See 49 CFR §§ 225.11 and 225.19.) Railroads are also required to report to FRA within 24 hours, using a toll free telephone number, the occurrence of a highway-rail grade crossing accident/incident involving an activation failure. (See 49 CFR § 234.7.) As a result, FRA should have very timely knowledge of the occurrence of these types of events. The S&TC HQ staff will review grade crossing accident/incident reports being submitted by railroads that indicate a warning system malfunction, determine that any necessary telephonic notification was forthcoming, and review for incomplete or incorrect reporting (particularly related to the functioning of the warning system). Discrepancies in these reporting areas will be handled for correction with the reporting railroad.

The data that should be retrieved includes the numbers and specifics associated with the previous full calendar year and the current year-to-date information. This data will be sorted monthly on a national

level by railroad, region, malfunction type, and qualifying codes and associated comments to identify involvement of bonafide malfunctions of an active warning system. The warning system conditions applicable and as reported in Block 33 of each detailed report (Form 6180.57) as confirmed include: greater than 60 seconds (possible false activation), less than 20 seconds, and no warning (both of the latter being activation failures by definition).

The process begins by a HQ staff member using the Office of Safety Analysis Web site to retrieve all highway-rail grade crossing accident/incident data associated with confirmed warning system malfunctions. (See criteria below).

A listing of all the qualifying events with pertinent information, to be accompanied by an associated individual detailed report for each incident (Form 6180.57), will be provided directly to the S&TC regional supervisory specialist, with copies provided to the RA and DRAs and the S&TC Staff Director. A copy also will be saved to a designated file on FRA's R drive. Appropriate regional follow up would then be expected with the ultimate findings/actions taken reported back to HQ. The idea is to access and review the data, identify issues and trends (including any reporting discrepancies warranting correction), draw conclusions, and formulate possible recommendations for action. The designated S&TC HQ staff will create a running summary report of pertinent information surrounding the events addressed, sorted by region and railroad, that will be maintained in the file on the R drive.

Criteria for reviewing and analyzing railroad-submitted highway-rail grade crossing accident/incident reports that indicate a signal cause include:

- Who: S&TC HQ staff, S&TC regional supervisory specialists, their regional managers, and field inspectors, as the case may be.
- When: Monthly review (info then provided to the region on a case-by-case basis).
- What: S&TC HQ staff shall conduct a monthly review of the data and email to the regions any issues for follow up on a case-by-case basis; a tally report of events and actions taken will be maintained.
- Action: Inspection efforts or other appropriate follow up identified and performed.

3. False Proceed Signal Failures:

The intention is to identify when and where false proceed signal failures occur and sort for top causes, specific problem areas (railroads, geographic, or topical), and any trends that warrant specific attention. Railroads are required to report false proceed signal failures to FRA by use of a False Proceed Signal Report (Form 6180.14) within 15 days following the event. (See 49 CFR § 233.7.) Railroads are to submit these reports to the FRA regional office of the region in which the railroad is headquartered or where their reporting office is located. The S&TC regional supervisory specialists then enter false proceed signal failure information pertaining to their respective regions into a national false proceed database, using the information on the report combined with the findings of their investigation of these incidents. Each quarter, the designated S&TC HQ staff member will review the data from national, railroad system, and regional perspectives and help identify possible trends, areas of concern, and/or any specific necessary focus. The S&TC regional supervisory specialists should already have knowledge of these issues from the regional perspective. Reporting concerns or deficiencies will also be identified and handled for correction.

The designated S&TC HQ staff will create a summary report for each region and submit it to the S&TC Staff Director for concurrence. These reports, consisting of a summary of findings and possible recommended actions, will be emailed to the S&TC regional supervisory specialists with copies provided to the RA/DRAs and the S&TC Staff Director. The regional personnel may then review these reports and make their own additional determinations. It is expected that the S&TC regional supervisory specialists will subsequently email a report with applicable specific guidance to their various inspectors. Conclusions and actions taken will then be summarized and provided to HQ with copies provided to the inspector's RA/DRAs.

For a national, railroad system, or regional review, start the process using the FRA secure Web site home page: <https://safetydata.fra.dot.gov/secure/site>. Once logged into the system, start the following processes by selecting the Activation Failure/False Proceed program, then select the Browse/Edit/Update Record program under False Proceed.

Steps for reviewing and analyzing reports of false proceed signal failures by railroads:

Who:	S&TC HQ staff, the S&TC regional supervisory specialists and their regional managers.
When:	Quarterly
What:	S&TC HQ staff shall access and review the report, create summary reports, and email their findings to the regions for their further review. Regions will email guidance to the inspectors, and will email their conclusions and actions taken to HQ with copies sent to their RA and DRAs.
Action:	Inspection efforts or other appropriate follow up identified and performed.

4. Highway-Rail Grade Crossing Activation Failures:

The intention is to determine when and where activation failures occur and sort for top causes, specific problem areas (railroads, geographic, or topical), and any trends that warrant specific attention. Railroads are required to report activation failures to FRA by filing a Highway-Rail Grade Crossing Warning System Activation Failure Report (Form 6180.83) within 15 days following the event. See 49 CFR § 234.9. These reports are to be submitted by the railroads to the FRA regional office of the region where the railroad is headquartered or their reporting office is located. The S&TC regional supervisory specialists will then enter activation failure information pertaining to their respective region into a national activation failure database, using the information on the report combined with the findings of their investigation of these incidents. Each quarter, the designated S&TC HQ staff will review the information within that data from a national, railroad system, and regional perspective and help identify possible trends, areas of concern, and/or any specific necessary focus or other type recommendations. The S&TC regional supervisory specialists should already have knowledge of these issues from the regional perspective. Reporting concerns or deficiencies will also be identified and handled for correction.

The designated S&TC HQ staff will create a summary report applicable to each region and submit it to the S&TC Staff Director for concurrence. These reports, consisting of a summary of findings and possible recommended actions, will be emailed to the S&TC regional supervisory specialists with copies provided to the RA and DRAs and the S&TC Staff Director. The regional personnel may then review these reports, make their own additional determinations, and it is expected the S&TC regional supervisory specialists will subsequently email a report with applicable specific guidance to their various inspectors.

Conclusions and actions taken will then be summarized and provided to HQ with copies provided to their RA and DRAs.

For a national, railroad system, or regional review, the process begins by using the FRA secure Web site home page (<https://safetydata.fra.dot.gov/secsite>). Once logged into, start the following process by selecting the Activation Failure/False Proceed program then select the Browse/Edit/Update Record program under Activation Failure.

Steps for reviewing and analyzing reports of highway-rail grade crossing activation failures by railroads:

Who:	S&TC HQ staff, S&TC regional supervisory specialists, and their regional managers
When:	Quarterly
What:	S&TC HQ staff shall access and review; create summary reports; email to the regions; further regional review; email guidance to the inspectors.
Action:	Inspection efforts or other appropriate follow up identified and performed.

5. Signal Inspection Data:

The intention is to analyze past inspection efforts, findings, and outcomes and sort for units inspected, both the highest number and the most serious defective conditions found, violation recommendations, specific problem areas (national, railroads, or geographic), any trends that warrant particular attention, and to identify S&TC inspector activities relative to locations or subjects of concern. The data FRA will retrieve includes the above associated data within the previous 2 full calendar years and the current year-to-date information. This data will be sorted on a national level by railroad system, region, and inspector. The process begins by the Knowledge Management staff using a predetermined Special Analysis System (SAS) tool to retrieve all the S&TC HQ designated inspection information. The Knowledge Management staff will provide this information to the S&TC Staff Director and designated S&TC HQ staff on a quarterly basis by placing the data within a designated folder on the S&TC HQ server R drive. The S&TC Staff Director and/or designated S&TC HQ staff will in turn access and review the data, identify issues and trends, draw conclusions, and formulate possible recommendations.

The designated S&TC HQ staff will create a summary report applicable to each region and submit it to the S&TC Staff Director for concurrence. These reports, consisting of a summary of findings and possible recommended actions, will be emailed to the S&TC regional supervisory specialists with copies provided to the RA and DRAs. The regional personnel may then review these reports and make their own additional determinations, and the S&TC regional supervisory specialists will subsequently email a report with applicable specific guidance to their various inspectors. Conclusions and actions taken will then be summarized and provided to HQ with copies provided to their RA and DRAs.

Steps for reviewing and analyzing signal inspection data:

Who:	Knowledge Management staff, S&TC HQ staff, the S&TC regional supervisory specialists, their regional managers, and field inspectors, as the case may be.
When:	Quarterly

- What: Knowledge Management staff will provide a quarterly sort of inspection data. S&TC HQ staff will access and review, create summary reports, and email to the regions for their further review. Regions will email guidance to the inspectors, and email conclusions and actions taken to HQ with copies provided to their RA and DRAs.
- Action: Inspection efforts or other appropriate followup identified and performed.

Preparation for Inspection or Investigation

Before leaving their duty station to conduct inspections or investigations, inspectors should know what type of system they will be inspecting during the coming week. If an inspector is not fully familiar with the territory, he or she should review an inventory of the railroad line segment to be inspected. Further, the inspector should obtain and study the railroad's timetable for the section to be inspected. The railroad's timetable will provide information about the type of signal system installed, the maximum authorized speed, and any speed restrictions that might be in effect in the inspection area. Some timetables also list the locations of special protective devices such as slide fences and high-water detectors.

Before leaving their duty station, inspectors will make sure that they have the necessary equipment to generate inspection report forms, and a copy of the current applicable portions of the Technical Manual identifying appropriate application of the regulations and the defect codes to be used to report defective conditions. Inspectors should also have a copy of the appropriate portions of the Technical Manual available to reference when questions of proper rules application arise.

Notice of Inspection or Investigation

A signal inspection requires advance planning by the FRA or State inspector and by the railroad officers and/or other employees that will accompany the inspector. Railroad officers need to arrange for employees to assist in the inspection and/or testing. The railroad must make travel arrangements and notify the affected employees. If on-the-rail transportation is required, arrangements must also be made to obtain a vehicle for such use.

It is the inspector's responsibility to notify the railroad in advance of when and where the inspection will be made. Care should be taken to not give excessive notice (i.e., 3+ weeks), but sufficient notice (i.e., 1–2 weeks) should be given to the extent possible in order to enable the railroad officers to make suitable arrangements for a tentative inspection.

While an unaccompanied inspection is permitted, such inspection activity is not encouraged and should only occur on a very limited basis. On an unaccompanied inspection, the inspector's activities are limited to making visual inspections of signals, switches, and appliances. Since no railroad representative would be available to grant access to signaling equipment and circuits, the inspector would not be able to observe any tests, or inspect the relays, other signal apparatus, or the circuit plans inside of signal instrument cases and equipment housings.

If a railroad officer declines to accompany or fails to provide someone else to accompany an inspector due to previous commitments, an inspector should arrange to make the inspection at a later date. In those

rare occasions when it appears that a railroad officer is deliberately thwarting all efforts of an inspector to make an inspection, the inspector should contact his or her regional supervisory specialist for assistance.

Time of Inspections and Investigations

Normally, inspection activity will be conducted during the hours of the railroad signal employee's regular working day. It is not FRA policy to require a railroad employee to work overtime making routine or regular inspections. The regular inspection day will commence at the railroad employee's regular starting time and will include a lunch period consistent with that of the employee. The inspector will cease his or her inspection activity at a time that will permit the railroad employees to return to the point where they normally quit each day by their regular quitting time. Where the railroad employees accompanying the inspector are not returning to their headquarters daily, the inspection activity should cease at a time that will permit the railroad employees to reach the place where they are staying by their regular quitting time. This should not be construed as to encourage or permit an FRA inspector to require a railroad to cease work to correct a defective condition discovered during the day's inspection. It is possible and very likely that at some time during inspection activity, a condition will be found that will require immediate corrective action, even though such action cannot be completed during the hours of a regular working day.

At times during accident investigations, assessments, and special investigations, inspection activities may be conducted outside of the hours of the regular duty day. When such activities are performed outside of regular hours, the inspector will make appropriate arrangements with the railroad to provide employees who can perform tests and assist in the inspections.

It is also important to note that inspections of onboard automatic train stop (ATS), train control (ATC), or cab signal devices (ACS), will sometimes require inspection activities at odd hours. Inspectors are encouraged to make ATS, ATC, and ACS inspections at times other than regular daytime duty hours to ascertain that proper tests and inspections are made on all locomotives during all duty shifts. The inspector shall receive approval from his or her regional supervisory specialist before performing inspections outside regular duty hours.

Conference Prior to Inspection or Investigation

Before starting an inspection or investigation, inspectors should introduce themselves to the parties who are accompanying them. The inspector shall obtain and make a list of the names and titles of all who will take part in the inspection or investigation.

The inspector should explain the reasons for the inspection or investigation as being one or more of the following:

1. Routine or regular inspection activity conducted to determine railroad compliance with the RS&I; Grade Crossing Signal System Safety; and or other Federal regulations.
2. Inspection and testing of the signal systems in connection with an accident investigation.
3. Inspection and testing of the signal systems in connection with the performance of a safety assessment of the railroad.

4. Inspection and investigation of a block signal application or an application for relief from a section of the regulations.
5. Investigation of a reported false proceed signal failure or activation failure.

(**Note:** When making an inspection in connection with the investigation of a complaint, the inspector shall take particular care not to reveal the purpose of the inspection or the identity of a complainant.)

All parties should be informed that the inspector's objective is to determine compliance with Federal regulations in order to improve the safety of railroad operations, railroad employees, and the general public.

Followup Inspection or Re-inspection

A followup or re-inspection should be made: (1) after an assessment indicates that a problem exists on a particular railroad or portion of a railroad; (2) after an accident, and it has been determined that some prevalent condition existing on the railroad caused or contributed to the accident; (3) after an emergency order involving the railroad signal systems has been issued by the FRA; (4) where there has been a series of false proceed signal failures and/or highway-rail grade crossing activation failures caused by similar or related defective conditions; (5) where the previous inspections have found a higher-than-average number of defective conditions; and/or (6) where an order or BSAP or waiver approval has contained specific condition(s), and it needs be confirmed that the applicable condition(s) are met.

Where an inspector finds, during a week's work period or during an inspection of a fairly long line segment, that the ratio of defective conditions found to the number of signal units inspected, (the defect average or ratio) is higher than 15 percent, the inspector will schedule a re-inspection of the area having the high defect average. This line segment or signal installation might be a subdivision, a signal supervisor's territory, a signal maintenance territory, or even a certain interlocking. The re-inspection shall be conducted within 60 days of the first inspection. Should the re-inspection find a defect average higher than 15 percent, another re-inspection will be scheduled. Such re-inspections will continue until the defect average falls to an acceptable level.

The instruction to make a re-inspection within 60 days of any system wherein the inspector finds a defect average of more than 15 percent, does not preclude the inspector from making re-inspections on his or her own initiative. The inspector has the prerogative to reschedule any area for re-inspection, or more frequent inspection if, in the inspector's judgment, such inspection is necessary to attain compliance and therefore safety.

Refusal to Permit an Inspection or Investigation

When trying to gain access to railroad property, inspectors may answer reasonable questions regarding the scope and purpose of the investigation. However, if access is denied, inspectors should ask the reason, leave the premises, and report the matter to their regional supervisors. The regional supervisors will then contact FRA HQ management and the Office of Chief Counsel for further instructions. Under no circumstances should inspectors engage in disputes with any railroad or shipper representative who refuses to permit an inspection.

Note: Reference the FRA General Manual for further guidance regarding interference with inspection or investigation activities, handling strikes or labor disputes, forcible resistance to inspections, use of credentials, and etc.

Waiver of Responsibility

The inspector shall not sign any form of release or agree to any form of waiver. If, after the inspector has pointed out FRA's authority under the Signal Inspection Act of 1937 and the Federal Railroad Safety Act of 1970, a railroad still insists that an inspector sign some sort of release before entering upon the railroad's property, the inspector shall suspend the inspection or investigation and promptly report the circumstances to his or her regional supervisory specialist.

The inspector may sign a visitor's register, property pass, or any form or book that the railroad uses to control entry and movement of persons on its property, so long as such signature does not constitute any form of waiver or release of prosecution or liability.

Unusual Problems or Incidents

Should the inspector encounter an unusual condition or situation that is questionable, but is not covered by regulations or guidance issued by FRA, the inspector should carefully weigh any action he or she takes.

If the condition or situation clearly represents a danger to the public, railroad employees, or to the operation of trains, the inspector is expected to take action to ensure that the danger is mitigated. The inspector should notify his or her regional supervisory specialist and give full details of the situation as soon as possible.

If the condition or situation does not represent an imminent danger to the railroad, its employees, or the general public, the inspector should contact his or her regional supervisory specialist and obtain advice and further guidance.

Cooperation of Personnel with Industry and other Governmental Agencies

The inspector should maintain a cordial relationship with the railroads, the manufacturers of railroad signaling equipment, and other governmental agencies. However, an inspector should not offer help or cooperation on any project or investigation without specific authorization of the Regional Administrator, Deputy Regional Administrator, or regional supervisory specialist. The regional supervisory specialist shall not authorize any such cooperation without specific authority from the Regional Administrator's office.

Chapter 3 – Gaining Compliance

Purpose

The purpose of this chapter is to provide guidance to Federal and State personnel for planning and conducting inspections and other related activities for determining appropriate levels of compliance with the Federal regulations.

Regular Inspections

Each inspector will sufficiently cover his or her inspection territory to assure that each railroad and/or system is inspected on a regular basis. However, the inspector shall direct his or her efforts to the railroads or areas that are most in need of improvement as indicated by previous inspection defect ratios, accident data, and/or the occurrences of false proceed signal failures and activation failures of highway-rail grade crossing warning devices.

Each inspector has been furnished an S&TC Technical Manual. The technical manual provides detailed technical guidance covering the proper application of the S&TC regulations (primarily Parts 233, 234, 235, and 236).

In line with the guidance provided by the technical manual and general compliance policy, and because it is necessary to direct resources toward areas that are most in need of an inspector's attention, the inspection program will emphasize re-inspection within 60 days of those systems where high-defect ratios are noted. Major test points for ACS, ATS, and ATC systems should be inspected monthly. Minor test points at outlying points should be inspected at least once every 6 months. Moveable bridges that are protected by an interlocking signal arrangement should be inspected at least once annually.

The defect average is determined by dividing the number of defective conditions cited by the number of units inspected.

By following these guidelines, FRA will be involved with systems that exhibit the highest percentage of defective conditions and on railroads where the most improvement in safety can be attained. Systems having excellent compliance levels will normally not be scheduled for re-inspection unless it is needed in connection with the investigation of accidents, complaints, applications, false proceed signal failures, highway-rail grade crossing activation failures, and assessments or other special assignments.

Each inspector should strive to average at least one inspection per workday, except when on leave, performing a particular investigation or special assignment or completing the associated reports, or in training.

To assure the quality of inspection activity, the following guidelines are provided:

- S&TC Inspection Task - Time Allowance Table -	
Note: Times are shown as averages and they will vary in relation to system and equipment complexity and unit count	
Inspection Task	Time Allowed
Inspect each signal	20 minutes
Inspect each switch	20 minutes
Inspect each time locking circuit, approach locking circuit, route locking circuit, cut section, slide fence, dragging equipment detector, etc.	20 minutes
Inspect each ATC, ATS, or ACS equipped locomotive	30 minutes
Inspect each ATC, ATS, or ACS inductor, acknowledgement loop, or test loop	10 minutes
Inspect each highway-rail grade crossing warning device	45 minutes
Inspect each record of test	2 minutes
Investigate – BSAP	3 days
Investigate – Complaint	3 days
Investigate – False Proceed	2 days
Investigate – Activation Failure	2 days

It is the responsibility of each regional supervisory specialist to provide technical guidance to the inspectors in his or her region to effectively direct the safety program. Each regional supervisory specialist shall devise systems of monitoring the safety program to assure satisfactory progress, and will coordinate technical aspects of the program with appropriate S&TC HQ staff.

Conducting an Inspection or Investigation

An S&TC inspector’s primary duty is to perform effective inspections and investigations to ascertain whether the railroads are installing and maintaining their signal and train control systems, to include highway-rail grade crossing active warning systems, in compliance with S&TC regulations. The S&TC inspector is also expected to monitor the railroads’ activities to see that they are properly reporting as required by Parts 233 and 234, and to see that the railroads are complying with regulations governing the discontinuance and/or material modification of railroad signal systems (Part 235).

The inspections for compliance with Parts 234 and 236 require the inspector to visually inspect the signal systems and observe railroad personnel in the performance of tests to detect systems, devices, and apparatus that fail to meet the requirements of the regulations. It is important to note that the Federal regulations are minimum requirements and that many railroads have more stringent rules than FRA. The inspector is advised that he or she can enforce only FRA's rules and standards.

The inspector should always ascertain whether the railroad employees are using test equipment that is in suitable condition to make the required tests. Further, the inspector shall take care that no tests are performed that will imperil the safety of an approaching train or of highway users, or of a train that is within the limits of a system where tests are being conducted. For instance, ground tests shall not be conducted while a train is approaching passing over or passing by any switch or signal of an interlocking or controlled point. An inspector should be careful when ground tests or locking tests are being made, since such tests often affect control circuits at an adjoining interlocking or controlled point. An inspector should also be careful that testing does not create inappropriate highway-rail grade crossing active warning system malfunction.

The inspection should be started at a particular point, (e.g., the end of the inspector's territory, the end of the railroad's signal territory, where the previous day's inspection ended, etc.). The inspector should take each signal and/or switch location in turn, inspecting plans, equipment, and apparatus.

The inspector should ask the railroad's employees to make appropriate tests on the various apparatus and circuits of the systems under inspection. The inspector should not personally perform tests on the railroad's signal systems, but should observe the tests made by the railroad's employees to ascertain that the tests are made in accordance with the railroad's instructions and the requirements of FRA's regulations, that the apparatus being tested meets the requirements set by the regulations, and that the apparatus tested is in condition to perform its intended function. An inspector shall neither require nor permit a railroad employee to perform a test that will imperil the safety of train movements, highway users, or otherwise create an unsafe condition.

The inspector shall point out each condition found that does not comply with the Federal requirements and shall notice what corrective action is taken by the railroad representatives and employees. The inspector shall make notes and keep track of the equipment inspected and the defective conditions noted during the inspections.

In no case shall an inspector require or permit a railroad to leave uncorrected a condition that might imperil the movement of a train or engine. If it is evident that the railroad's representative accompanying the inspector intends to leave a dangerous condition uncorrected, even after the inspector points out the inappropriateness of doing so, the inspector shall take immediate action to contact a higher official of the railroad and make the railroad aware of the condition. Should this course of action fail to achieve the needed corrective action, the inspector should immediately communicate the particulars of the situation to his or her regional supervisory specialist or other regional manager.

Conference During and After an Inspection or Investigation

After the day's inspection activity on a railroad is finished, the inspector will make out his or her inspection reports, listing each defective condition he or she noted during the day's work. The inspector

will then go over each item listed on the inspection reports with the railroad representative to make sure that the representative understands each item listed on the report(s) as defective, the location of each such condition, and what sort of corrective action is indicated. A copy of each inspection report will be given to the railroad's representative before the inspector departs from the railroad's property.

Special Inspections and/or Assessments

Special inspections, team inspections, and/or assessments are special inspections conducted to develop sufficient information to prepare a detailed evaluation of all or a major portion of a railroad system. All special inspection activities will be governed by the current instructions issued by FRA HQ for the conductance of such projects.

Before starting to make inspections in connection with an assessment, the inspector should review all of the requirements of this chapter and be prepared to obtain sufficient information to complete his or her narrative report.

Assessments will normally be assigned by the Associate Administrator for Railroad Safety/Chief Safety Officer, and in most cases, will involve more than one region. However, this does not prohibit the Regional Administrator from assigning an assessment on a railroad on a regional basis.

Inspection reports shall be submitted for all inspections using the appropriate predetermined source code. All conditions that are not in accordance with the requirements of the regulations shall be duly reported on an Inspection Report Form F6180.96. During assessments or special inspection activities, violation reports will be filed in accordance with the instructions governing the conductance of such projects.

An assessment narrative report shall be prepared by the inspector and shall contain sufficient information to support the conclusions of the inspector as to the degree of compliance with FRA's signal regulations found and the overall condition of the railroad's signal and train control systems. Further, the report should contain logical recommendations to present to the railroad to affect an improvement in the condition of the railroad's signal and train control systems.

The narrative report should be broken up into sections, each covering a defined line segment. In most cases, each line segment can be defined by the limits of a subdivision or district. When describing the line segment in the report, it should be identified by division, subdivision or district, milepost limits, and major cities. In some cases, it may be appropriate to break up extremely long subdivisions into milepost-to-milepost segments because of different types of signal systems installed on the subdivisions (such as 100 miles of ABS and 150 miles of TCS).

Each line segment should be identified as to the type of signal systems installed, the maximum authorized speed, the number and kind of trains per day (passenger-freight), whether Amtrak operates over this line segment, and the amount of hazardous materials transported over the line segment. To provide further guidance during assessment activities, the following will provide a basic list of items an inspector should obtain or note. This list should not be considered as all inclusive, and the administrator or team leader of the assessment may require additional information. The inspector must be alert for special circumstances or conditions to be included in his or her assessment report, as follows:

- Note the size of territories of the signal maintainers, inspectors, and supervisors. Does each employee appear to have enough time to do the things he or she is supposed to be performing, or is his or her territory or area of responsibility so large as to make it impossible to perform all of his or her duties? The inspector should be alert and observe the safety consciousness and work habits of the employees so that he or she can adequately address the issue in the narrative report to be submitted at the end of the assessment.
- Note the tools, test equipment, and material furnished to the signal maintainers and inspectors. Are the tools sufficient and in good condition? Are such items as the meters, shunt wires, relay test sets, and insulation resistance test sets adequate and appropriate to make proper and meaningful tests? Are the materials furnished adequate and appropriate to make the necessary repairs and replacements to keep the signal systems in good repair and functioning properly?
- The inspector should interview the railroad's signal department employees during his or her inspection activities to determine the level of training the railroad is furnishing its employees. It should be noted if the training is available for newly hired employees and older employees who were hired before the training program began.
- Inspect the records of tests and determine whether the required tests are being properly performed on a timely basis. Ask signal maintainers and inspectors to perform a variety of tests to determine if they are properly trained and know how to make the required tests.
- Note the general condition of the signal systems during the inspection activity. While the Inspection Report Form (F6180.96) will show the defective conditions found, it will not indicate such conditions as rusted out and/or deteriorated instrument housings, equipment in need of painting, rotting poles and crossarms, and brush growing under pole lines.
- When the assessment includes the inspection of locomotive onboard ACS, ATS, and ATC devices, the inspector should make inspections and observe tests of each device. The inspector should also note the overall condition of the locomotive equipment. The inspector shall cite all conditions not in compliance with the Federal regulations on an inspection report and file violation reports when appropriate. He or she should also determine, through casual interviews, what type of training the railroad provides the personnel who maintain and test the onboard devices. Further, the inspector should try to determine if the railroad is complying with the Hours of Service Act as it pertains to employees performing departure tests, daily or after trip tests, or periodic tests of the onboard devices.
- When making the final assessment report, the inspector should determine:
 - His or her overall defect ratio (defects cited divided by the number units inspected)
 - A breakdown of what the defects were
 - How many reports recommend violation
 - A breakdown of what the violations were
 - How many false proceed signal failures and activation failures have occurred in the area inspected within the last 2 years
 - Whether the defective conditions noted cause or contribute to other signal system or equipment failures

- The overall condition of the systems inspected
- The overall condition of the signal employee's qualifications and training, etc.

Special Investigations

Special investigations are assigned by the Regional Administrator, his or her representative, or by HQ staff through the Regional Administrator. There are at least five different types of investigations that inspectors routinely make. They are:

1. Accident Investigations
2. Complaint Investigations
3. Block Signal and Waiver Applications
4. False Proceed Signal Failure Investigations
5. Highway-Rail Grade Crossing Activation Failure Investigations

Inspectors may also be assigned other types of specific special investigations as the need arises.

Accident Investigation

Accident investigations will normally be assigned by the Associate Administrator for Railroad Safety/Chief Safety Officer. This does not prohibit the Regional Administrator from assigning accident investigations on a regional basis. Technical bulletins have been issued that define the types of accidents to be investigated and the procedures to be followed when making such investigations. Inspectors should also refer to the latest guidance found in FRA's General Manual.

If an S&TC inspection is made during the investigation of an accident, the inspector shall complete an Inspection Report Form F6180.96. The appropriate source code on the inspection report shall be shown. If the accident that is under investigation has been assigned an accident investigation number by HQ or by the region, the number shall be entered in the space titled "File Number." Refer to the Railroad Inspection System for Personal Computers (RISPC) program for specific instructions concerning Form F6180.96.

Complaint Investigation

Complaints must be acted upon as soon as possible in keeping with the priorities and procedures contained in this manual and FRA's General Manual.

The regional supervisory specialist will establish priorities regarding the action to be taken on individual complaints. Complaints alleging the existence of eminent danger shall be accorded the highest priority. High priority shall also be given to complaints alleging conditions which appear to be serious safety concerns.

If an oral complaint is made to an inspector during the course of an inspection, he or she should act on it to the extent possible as part of that inspection. If additional days will be involved in investigation of the complaint, the inspector must contact the regional specialist for guidance on any further handling of the complaint.

When acting on a complaint, the inspector should fully investigate the facility or systems involved in the alleged unsafe condition and/or noncompliance with FRA regulations.

The procedures for handling complaints are:

- Upon receipt of a written complaint, the Regional Administrator, or a member of his or her staff, will obtain a control number (complaint file number from CCM) to be used on all correspondence concerning the complaint, as well as the report of the investigation of the complaint.
- Complaints that are received at FRA HQ will be assigned a control number before being sent to the applicable regional office for investigation.
- The regional supervisory specialist will assign and schedule the investigation. For complaints directly received by the region, when the investigation is completed, the regional supervisory specialist will review the inspector's report and prepare a closeout letter for the Regional Administrator's signature. It would be helpful if a copy of the completed closeout letter and the inspector's report is forwarded to the S&TC HQ staff for their information and for the purpose of recognizing possible trends or systemic issues. For complaints received by headquarters, HQ staff will prepare an interim response to be provided to the complainant, and the complaint will be assigned to the applicable region for investigation. When the investigation is complete, the regional supervisory specialist will review the inspector's report and forward the report with applicable attachments to the S&TC HQ staff for preparation of a closeout letter. A copy of the subsequent closeout letter shall be provided to the region for their information and files.
- The complaint should be evaluated to determine if the alleged violation or danger exists. The inspector should call or contact the complainant and obtain details of the alleged violation or danger. It may be desirable to meet with the complainant in person if possible.
- When a regional or State office receives an oral complaint, in person or by telephone, action must be taken. This action can take the form of a formal investigation or be handled very much like a regular inspection.
- If it is determined that a violation of FRA regulations or danger might exist, an investigation shall be scheduled as soon as practicable. If there appears to be an imminent danger to the operation of trains, to railroad employees, or to the general public, immediate action must be taken to mitigate such danger.
- The investigation shall be conducted in accordance with the instructions in this manual. Normally, the investigation should be in detail and cover not only the alleged violations and/or dangerous conditions, but also the other facilities and systems in the immediate area.
- After a field investigation of all of the allegations has been completed, the inspector will prepare a written narrative report describing the facility or system that was inspected, the conditions found, what corrective action was taken by the railroad, and what action was taken by the inspector. An inspection report, Form FRA F6180.96, shall be submitted to cover each such inspection using appropriate source code and the complaint file number shall be shown in the space titled, "File Number." If allegations of a violation of FRA's signal regulations are found to be valid, a

violation report should be submitted in most instances. The inspector will forward the original report with all documents and backup materials to the regional office for review and handling as described above.

Block Signal or Waiver Application Investigation

Part 235, *Instructions Governing Applications for Approval of a Discontinuance or Material Modification of a Signal System or Relief from the Requirements of Part 236*, specifically provides the mechanism for a railroad to make application to discontinue or materially modify signal systems on its property, or to ask for relief from any of the requirements of Part 236, the RS&I.

A thorough field investigation and a complete report are required on each application for relief from the requirements of the RS&I (RS&I-Ap) and on each application for approval of a discontinuance or material modification of a block signal system, interlocking, ATS, ATC, and ACS device (BS-Ap).

The information submitted by the railroad in accordance with the provisions contained in Part 235 will form the basis for the investigation and report on each BS-Ap and RS&I-Ap. This information should be checked at the time of investigation to ensure that it is correct for use in the preparation of the report and in order that additional information, if necessary to complete the report, may be obtained promptly. Two copies of this information are provided with each application assigned for field investigation. One copy is to be retained in the inspector's file.

Each application should be promptly investigated and the field investigation report should be prepared and mailed in time to reach HQ staff prior to the closing date shown on the assignment.

False Proceed Signal Investigation

Upon receipt of a False Proceed Signal Report (Form FRA F6180.14), the regional supervisory specialist shall determine if the false proceed signal failure occurred within his or her region. If it did not, the regional supervisory specialist should immediately furnish a copy of the report to the region in which the false proceed signal failure did occur. All reports of false proceed signal failures shall be investigated, the difference being only the degree of investigation warranted. The regional supervisory specialists, for all occurrences within their respective regions, shall ensure the following procedures are followed.

Informal Investigation

Each false proceed signal failure incident reported by a railroad shall receive, at a minimum, an "informal" investigation that shall consist of at least an inquiry to ascertain that the information submitted is accurate and complete and that the cause reported is appropriate. In addition, a determination shall be made as to whether any reportable accident/incident (as defined in 49 CFR § 225.5) occurred as a result of the false proceed and whether any further "formal investigation" is necessary. Each informal investigation shall include a verbal conversation between the regional supervisory specialist or an S&TC inspector, and an appropriate representative of the railroad (i.e., signal supervisor, signal manager, etc.). The findings of each informal investigation shall be recorded on the "False Proceed Signal Failure Informal Investigation" form.

Any cause reported by the railroad on the false proceed signal report is to include sufficient narrative explanation of the occurrence and should properly identify the type of system involved. If a sufficient narrative explanation is not provided, and/or the informal investigation reveals that another more specific cause is appropriate, that fact should be discussed with the railroad and the railroad should be asked to submit a revised report. If an agreement cannot be reached on the proper cause, the FRA database shall reflect the most applicable cause, and the discrepancy should be addressed on the “False Proceed Signal Failure Informal Investigation” form or within any subsequent written formal investigation report.

Formal Investigations

Each false proceed that results in an accident/incident (as defined in 49 CFR § 225.5) shall be formally investigated. As part of the investigation process, a determination shall be made as to whether the National Response Center was notified within 24 hours, as required in 49 CFR § 233.5, and as to whether an accurate and complete Rail Equipment Accident/Incident Report (Form 6180.54) was submitted to FRA in accordance with 49 CFR § 225.11. The investigating inspector shall obtain a copy of the report(s), review it for proper reporting per the instructions contained in the FRA Guide for Preparing Accident/Incident Reports, and contact the railroad reporting officer to facilitate any necessary correction. If an agreement cannot be reached, the inspector’s narrative in his/her false proceed signal failure investigation report shall include a description of the circumstances.

Additionally, a false proceed signal failure that the railroad describes as being caused by one or more of the following factors should normally be formally investigated:

- Sand, rust, or other deposits on rail
- Failure of relay
- Failure of electronic device
- Failure at an interlocking
- Interference
- Design error
- Errors in connections or adjustments
- Where the cause is undetermined

However, if in any of these instances, the regional supervisory specialist determines that a formal investigation is not warranted, the regional supervisory specialist shall notify the Regional Administrator and the S&TC Staff Director (via email is acceptable). In that case, a “False Proceed Signal Failure Informal Investigation” form shall be completed that shall contain a brief explanation of the reason(s) supporting his or her determination. The explanation shall then be entered into the comments section of the report in the false proceed signal failure database.

A narrative report must be prepared for each formal investigation of a false proceed signal failure. Each false proceed signal failure investigation report shall follow the guidelines established for completion and submission. The report shall be addressed to the Regional Administrator. A copy of the completed report, with any associated inspection and accident/incident report(s), shall be forwarded to the S&TC Staff Director. All associated inspection reports should indicate the correct source code for the inspection and the assigned file number.

File Numbers

Each reported false proceed signal failure occurrence shall receive a file number. The file number for each occurrence will begin with FP, followed by the two-digit calendar year in which it occurred, then the region number, followed by a sequential number for each occurrence within the region for the calendar year (e.g., FP11-6-1, FP11-6-2, etc.).

Database Records

Each regional supervisory specialist shall ensure that all pertinent information regarding false proceed signal failures occurring within his or her region is entered into the false proceed database at least once each month. This database, which is an important tool for recording information pertaining to these events, as well as analysis of that data, is subject to review by numerous entities, including the public. Important fields in the database for which accurate data is essential include:

1. Reported cause and FRA's cause code (especially when FRA's cause code differs from what was reported by the railroad);
2. Whether the false proceed was formally investigated;
3. Investigation file number;
4. Record open or closed, and closed by whom;
5. Remarks, if applicable, that include relevant or expanded information related to the cause of the false proceed and the corrective action taken; and that should identify specific types of equipment failures when applicable, for example: GRS B-1 relay; and,
6. Whether an accident/incident was involved. In addition, it is important to ensure that the type of system in which the failure occurred is correctly entered in the database because occasionally the railroad's report is incorrect.

As soon as the FRA investigation (informal or formal) is completed and the regional supervisory specialist is satisfied with all database entries, the file must be closed. Partial information from each record will then be released onto the FRA public Web site by S&TC HQ staff.

The regional supervisory specialist shall ensure that the completed false proceed signal reports, including a copy of the original Form FRA F6180.14 reported by the railroad, copy of associated inspection report(s), and any other associated documentation, are forwarded to the S&TC Staff Director in Washington, DC. The S&TC HQ staff shall then keep these records on file in the headquarters office.

Activation Failure Investigation

Upon receipt of a Highway-Rail Grade Crossing Warning System Activation Failure Report, the regional S&TC supervisory specialist shall determine if the activation failure occurred within his or her region. If it did not, the regional S&TC supervisory specialist should immediately furnish a copy of the report to the region in which the activation failure occurred. All reports of activation failures shall be investigated, and the results entered on the new "Activation Failure Form," the difference being only the degree of investigation warranted. The new form is an electronic version in Microsoft InfoPath. A "Help" section with instructions is provided for each block that needs to be filled out on the form. The regional S&TC supervisory specialists, for all occurrences within their respective regions, shall ensure the following procedures are followed.

Informal Investigation

Each activation failure incident reported by a railroad shall receive, at a minimum, an “informal investigation,” that shall consist of at least an inquiry to ascertain that the information submitted by the railroad is complete and accurate and that the cause reported is appropriate. In addition, a determination shall be made whether any accident/incident (as defined in 49 CFR § 225.5) occurred as a result of the activation failure, and whether any further “formal investigation” is necessary. Each informal investigation shall include a verbal conversation between the regional S&TC supervisory specialist, or an S&TC inspector, and an appropriate representative of the railroad (i.e., signal supervisor, signal manager, etc.). The findings of each informal investigation shall be recorded on the “Activation Failure Form” with the box checked to indicate an informal investigation.

Any cause reported by the railroad as “Other, miscellaneous” on the activation failure report (Form FRA F6180.83) is to include sufficient narrative explanation in the comments section of the report. If a sufficient narrative explanation is not provided, and/or the informal investigation reveals that another more specific cause is appropriate, that fact should be discussed with the railroad and the railroad should be asked to submit a revised report. If agreement cannot be reached on the proper cause, the FRA database shall reflect the most applicable cause and the discrepancy should be addressed on the “Activation Failure Form.”

Formal Investigation

Each activation failure that results in an accident/incident (as defined in 49 CFR § 225.5) shall be formally investigated. An accident/incident is defined as an impact between on-track railroad equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, or pedestrian at a highway-rail grade crossing. As part of the investigation process, a determination shall be made whether the National Response Center was notified within 24 hours, as required in 49 CFR § 234.7, and whether a complete and accurate Highway-Rail Grade Crossing Accident/Incident Report (Form 6180.57) was submitted to FRA in accordance with 49 CFR § 225.11. The investigating inspector shall obtain copy of the report(s), review for proper reporting per the instructions contained in the FRA Guide for Preparing Accident/ Incident Reports, and contact the railroad reporting officer(s) to facilitate any necessary correction. If agreement cannot be reached, the inspector’s narrative in his or her activation failure investigation report shall include description of the circumstances.

Additionally, an activation failure that the railroad indicates was caused by one or more of the following factors should also be formally investigated:

- Sand, rust, or other deposits on rail
- Failure of relay
- Failure of electronic device
- Interference
- Design error
- Errors in connections or adjustments
- Where the cause is undetermined

However, if in any of these instances, the regional S&TC supervisory specialist determines that a formal investigation is not warranted, the specialist shall notify the Regional Administrator and the S&TC Staff

Director (via email is acceptable). In that case, an informal investigation shall be completed which shall contain a brief explanation of the reason(s) supporting his or her determination. The explanation shall then also be entered into the comments section of the report in the activation failure database. A regional S&TC supervisory specialist, on a case-by-case basis, may also identify the need for formal investigation of any event of any other cause(s).

A report must be prepared for each investigation of a highway-rail grade crossing warning system activation failure. If it is determined that an activation failure did not take place, the appropriate box "Invalid Report" must be checked on the form to indicate such. Each activation failure investigation report shall follow the new form guidelines established for completion and submission, a "Help" section accompanies each field of the new form for clarity of completion. A copy of the completed report, with all associated attachments including inspection reports, accident/incident report(s) and the 6180.83 report, shall be forwarded to the S&TC Staff Director no later than the month following the completed investigation. All associated inspection reports should indicate the correct source code for the inspection and the assigned file number.

File Numbers

Each reported activation failure occurrence shall receive a file number. The file number for each occurrence will begin with AF, followed by the calendar year in which it occurred; then the region number. For each investigation, the region number will be followed by a sequential number for each occurrence within the region for the calendar year (e.g., AF05-6-1, AF05-6-2, etc.).

Database Records

Each regional S&TC supervisory specialist shall input all pertinent information regarding reported activation failures occurring within his or her region into the activation failure database at least once each month. This database, which is an important tool for recording information pertaining to these events, as well as analysis of that data, is subject to review by numerous entities, including the public. Important fields in the database for which accurate data is essential include:

1. Reported cause code and FRA's cause code (especially when FRA's cause code differs from that which was reported by the railroad);
2. Whether the activation failure was investigated (always yes);
3. Date of investigation;
4. Investigation file number;
5. Record open or closed, and closed by whom;
6. Remarks, if applicable, that include relevant or expanded information related to the cause of the activation failure and the corrective action taken; and
7. Whether an accident/incident was involved.

As soon as the FRA investigation (informal or formal) is completed and the regional S&TC supervisory specialist is satisfied with all database entries, the file must be closed, in any case no later than the quarter following the month the AF investigation was completed. Partial information from each record will then be released onto the FRA public web page by S&TC headquarters staff.

By no later than the end of each month, the regional S&TC supervisory specialist shall gather all of the previous month's completed activation failure reports and forward them to the S&TC Staff Director in Washington, DC. The S&TC headquarters staff shall then keep these records on file in the headquarters office.

Conducting Interviews

Inspectors will, from time to time, need to conduct an interview of a railroad employee or other person in connection with an investigation of an accident, complaint, application, false proceed signal or activation failure, assessment, etc. Such interviews shall be conducted within the guidelines set forth in the General Manual.

The interview shall be conducted in a businesslike manner, with no frivolity. The person interviewed will be treated courteously and with respect. The questions should be pertinent to the investigation and not be made in a leading manner. The idea of the interview is to get that person's viewpoint about the subject or what happened. The interview should be audio-recorded if at all possible. Good notes should be kept of the interview so that an accurate report of interview can be prepared.

The inspector will give full credence and consideration to the comments and statements of the person being interviewed. The inspector will weigh those comments and statements in concert with established facts and the comments and statements of other persons.

Determining When and What Enforcement Action Is Necessary

FRA does not have to take a formal enforcement action every time it discovers or learns of a condition of noncompliance with the Federal railroad safety laws and regulations. FRA has enforcement discretion, and it can choose which cases to pursue for civil penalty or other form of enforcement based on available resources and on what it believes to be the best method of promoting compliance. Moreover, when FRA decides that enforcement action is warranted, it has a range of enforcement tools (discussed below) and has the authority to choose those best suited to the circumstances. One of these tools—the emergency order—can be used to address an immediate hazard, even if no existing Federal regulation or law has been specifically violated.

The existence of this wide enforcement discretion, concerning when and what enforcement action is necessary, calls for general guidelines to ensure effectiveness, fairness, and an acceptable level of consistency in the exercise of that discretion. The purpose of these guidelines is not to dictate absolute identical treatment of like situations; that would be unrealistic and would require a false assumption that each of the many variables going into an enforcement decision could objectively and accurately be quantified. Instead, the purpose of these guidelines is to control the subjective elements of this process, as much as is feasible, by requiring that those making enforcement decisions weigh the same factors and make full, uniform use of the information available to them. In this way, the appropriate enforcement tool is most likely to be applied, responsible discretionary judgments are made, and an acceptable level of consistency is achieved. Application of these factors should preclude abuses of discretion such as basing an enforcement decision on personal bias, or failure to enforce the law because of a personal aversion to action and/or the “extra work.”

FRA's Statement of Agency Policy Concerning Enforcement of the Federal Railroad Safety Laws (49 CFR Part 209, Appendix A) stresses that discretion is exercised at the field and regional levels. Although inspectors make initial determinations on the need for enforcement action, regional personnel play an active role in reviewing those determinations with an eye toward effectiveness and consistency. Moreover, regional supervisory specialists play a primary role in ensuring that field inspectors have the data necessary to make effective and appropriate enforcement decisions. The regional supervisory specialist, for example, periodically analyzes the relevant data on accidents, incidents, and inspections to detect patterns or problem areas at the regional, railroad, or office level. This information should be used not only in deciding where to inspect but, as discussed below, is also used in deciding when and what enforcement action is necessary. Office of Railroad Safety headquarters personnel are, of course, responsible for spotting national trends in the data that warrant particular levels of enforcement action and for providing guidance to the regional and field staffs on difficult enforcement policy issues.

FRA's policy statement sets forth key factors to be considered in making enforcement decisions. The following information in this chapter should be considered when weighing factors regarding any S&TC enforcement decisions.

1. The inherent seriousness of the condition or action.
2. The kind and degree of potential safety hazard the condition or action poses in light of the immediate factual situation.
3. Any actual harm to persons or property already caused by the condition or action.
4. The offending person's (i.e., railroad or individual) general level of current compliance as revealed by the inspection as a whole.
5. The person's recent history of compliance with the relevant set of regulations, especially at the specific location or division of the railroad involved.
6. Whether a remedy other than a civil penalty (ranging from an individual warning up to an emergency order) is more appropriate under all of the facts.
7. Such other factors as the immediate circumstances make relevant.

The exercise of this discretion at the field and regional levels is a vital part of the enforcement process, ensuring that the exacting and time-consuming civil penalty process is used to address those situations most in need of the deterrent effect of available penalties.

Parts 233, 234, 235, and 236 contain the minimum standards by which the Nation's railroads must design, install, test, and maintain their signal and train control systems and highway-rail grade crossing active warning systems. The railroads may adopt more stringent requirements than these regulations specify, which some railroads have done. The S&TC inspector is required to take exception to any condition that does not meet the requirements of these regulations. However, at the same time, the S&TC inspector cannot take exception to a condition just because it does not comply with the railroad's standards, or because the inspector does not like the way a signal circuit or apparatus is designed, installed, tested, or maintained. The S&TC inspector's authority extends only to the enforcement of the Federal regulations. Should an inspector find or note a hazardous condition that is not covered by the S&TC Federal regulations, he or she should orally bring it to the attention of the railroad and report the condition to their regional supervisory specialist.

All defective conditions noted by the inspector shall be reported on the FRA inspection report, using the defect codes contained within the RISPC program and as listed in the applicable Technical Manual

section. Only these defect codes may be used. The inspector is encouraged to add clarifying notations of particular deficiencies, especially when violations are recommended; however, inspectors are not permitted to make up their own defect codes.

Handling of Defective Conditions

The inspector will inspect and observe the performance of railroad tests of signal systems for compliance with 49 CFR Parts 233, 235, and 236, and for highway-rail grade crossing active warning systems for compliance with 49 CFR Part 234. The objective of the inspector's regular inspection activity will be to find and cause to be corrected any condition that does not meet the requirements of these regulations.

In their inspection activities, inspectors shall be guided by the information contained in the applicable Technical Manual portions regarding the application of the rules and regulations contained in Parts 233, 234, 235, and 236.

The Technical Manual provides a rule-by-rule analysis of the correct application of the rules and regulations, and what each rule means and how its requirements are to be applied. When making regular S&TC inspections, the guidelines provided by the appropriate Technical Manual portion shall be applied and followed. All defective conditions found will be cited as defects on an FRA inspection report and handled with the railroad for correction. When warranted, it will be appropriate for the inspector to issue an inspection report that recommends a violation. FRA has given its inspectors latitude to use their discretion to file violations as one of the tools to be used to obtain railroad compliance with the safety regulations, and the agency expects its inspectors to use that discretion wisely. For instance, violation reports may be justified for defective conditions that would normally be handled as citations of deficiencies (i.e., defects) by showing a related noncompliant trend on a railroad, or by showing that the railroad failed or refused to correct defective conditions cited on a previous inspection report.

Defective Conditions Not Cited as a Violation

When, in the judgment of the inspector, the defective conditions found do not represent an imminent hazard to the operation of trains, do not present a danger to the railroad's employees or the general public, do not appear to be a trend or pattern of defective conditions, and are not associated with a specific condition previously cited for correction which has not been performed, the inspector should cite the defects on an inspection report while not recommending a violation. Subsequently, the inspector shall take such action as necessary to make sure the railroad corrects the defective conditions and brings its systems into compliance with the applicable regulations.

Defective Conditions Cited as a Violation

Noncompliance with the requirements in any section of Parts 233, 234, 235, and 236 can be cited as a violation. The following are guidelines for situations that—depending on conditions found, circumstances involved, or compliance history—violations are nearly always warranted:

- When an inspector finds conditions that are not in compliance with the regulations, and in the judgment of the inspector, the conditions present an imminent hazard to movement of trains or the general public.

- When a condition is found during a re-inspection that was cited on a previous inspection report and can be clearly identified as having remained uncorrected since that previous inspection. The re-inspection must have been performed within 60 days of the previous inspection to support violation work.
- When, during the course of an investigation of an accident, false proceed signal failure, or highway-rail grade crossing active warning system activation failure, the inspector finds that the accident or failure was caused by a defective condition that does not comply with the requirements of the regulations and a violation is warranted. For example, instances such as interference, failure to properly test after performing adjustments or repairs, failure to test after a vital component was replaced, etc.

In order to increase and maintain appropriate and uniform enforcement of the regulations across the discipline, the following rule sections and associated deficiencies are provided as examples of non-compliance that in most instances warrant citing violations:

- § 233.5 When a false proceed signal failure caused or contributed to an accident and the railroad fails to properly report the accident.
- § 233.7 When the railroad fails to properly report a false proceed signal failure within the required time frame.
- § 234.7 When an activation failure caused or contributed to a highway-rail grade crossing accident and the railroad fails to properly report the accident.
- § 234.9 When the railroad fails to properly report an activation failure within the required time frame.
- § 234.103 When the railroad fails to respond in a timely manner to a credible report of a malfunction of a highway-rail grade crossing active warning system.
- § 234.105 When the railroad fails to notify a train crew of an activation failure condition prior to their operating over the affected crossing; or, when a duly notified train crew fails to operate their train in accordance with the alternative warning requirements associated with an activation failure.
- § 234.106 When the railroad fails to notify a train crew of a partial activation condition prior to their operating over the affected crossing; or, when a duly notified train crew fails to operate their train in accordance with the alternative warning requirements associated with a partial activation.
- § 234.107 When the railroad fails to notify a train crew of a false activation condition prior to their operating over the affected crossing; or, when a duly notified train crew fails to operate their train in accordance with the alternative warning requirements associated with a false activation.

- § 234.203 When a control circuit that affects the safe operation of a highway-rail grade crossing active warning system does not operate on the fail-safe principle.
- § 234.207 When the railroad fails to use due diligence in determining the cause of a highway-rail grade crossing active warning system failure, malfunction, or defective condition affecting the proper operation and/or ability of the system to warn highway users of an approaching train; or, when a railroad fails to conduct necessary adjustment, repair, or replacement without undue delay.
- § 234.209 When an inspector finds a railroad is in noncompliance with this section.
- § 234.215 When an inspector finds a highway-rail grade crossing active warning system with no standby power provided; or, the standby power is knowingly of insufficient capacity.
- § 234.227 When the railroad fails to take appropriate action under § 234.105 where sand, rust, dirt, grease, or other foreign matter is known to prevent effective shunting.
- § 234.229 When an inspector finds a train detection circuit so installed and adjusted that it does not detect a shunt of 0.06 ohm when the shunt is connected across the track rails at any location in the train detection circuit.
- § 234.231 When an inspector finds a switch turnout in the detection circuit that is equipped with fouling wires fails to shunt during test of fouling section or switch circuit controller because both the fouling or shunt wires are not sufficient (broken or missing, or too small, corroded, or bad plug connection) to ensure proper operation of the train detection circuit as required in § 234.227.
- § 234.237 When an inspector finds a switch circuit controller interconnected with the highway-rail grade crossing warning system circuitry used as a reverse switch cutout circuit to be so maintained that the warning system can be cut out when the switch point is open 1 inch or more from the full reverse position.
- § 234.267 When an inspector finds the railroad has not repaired or removed from service a conductor found with insulation resistance of less than 200,000 ohms.
- § 235.5 When the railroad has failed to obtain FRA permission to make signaling changes that require FRA approval under the provisions of Part 235.
- § 236.0 When an inspector finds that a railroad is scheduling and operating trains in noncompliance with provisions of this section and it is determined the maximum authorized speed is in excess of the speeds permitted by this section.
- § 236.3 When an inspector finds an electro-mechanical, electro-pneumatic, or power interlocking cabinet is not sealed or locked to prevent someone from improperly manipulating the mechanical locking contained in the interlocking machine without breaking the seal or unlocking the cabinet.

- § 236.4 When an inspector finds a railroad is in noncompliance with this section.
- § 236.6 When an inspector finds a circuit controller to be so maintained that the track circuit or control circuit is not opened or shunted when the switch point is open twice the distance specified by the requirement.
- § 236.11 When an inspector finds a railroad not promptly making repairs to signaling devices that are found to be malfunctioning, if such delay contributed to or constituted a hazard to safety of train operation.
- § 236.13 When an inspector finds a switch circuit controller or circuit controller associated with a spring switch to be so maintained that the track circuit is not opened or shunted or the control circuit is not opened when the switch point is open twice the distance specified by the requirement.
- § 236.16 When an inspector finds a main track electric lock releasing circuit to be so installed or maintained that it extends into the turnout beyond the heel of the switch points.
- § 236.18 When an inspector finds that a railroad required to have done so has not developed and implemented a software management control plan; or where a process or procedure identified within the plan was not complied with, which results in an unsafe failure.
- § 236.51 When an inspector finds that a track circuit is so installed that the removal of a rail or frog, or a car or engine standing on the track circuit, will not cause the associated track relay to be in deenergized position or device that functions as a track relay not in its most restrictive state.
- § 236.55 When an inspector finds a dead section that exceeds 35 feet, or is longer than the shortest outer wheel base of a railroad locomotive operated over it and a special circuit is not installed to provide equivalent track circuit protection.
- § 236.56 When an inspector finds a track circuit so installed and adjusted that the track circuit is not in deenergized position when a shunt of 0.06 ohm is placed across the rails at any location in the circuit.
- § 236.57 When an inspector finds a main track circuit fails to shunt during test of fouling section or switch circuit controller because both the fouling or shunt wires are not sufficient (broken or missing, or too small, corroded, or bad plug connection) to perform their intended function.
- § 236.58 When an inspector finds that a 0.06 ohm shunt placed on the rails in the fouling section does not properly shunt down the main track circuit because of missing, broken, or defective rail bonds on the fouling section.
- § 236.60 When an inspector finds a new switch (installed after 2-26-84) with shunting circuit that does not open track circuit or control circuit. *See* § 236.60 in technical manual for definition of new switch.

- § 236.108 When an inspector finds the railroad has not repaired or removed from service a conductor found with insulation resistance of less than 200,000 ohms.
- § 236.207 When an inspector finds an electric lock with an emergency release device that is not locked or sealed and it is not equipped with an effective latch-out device.
- § 236.309 When an inspector finds an automatic interlocking approach circuit which activates approach or time locking, or approach track circuit , or a new power-operated switch (installed after 2-26-84), where a loss of shunt of 5 seconds or less permits respectively the established route or route locking to be changed.
- § 236.312 When an inspector finds an emergency release is provided to release bridge locking that is not kept locked or sealed and it is not equipped with an effective latch-out device.
- § 236.314 When an inspector finds an electric lock on a hand-operated switch within the limits of an interlocking with an emergency release device that is not sealed and it is not equipped with an effective latch-out device.
- § 236.327 When an inspector finds that a power-operated switch or movable point frog is so maintained that the switch will lock up when the point is open one-half inch or more.
- § 236.334 When an inspector finds that a point detector will assume the position corresponding to switch point closure when switch point is open one-half inch or more.
- § 236.342 When an inspector finds that a switch circuit controller which is connected to pipe-connected switch, derail, or movable-point frog; and, where an external switch circuit controller is added to a power-operated switch; is so maintained that the contacts assume a position to indicate the switch point is closed while switch point is open one-half inch or more.
- § 236.410 When an inspector finds the railroad has not installed an electric lock or a signal to govern movement from an auxiliary track at a hand-operated switch that is required by this section to have such protection; an electric lock on a hand-operated switch is equipped with an emergency release device that is not locked or sealed and it is not equipped with an effective latch-out device; or, when an inspector finds that the approach or time locking is not effective due to a design error or other defective condition.
- § 236.526 When an inspector finds the railroad failed to set wayside signal to display its most restrictive aspect when an associated roadway element is defective or missing, or that the railroad has restored the signal to normal operation before the defective or missing associated roadway element has been replaced or repaired.
- § 236.553 When an inspector finds that a locomotive was used in the lead position in equipped territory, and that the cut-out device used to cut out the pneumatic portion of the apparatus was not sealed; or, if locomotive is found on the ready track and is listed as available to be dispatched into equipped territory as the lead locomotive after a daily or after trip test, or a departure test, and such cut-out device is not sealed.

- § 236.566 When an inspector finds that a train was operated into equipped territory with a non-equipped locomotive; or, a locomotive with a device that was not in serviceable condition, on departure from its initial terminal.
- § 236.567 When an inspector finds that a train has proceeded with a failed or cut-out device without making a report to the designated officer at the next available point of communications; or, such a train is permitted to proceed at speeds in excess of 79 mph with a cut-out or failed device.
- § 236.586 When an inspector finds that a daily or after trip test has not been performed when required and the equipped locomotive has been subsequently dispatched into equipped territory.
- § 236.587 When an inspector finds the locomotive controlling the brakes has not received a proper departure test before leaving its initial terminal, before entering equipped territory where the system is cut out between initial terminal and equipped territory, or when making more than one trip in a 24-hour period, at least once every 24 hours.
- § 236.588 When an inspector finds a locomotive available for service that is equipped with automatic cab signal, train control, or train stop has not received a proper periodic test according to either an interval of not more than 2 months, or at least once every 92 days, whichever is applicable.

Railroad Action to Correct Defective Conditions

Some railroad personnel have the mistaken idea that when a noncompliant or defective condition is cited on an inspection report, the railroad has 30 days to correct that condition. It should be pointed out to the railroad that defects must be corrected immediately (i.e., as soon as possible given the particular circumstances of the condition). If the condition can be corrected by making adjustments or repairs while making the inspection, the railroad is expected make such adjustments or repairs. If the condition cannot be corrected during the inspection, the railroad is obligated to initiate and complete the corrective action as soon as possible after the inspection.

The inspector should use good judgment about the railroad's obligation and ability to promptly correct the defective conditions cited on an inspection report. The inspector must recognize that some defective conditions, such as broken poles, broken crossarms, or temporary cable on top of the ground, may take some time and/or collection of material to correct. While such conditions are not likely to be corrected immediately, they should still be given high priority by the railroad. The material should be ordered and/or work started as soon as possible to make the repairs or replacements.

On the other hand, the inspector should not condone the actions of a carrier that fails to promptly start work to correct conditions that may be accomplished immediately, such as grounded control circuits, defective or out of adjustment switch circuit controllers, loose switches or other components, etc.

Written Reporting of Remedial Actions Taken

When a violation is indicated as being recommended on an inspection report, the inspector must select whether the railroad is required to report the remedial action, in writing, within 30 days following the end of the calendar month of the citation. The inspector should determine whether a remedial action is applicable and if so, select the box indicating that a written report of remedial action is required. When this is the case, the inspector must follow up to assure the remedial action is indeed reported, or a separate citation for the railroad's failure to do so may be warranted (see Part 209, Subpart E, specifically § 209.405). When the inspector receives the railroad's written notification of remedial action, he or she shall upload the necessary information into the RISPC program.

Chapter 4 – Field Reports, Procedures, and Forms

General Requirements

An Inspection Report Form FRA F 6180.96 shall be completed and submitted any time an inspector engages in inspection activity. This requirement applies to all field inspections, regardless of whether they are performed in connection with regular inspection activity or in connection with some special activity such as the investigation of an accident, complaint, block signal application or waiver request, false proceed signal failure, activation failure, or special assessment. All of the pertinent information shall be provided on the form.

S&TC Inspections and Unit Count Guidelines

Signal inspectors conduct inspections of wayside signal systems, automatic train stop, train control, and cab signal systems, and grade crossing active warning systems to determine the level of compliance associated with the Federal regulations applicable to those systems. Signal inspections are the backbone of the S&TC safety oversight program. Therefore, a high level in the quality of signal inspections is critical, as only a relatively small portion of the railroad's signal and grade crossing active warning systems can be inspected over a period of time due to FRA's limited resources. In order to maintain a high level of quality inspections, signal inspectors are, a majority of the time, to be accompanied by appropriate railroad personnel when conducting their inspections, with unaccompanied inspections being a rare exception. Appropriate railroad personnel would include those authorized to enter signal bungalows, instrument cases, and other similar housings, who are able to conduct the requested testing of the signal equipment adjustments and functionality, and who are able to establish the necessary roadway worker protection, as applicable.

Generally, inspection activity related to the activity codes listed below should be conducted with some reasonable level of actual inspection "practice and process." The inspection process is necessary for determining compliance with the various standards contained in the regulations, most notably those standards associated with the required functionality of the applicable systems, subsystems, or components. For example, whereas it is certainly possible to identify (or suspect) various safety concerns or even deficiencies through a cursory visual inspection (e.g., broken, loose, or missing components, or components not in their required location or in otherwise defective conditions, such as insulated rail joints, track wires, shunt wires and fouling wire connections, rail joint bonding, switch machine layout, and associated apparatus), a cursory visual inspection would not normally, in and of itself, constitute a thorough inspection. Instead, a more indepth inspection, to include an observation of various testing for proper functionality and required operating parameters of associated equipment, is normally desired. In the instance of safety concerns being visually identified prior to actually conducting specific testing, action should be taken to immediately notify the applicable railroad personnel and arrange for testing of the associated functions. If safety concerns or defective components are visually identified during an accompanied inspection, the associated functions of the system that could be affected must be tested or otherwise observed at the earliest opportunity possible in each of these scenarios, taking into consideration the safety risk that may be associated with the suspected condition.

Refer to Appendix A, or the latest version of the S&TC and Multi-discipline Activity Code Table for further guidance regarding activity codes and unit counting.

Inspectors' uniform use of these unit-counting criteria is necessary in that the data recorded on the FRA F6180.96 is entered into FRA's electronic database and is available to generate management reports to determine the effectiveness of the inspection program and the degree of activity of any particular inspector. The information in the database can also be used to determine the degree of railroad compliance with FRA regulations, thus indicating which railroads are in need of more intensive signal inspections.

Completion of Inspection Report Form, FRA F6180.96

This section describes the methods to be used in preparing the FRA Form F6180.96 (Inspection Report Form) and the information that is required to be recorded on the form.

The Form FRA F6180.96 is contained in the RISPC program and is designed to be used with a computer. It is designed so that data from the completed inspection report forms can be used for computer-aided storage, retrieval, sorting, and generation of reports of inspection data.

Each inspector or regional supervisory specialist (or chief inspector) who performs a signal inspection shall complete and submit an FRA inspection report to the railroad when the inspection is completed. When a Form FRA F6180.96 is submitted that indicates a violation has been recommended, the inspector, regional supervisory specialist, or chief inspector is required to complete and submit a subsequent violation report.

Note: The inspection report form is designed such that each line item is to indicate whether a violation is being recommended. Therefore, it is generally inappropriate to use more than one inspection report form per day to indicate a combination of deficiencies and violations, or that two or more violations are being recommended, even in the event different CFR parts and/or rule sections within a CFR part are being cited, unless it is necessary due to other information on the form (i.e., different railroad, State, division or subdivision, etc.)

The S&TC Inspection Report shall be complete and understandable and shall be presented to the railroad representative at the end of the day's inspection activities. If two or more inspectors are working together, only one FRA Inspection Report shall normally be filed and the accompanying inspector(s) identified in the appropriate location on the report. When the inspection activity involves an area regularly inspected by one of the inspectors engaged in the activity, the report shall be filed by the inspector who normally covers that area.

The Inspection Report shall be filled out in accordance with the instructions found within the RISPC program (see "Help" file). (*See Technical Bulletin G-07-03, which presents the revised source codes for use on the inspection report form; and Technical Bulletin S-08-01, which presents the revised S&TC Activity Codes.*)

Note: The description block on the inspection report form is where the inspector is to describe the defective condition being cited. In many instances, the insertion of the defect code itself will adequately provide that description. However, in many other instances, especially those where a violation is recommended, it is highly desirable to add explanatory language as to the detail of the exception. When

clarification is necessary to a viewer of the report, the inspector shall add that minimal additional description of the subject condition. For example, if recommending a violation for noncompliance with § 234.209, insert the defect code and add a minimal explanation of what occurred. If recommending a violation for noncompliance with § 236.334, insert the defect code and add a minimal explanation of the width of the obstruction wherein the switch was actually still indicating to be in proper position, etc.

Distribution of Inspection Reports

The railroad copy of the inspection report should be provided to the appropriate railroad representative upon the completion of each day of inspection to the extent possible. The inspector should at a minimum inform the railroad representative of any exceptions taken, particularly those in which a violation will be issued. The inspector should obtain the railroad representative's signature on each inspection report provided the railroad, especially any report recommending a violation; or a receipt of acknowledgment for any inspection report emailed to the railroad.

The report shall be uploaded to the data processing contractor in accordance with current instructions. State inspectors shall be governed by guidance from their immediate supervisors regarding the handling of inspection reports.

Regional Supervisory Specialist Review of Inspection Reports

The regional supervisory specialist shall periodically review inspection reports of each of their assigned inspectors for errors and/or omissions, and technical appropriateness and correctness. Each reviewed report shall be examined to see that all spaces are filled in with the mandatory information.

The regional supervisory specialist shall ascertain that the rules used to cite defective conditions are correctly applied and that they are applicable to the system inspected, (i.e., interlocking rules cannot be used to cite defective conditions in automatic block signal systems). The regional supervisory specialist shall also review that the citations made appear to be appropriately determined to be either cited as a defect or a violation. Any question in either case should be discussed and resolved with the applicable inspector.

Should the regional supervisory specialist find errors, omissions, or technical issues, he or she should immediately take steps to get a corrected copy to the data entry contractor so that the inspection data can be successfully entered into the database. The regional supervisory specialist should advise the inspector of the errors, omissions, or technical issues so that similar ones will not be made on future reports.

The regional supervisory specialist shall also ensure that when an inspector prepares an inspection report recommending a violation, sufficient explanation of the condition is provided and the subsequent violation report is properly forthcoming.

Completion of Violation Report Form

Inspectors should adhere to the following instructions when writing the narrative section of the F 6180.112, S&TC violation report, unless otherwise instructed by their immediate supervisor or by staff at FRA HQ in Washington, DC.

Paragraph 1. State that the carrier (full corporate name) is in violation of section XXX of the Rules, Standards, and Instructions Governing the Installation, Inspection, Maintenance, and Repair of Signal and Train Control Systems, Devices, and Appliances; or of the requirements for Grade Crossing Signal System Safety. Do not use abbreviations such as RS&I, HGC, etc. The violation report is an official document that may be used in a court of law and therefore should be as precise as possible.

Paragraph 1a. Immediately following the first paragraph, cite the entire rule of which the carrier is in violation, or if it is a very long rule, cite the appropriate portion of the rule. Include the section number and title as a heading for the rule, and ensure that the rule is quoted correctly down to every comma and hyphen. When only a portion of a rule is quoted, insert a row of three dots one space apart, either in front of the quoted text and/or behind, to denote that a portion of the rule is intentionally not quoted.

Paragraph 2. State the date of the inspection, when the violation was found, the name of the railroad representative who was accompanying the inspector (along with his or her title), and the type of system inspected.

Paragraph 3. List the specific appliance or location within the system where the defective condition was found and a full description of the condition that prompted the violation.

Paragraph 4. State that the condition is dangerous and explain why; or in the case of a re-inspection, give justification for the violation by referring to the applicable previous inspection report. List the date and report number of the previous inspection report and that the carrier failed to perform required remedial action.

Paragraph 5. State when applicable what action the carrier took to correct the defective condition and when such action was taken.

Paragraph 6. The inspector should make a recommendation for violation counts and the number of days for each count.

Note: There will be occasions when an inspector files a violation report based on non-compliance with parts 233 or 235. Such violation reports may be revised to conform to the circumstances of the violation. When the F6180.112 violation report and all supportive documentation is complete, the inspector will forward the entire violation package to his or her supervisory specialist according to their particular guidance. State inspectors will be governed by the instructions from their respective States as to handling of the violation reports when ready for transmittal.

Distribution of Violation Reports

Where the inspector is recommending prosecution for a violation, the completed report along with the supporting documentation shall be submitted to the Regional Administrator's office within 30 days, where it will be reviewed and forwarded to the Assistant Chief Counsel's Enforcement Division.

When the violation report is complete and ready for transmittal, an electronic Transmittal From Region (TFR) form shall be generated using the FRA Violation Generation, and Tracking System (VGTS) web

page on the secure site and a copy shall be attached to the violation report packet. The original and one copy shall then be submitted to Assistant Chief Counsel for Enforcement. One copy should also be filed at regional headquarters.

State inspectors will be governed by the instructions from their respective States as to handling of the violation reports when ready for transmittal.

Regional Supervisory Specialist Review of Violation Reports

The regional supervisory specialist shall review each violation report for errors and/or omissions; correct technical terms and technical application of the regulation cited; correct format, grammar, and spelling; and to make sure that the information contained in the violation report provides sufficient support for the recommendation and that it corresponds with the information on the inspection report upon which the violation is based.

After the regional supervisory specialist has reviewed the violation report and ascertained that it contains the necessary information and meets the criteria for a well written report, he or she will generate the electronic TFR form using the FRA VGTS web page on the secure site and attach a copy to the violation report packet. The regional supervisory specialist shall then submit the original and one copy to the Assistant Chief Counsel. One copy should be filed at the regional headquarters.

The regional supervisory specialist shall return to the inspector any violation report that is improper in regulatory application, deficient in content, improper in format, incorrect in grammar or spelling, or where the information in the violation report does not support the recommendation or does not correspond with the information of the inspection report that recommends the violation.

If the regional supervisory specialist does not agree with the seriousness of the condition and does not support the violation, he or she should discuss the issue with the inspector involved. If the inspector insists on recommending a violation, the regional supervisory specialist should prepare a memorandum to the Regional Administrator citing his or her position and the basis upon which his or her position is supported. The Regional Administrator will attempt to resolve the matter and in doing so, determine whether to forward the violation package to the Assistant Chief Counsel. If so, the regional supervisory specialist's memorandum should be enclosed as cover.

Block Signal or Waiver Application Investigation Reports

All block signal applications (BSAP or BS-Ap) and waiver requests shall be fully investigated. When the application is assigned for investigation, a field investigation shall be conducted.

The field investigation report shall be prepared on the inspector's "Report Form for BS-Ap and RS&I-Ap Applications" found in the S&TC Technical Manual under Part 235. Inspectors are to follow the report-writing examples and guidance according to the instructions contained in the Part 235 section of the manual.

Regional Supervisory Specialist Review of Block Signal or Waiver Application Investigation Reports

The regional supervisory specialist shall review each BSAP or waiver request report for errors and/or omissions; correct technical terms and technical application of any associated regulations; correct format, grammar, and spelling; and to determine whether the recommendation made by the inspector is appropriate and defensible.

The regional supervisory specialist shall return to the inspector any BSAP or waiver report that is improper in regulatory application, deficient in content, improper in format, incorrect in grammar or spelling, or where the information in the report does not correspond with the information of the railroad's submission.

After the regional supervisory specialist has reviewed the BSAP or waiver report and ascertained that it contains the necessary information and meets the criteria for a well written report, he or she will sign off on the report by indicating whether they concur in the provided location (at the end of the report). If the regional supervisory specialist does not concur with the inspector's report, he or she shall prepare a cover memorandum to the Regional Administrator citing his or her position and the basis upon which his or her position is supported. The Regional Administrator or Deputy Regional Administrator shall then indicate their concurrence before the finished report is forwarded to the S&TC Staff Director.

False Proceed Signal Failure Investigation Reports

The inspector shall file a narrative report of each formal false proceed investigation. The narrative report should contain the following information:

1. First paragraph: Date, time, and location of failure or alleged failure and a brief summary regarding the cause of the failure.
2. Second paragraph: Type of system, technical description of the system, method of train operation, and maximum authorized speed.
3. Third paragraph: Type, direction, and consist of train which observed false proceed signal failure.
4. Fourth paragraph: Signal number, aspect displayed, device that failed, cause of failure, show how the failure contributed to the false proceed signal indication or hazardous condition.
5. Fifth paragraph: What carrier action was taken and when.
6. Sixth paragraph: What action was taken by the inspector and when.
7. Seventh paragraph: State here when it is determined a false proceed failure did not occur.

Use additional paragraphs for other pertinent information that may be developed.

Attach other pertinent information that may further explain the event or the remedial action should be included in the report. Fully explain any event logs, event recorder printouts, or other documentation that is helpful in understanding the particulars of the failure. (*Reference Technical Bulletin S-05-02*)

Regional Supervisory Specialist Review of False Proceed Signal Failure Investigation Reports

The regional supervisory specialist shall review each false proceed signal failure investigation report for errors and/or omissions; correct technical terms and technical application of any associated regulations; correct format, grammar, and spelling; and to determine whether the recommendations made by the inspector are appropriate and defensible.

The regional supervisory specialist shall return to the inspector any false proceed investigation report that is improper in regulatory application, deficient in content, improper in format, incorrect in grammar or spelling, or where the information in the report does not correspond with the information of the railroad's submission.

After the regional supervisory specialist has reviewed the false proceed investigation report and ascertained that it contains the necessary information and meets the criteria for a well-written report, he or she will forward the full report to the S&TC Staff Director.

Highway-Rail Grade Crossing Activation Failure Investigation Reports

The inspector shall file a complete report of each activation failure investigated. The report should follow the current instructions found in the InfoPath form for activation failures.

There is a complete help file found on the form which provides guidance for input into each block or field.

For example, the "Synopsis" field says:

*The synopsis shall include the following information: Date and time of the activation failure, location including city, county, state, street-road name, railroad division, railroad subdivision, milepost, DOT No., and a short description of the cause of the failure.
(NOTE: This section may be released in its entirety to the FR's public Web site.)*

Other pertinent information that may further explain the event or the remedial action should be included in any attachments to the report. Enclose other documentation that is pertinent and helpful in understanding the particulars of the event. (*Reference Technical Bulletin S-05-02*)

Regional Supervisory Specialist Review of Highway-Rail Grade Crossing Activation Failure Investigation Reports

The regional supervisory specialist shall review each activation failure investigation report for errors and/or omissions; correct technical terms and technical application of any associated regulations; correct format, grammar, and spelling; and any recommendation made by the inspector as being appropriate and defensible.

The regional supervisory specialist shall return to the inspector any activation failure investigation report that is improper in regulatory application, deficient in content, improper in format, incorrect in grammar

or spelling, or where the information in the report does not correspond with the information of the railroad's submission.

After the regional supervisory specialist has reviewed the activation failure investigation report and ascertained that it contains the necessary information and meets the criteria for a well-written report, he or she will forward the full report to the S&TC Staff Director.

National Safety Program Plan (NSPP) Status Reports

An NSPP is developed by both the S&TC Staff Director for national or multiregional scope, and by each respective region as it deems necessary. Each project identified is expected to be accompanied by a status report at the end of each quarter, and a final report is due at the end of the fiscal year. Each region, as is applicable, is to forward to the S&TC Staff Director the information required in order for him or her to complete the status reports of HQ projects that involved the region's efforts.

Other Special Project Reports

Any time a special project, assessment, team or focused effort is conducted, the expectation is that a resulting report will be prepared regarding the issues identified, actions taken, findings, and the results or outcome. This report may be regional, multiregional, or national in scope. The report should be provided to the originator of the project, but at least one copy should be provided to the appropriate S&TC HQ staff.

Appendix A

Activity Code Tables

Multi-discipline Code Table of Definitions
Revised January 17, 2012

Activity	Discipline	Definition
174A	H, M	<p>General Requirements – The purpose of this inspection is to determine compliance with §§174.3, 174.5, 174.9, 174.14, 174.16 and 174.50. This code is to be used for railroad facility inspections. Record one unit for the inspection of each car transporting hazardous materials.</p>
174B	H, O	<p>General Operating Requirements – The purpose of this inspection is to review a train crew’s documentation for each railcar containing hazardous material, including any changes in placement of the car. The inspection should include determining compliance with the basic hazardous materials shipping paper descriptions as required in §174.26. Record one unit for each train consist inspected, and one subunit for each inspection of the basic shipping paper description of each car containing hazardous materials.</p> <p>Note 1: Inspectors must use activity code TPLH to record inspections associated with train placement requirements.</p> <p>Note 2: Inspectors must use this code instead of code 172C when inspecting shipping papers specific to a particular train.</p>
209	ALL	<p>Remedial Action – The purpose of this inspection is to report a railroad that has not complied with a requirement to provide a remedial action as noted in a previous inspection report. Record one unit for each remedial action not in compliance. (See General Manual for additional guidance).</p>
215D	H, O, S, T	<p>Freight Car Mechanical Inspection – The purpose of this inspection is for any inspector <u>other than an MPE inspector</u> to determine compliance with § 215, including Appendix D. The inspection includes those performed by an FRA inspector or when an FRA inspector observes railroad employees performing this inspection. MPE inspectors should reference activity code 215. Record one unit for each freight car inspected or observed inspected for compliance with §215. For articulated cars, count each platform as one unit.</p> <p>Note 1: HM and OP inspectors should use this activity code HM for ALL of their Part 215 inspections.</p> <p>Note 2: Properly stenciled Maintenance-of-way equipment is exempt from Part 215.305(b).</p>
217E	ALL	<p>Emergency Order – The purpose of this inspection is to determine compliance with a current Emergency Order. Record each unit and subunit as directed by the unique instructions issued by FRA HQ regarding each specific Emergency Order. Inspectors must thoroughly explain the inspection in the inspection report’s narrative.</p>

Multi-discipline Code Table of Definitions
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Activity	Discipline	Definition
217O	ALL	<p>Other Operations Observations - The purpose of this inspection is to observe railroad employees of any craft performing duties regarding railroad operating rules (ROR), and railroad safety rules(RSR). It will include all related RORs, RSRs, railroad bulletins, and any written railroad policy not otherwise covered in Federal regulations. Noncompliance will be recorded as a Non-FRA defect under this activity code. Record one unit for an entire yard or equivalent facility monitored, and one subunit for each crewmember, yardmaster, contractor, track employee, mechanical employee, signal maintainer, etc, that the inspector continually observed a sufficient amount of time to determine compliance or noncompliance.</p> <p>Note: Unlike noncompliance with Federal regulations, it is FRA policy that inspectors provide information recorded under this activity code regarding noncompliance of an ROR/RSR <u>without identifying the noncompliant employee by name</u> in the Federal inspection report. See the General Manual for a further explanation.</p> <p>Example 1: An FRA Track Inspector observes a <u>20</u> person section gang working for approximately 45 minutes when the inspector observes a track employee sitting on the rail. The FRA inspector intervenes by addressing the employee’s noncompliance with an RSR, and then discusses the noncompliance with the employee’s supervisor. The inspection report will include the recording of one occurrence of a Non-FRA defect for a track employee’s failure to comply with the specific RSR that prohibits employees from sitting on a rail. The inspector will record the inspection as one unit and <u>20</u> subunits</p> <p>Example 2: An FRA MPE Inspector observes <u>four</u> persons working on a railroad car with proper Blue Signal protection for approximately 10 minutes when the inspector observes one of the workers perform a task while not wearing the required protective equipment. The FRA inspector intervenes by addressing the employee’s noncompliance with a RSR by discussing it with the employee’s supervisor. The inspection report will include the recording of a Non-FRA defect for a car shop employee’s failure to comply with the specific RSR that prohibits performing the task without the proper protective equipment. The inspector will record the inspection as one unit and <u>four</u> subunits.</p>
218C	O,S,T	<p>Camp Car Protection - The purpose of this inspection is to determine compliance with camp car protection. Record one unit for each track inspected that requires camp car protection.</p>

Multi-discipline Code Table of Definitions
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Activity	Discipline	Definition
218M	M, O	<p>Blue Signal Protection on Main or Other than Main Track - The purpose of this inspection is to determine if the protection provided railroad employees requiring Blue Signal protection in accordance with §§ 218.25, 218.27, and 218.30. Record one unit for each track that requires Blue Signal protection. If the track requiring Blue Signal protection has more than one train or cut of cars requiring protection record one unit for the entire track.</p> <p>Regarding inspecting compliance with Blue Signal regulations involving a remotely controlled switch. Record one unit for all associated recordkeeping requirements at that location, and one subunit for each track associated with those records.</p> <p>Note 1: Except for stub tracks, both ends of the track must be inspected for compliance with the Blue Signal regulations.</p> <p>Note 2: There is a drop-down FRA observation code inspectors may use in lieu of writing a comment when there are not any exceptions noted.</p>

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Activity Code	Discipline	Definition
211	S	<p>Hours of Service – One unit for each signal employee who exceeded the hours of service. DO NOT use this Activity Code for Part 228 Hours of Duty Recordkeeping, as it has its own activity code.</p> <p>Note: When using this activity code, the inspector must have a companion 228 code on the same report. If the activity results in a civil penalty recommendation against the railroad, any companion 228 code civil penalty recommendations found during the same inspection must be referenced on the same inspection report. If there is a discrepancy between the hours of service record and the alleged exceeding the hours of service it must be explained in the report. If additional 228 defects are found during a subsequent inspection for the same case of excess service (railroad’s excess service report, for example), the initial inspection report number must be referenced.</p>
ABSO	S	<p>Automatic Block System Other - One unit for inspection and testing of each timing relay or timing device, and each auxiliary component within and interconnected to an Automatic Block System such as: slide protection devices, flood detectors, dragging equipment detectors, wide load detectors, hot bearing detectors, etc., or other similar devices affecting the control of the signal system.</p>
ABSS	S	<p>Automatic Block System Signals - One unit for inspection of each signal and all basic components associated within the control of a signal, such as: the track circuits and track wire connections, insulated rail joints, signal control relays or processor-based control equipment, line circuits, circuit plans, and relay or processor-based equipment housings.</p> <p>Note: Count one unit for each complete signal as would be viewed from the approaching direction, regardless of the number of signal heads on the signal (i.e., a red, over red, over lunar would count as one unit; a yellow over red as one unit; etc. A back-to-back signal, regardless of the number of signal heads on each, would be counted as two units.)</p>
ABSW	S	<p>Automatic Block System Switches - One unit for inspection of each switch, switch-and-lock movement, pipeline-connected lock, facing point lock of a mechanically locked switch, switch circuit controller, independently protected (circuited) derail, electric lock of a hand-operated switch, and any associated insulated rail joints, fouling circuits, pipe-connected derail, etc. within a switch layout.</p>

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Activity Code	Discipline	Definition
ACSL	S	Automatic Cab Signal Locomotive - One unit for each inspection of automatic cab signal (ACS) equipment, including the cab signal display, control equipment, audible alarm, cut-out device(s), and associated housings and wiring; and inspection and testing of each timing relay or timing device, that is installed on a diesel-electric locomotive unit, electric unit, or multiple-unit car.
ACSO	S	Automatic Cab Signal Other - One unit for inspection of each ACS test loop, cut section, and/or other location where testing of control circuitry occurs; and for inspection and testing of each wayside timing relay or timing device associated with such ACS system.
ATCL	S	Automatic Train Control Locomotive - One unit for each inspection of automatic train control (ATC) equipment, including the cab signal display, control equipment, audible alarm, cut-out device(s), and associated housings and wiring; and inspection and testing of each timing relay or timing device, that is installed on a diesel-electric locomotive unit, electric unit, or multiple-unit car.
ATCO	S	Automatic Train Control Other - One unit for inspection of each ATC test loop, cut section, and/or other location where testing of ATC control circuitry occurs.
ATSL	S	Automatic Train Stop Locomotive - One unit for each inspection of automatic train stop (ATS) equipment, including the cab signal display, control equipment, audible alarm, cut-out device(s), and associated housings and wiring; and inspection and testing of each timing relay or timing device, that is installed on a diesel-electric locomotive unit, electric unit, or multiple-unit car.
ATSO	S	Automatic Train Stop Other – One unit for inspection of each ATS inductor, ATS acknowledgment loop, or other location where associated testing of ATS control circuitry occurs.

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Activity Code	Discipline	Definition
HGCO	S	<p>Highway-rail Grade Crossing Other - One unit for inspection and testing of any device associated with the HGCS installation which is not covered under activity code HGCS or other appropriate code. Examples: Special wayside indicators used to inform trains of the warning system status, special interconnected systems which utilize traffic signals in lieu of flashing lights, and etc.</p> <p>Note 1: This activity code should not be used for inspection and testing of switch cut-out circuitry associated with HGCS. Use of the HGCW code will include inspection and testing of any applicable switch cut-out device or reverse switch cut-out arrangements associated with highway-rail grade crossing warning systems.</p>
HGCR	S	<p>Highway-rail Grade Crossing Record - One unit for each day, or partial day, for inspection of records regarding the results of tests and/or inspections performed in the office of a supervisory official having jurisdiction.</p> <p>Note: Record one subunit for each record inspected, i.e., each single form, card, page, or sheet, or comparable electronic record, filed or, in the case of electronic record, accessed or obtained, in an appropriate manner and from an official source.</p>

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Activity Code	Discipline	Definition
HGCS	S	<p>Highway-rail Grade Crossing Signal – Inspectors must record one unit for inspection of an entire highway-rail grade crossing warning system installation. Examples of an entire installation include: flashing lights with bell, flashing lights with gates and bells, wigwag, and etc. This single activity code count shall include related components such as the main equipment housing, circuit plans, relay or electronic control equipment, standby battery or power source, battery chargers, signs mounted on crossing signal masts, associated pole line, aerial cable, underground cable, and etc.</p> <p>Note: In addition to the one unit for each installation covered by the HGCS activity code, inspectors should record one subunit for inspection or testing of certain sub-components related to the HGC or pathway crossing warning system, as listed below.</p> <ul style="list-style-type: none"> • One subunit for flashing lights mounted on a mast (one subunit for each pair of flashing lights or in those rare cases where a single flashing light is used, by design, for an approaching lane of traffic.) • One subunit for flashing lights mounted on a cantilever (one subunit for each pair of flashing lights or in those rare cases where a single flashing light is used, by design, for an approaching lane of traffic) • One subunit for each strobe light, variable message sign, or other special lighting arrangement used in lieu of flashing lights, and etc. • One subunit for each gate mechanism including associated gate arm and gate lights • One subunit for each train detection circuit, including all track wire connections, rail joint bonding, and insulated rail joints • One subunit for each audible warning device (e.g., bell) • One subunit for each timing relay and/or timing device • One subunit for each cut-out device such as, push-button or key-operated devices associated with the system • One subunit for each highway traffic signal interconnect circuit, traffic signal pre-emption equipment and circuitry • One subunit for any additional approved component(s) not listed above

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Activity Code	Discipline	Definition
HGCW	S	<p>Highway-rail Grade Crossing Switch - One unit for inspection of each power, or hand-operated switch if the switch points or a derail is equipped with a cut-out feature, and/or is interconnected with HGCS control circuits. The insulated rail joints, any fouling circuits, fouling wires and connections, rail joint bonding in the switch layout, switch cut-out circuitry, and any associated pipe-connected derail, shall all be considered as part of the switch.</p> <p>Note: If a switch is being inspected for proper functioning of its interconnection with an HGCS System, use this activity code. If the switch is also being inspected for proper functioning as part of a signal system, use the appropriate activity code which matches the signal system, e.g. ABSW, TCSW, INTW and etc. It is possible in certain locations that inspectors may inspect the same switch as part of an HGCS system as well as another signal system, which will require the use of both activity codes, as applicable.</p>
IMBO	S	<p>Interlocking – Movable Bridge Other - One unit for each signal interlocked movable bridge when additional testing and inspection is performed beyond what is listed under IMBS.</p> <p>If movable bridge interlocking is equipped with one or more of the following, count one subunit for inspection and/or testing of each:</p> <ul style="list-style-type: none"> • Time locking circuit • Approach locking circuit • Route locking circuit • Indication locking circuit • Timing relay or timing device • Traffic locking circuit (if equipped) • Mechanical locking device, including mechanical locking of an interlocking machine • Associated boat or water traffic sensors or lights • Associated bridge position sensors • Associated audible warning or announcement (e.g. horns, sirens, and etc.) <p>Note: Example - Inspector observed testing of 2 time locking tests and 3 timing relay tests. Unit count would be 1 Unit under IMBO, and 5 subunits under IMBO.</p>

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Activity Code	Discipline	Definition
IMBS	S	<p>Interlocking – Movable Bridge Signal - One unit for inspection of each signal governing movements into and through an interlocking associated with a movable bridge, and everything associated within the control of the signal, such as: the track circuits and track wire connections, loss-of-shunt circuits, insulated rail joints, ground test of each energy buss, signal control relays or processor-based control equipment, line circuits, cable circuits, and circuit plans.</p> <p>Count one subunit for each test and/or inspection of the following:</p> <ul style="list-style-type: none"> • Circuit controller or other detection device used in place of a circuit controller involved in detecting surface or alignment of movable rails • Circuit controller or other detection device used in place of a circuit controller involved in detecting bridge locking • Circuit controller or other detection device used in place of a circuit controller involved in detecting bridge seating • Circuit controller or other detection device used in place of a circuit controller involved in detecting rail locks or any other function which is part of the bridge interlocking • Switch machine that powers pipe lines, rail locks, easer bars, lift rails, Conley frogs, or any associated device other than a switch or derail • Pushbutton and/or emergency release device <p>Example: Inspection of bridge with single track main would usually have a signal for each direction of rail traffic. The count would be 2 IMBS units, with the corresponding number of subunits, depending on which subunit items receive inspection.</p> <p>Note 1: Count one unit for each complete signal as would be viewed from the approaching direction, regardless of the number of signal heads on the signal (i.e., a red, over red, over lunar would count as one unit; a yellow over red as one unit; etc.).</p> <p>Note 2: Each switch or derail within limits of bridge interlocking should be counted as IMBW, following the instructions under IMBW activity code section. Locking circuit tests, timing relays, and other extra tests and inspections should be listed under IMBO as per the instructions.</p>

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Activity Code	Discipline	Definition
IMBW	S	<p>Interlocking – Movable Bridge Switch - When switch or derail is within bridge interlocking limits, count one unit for inspection of each single switch, each power-operated derail, each set of movable-point frogs, each single-slip switch, and each double-slip switch. Everything in the operation or control of a switch or derail, such as the switch-and-lock movement, pipeline, facing point lock of a mechanically-locked switch, and switch circuit controller; and an electric lock of a hand-operated switch will be considered as a part of the switch. The insulated rail joints, any fouling circuits, fouling wires and connections, rail joint bonding in the switch layout, and any associated pipe-connected derail shall all be considered as part of the switch.</p>
INTO	S	<p>Interlocking Other - One unit for inspection and testing of each traffic locking circuit, time locking circuit, approach locking circuit, route locking circuit, indication locking circuit, loss-of-shunt circuit, each timing relay or timing device, mechanical locking of an interlocking machine, or pushbutton and emergency release devices.</p>
INTS	S	<p>Interlocking Signal - One unit for inspection of each signal governing movements into and through an interlocking, and everything associated within the control of the signal, such as: the track circuits and track wire connections, insulated rail joints, signal control relays or processor-based control equipment, line circuits, and relay or electronic equipment housings.</p> <p>Note: Count one unit for each complete signal as would be viewed from the approaching direction, regardless of the number of signal heads on the signal (i.e., a red, over red, over lunar would count as one unit; a yellow over red as one unit; etc.)</p>
INTW	S	<p>Interlocking Switch - One unit for inspection of each single switch, each power-operated derail, each set of movable-point frogs, each single-slip switch, and each double-slip switch. Everything in the operation or control of a switch or derail, such as the switch-and-lock movement, pipeline, facing point lock of a mechanically-locked switch, and switch circuit controller; and an electric lock of a hand-operated switch will be considered as a part of the switch. The insulated rail joints, any fouling circuits, fouling wires and connections, rail joint bonding in the switch layout, and any associated pipe-connected derail shall all be considered as part of the switch.</p>

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Activity Code	Discipline	Definition
LCSR	S	<p>Locomotive Control System Record - One unit for each day, or partial day, for inspection of records regarding the results of tests and/or inspections performed in the office of a supervisory official having jurisdiction, or obtained in an appropriate manner and from an official source.</p> <p>Note 1: Record one subunit for each record inspected, i.e., each single form, card, page, or sheet, or comparable electronic record, filed or, in the case of electronic record, accessed, or obtained in an appropriate manner and from an official source.</p> <p>Note 2: When inspecting records maintained onboard an equipped locomotive (e.g. departure test, daily or after-trip test, etc.) count one LCSR unit per locomotive where records are inspected, and one subunit for each specific record reviewed for compliance.</p>

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Activity Code	Discipline	Definition
LTS	S	<p>Life Tips STC – Record one unit for each interaction/briefing of railroad or contractor employees regarding Federal regulations or issues regarding railroad safety. Record one subunit for each member of the work group. When using this code, the inspector must write a brief description (two sentences or so) in the “Comments” section of the inspection report (F6180.96).</p> <p>Example 1: You attend a safety meeting to discuss railroad safety issues (RWP, 218 Subpart F, and etc.). This meeting consisted of one signal supervisor and two signal maintainers. Record this activity as one unit under LTS, and three subunits under LTS.</p> <p>Example 2: You have active involvement in a job safety briefing with a train crew, group of roadway workers, etc. Your involvement may include FRA regulations regarding personal or operational safety (Parts 214, 218, etc.) Record this activity as one unit under LTS, and record one subunit for each train crew member, work crew member, etc.</p> <p>Example 3: You have active involvement in a discussion with five railroad workers regarding an FRA Safety or Emergency Advisory. Record this activity as one unit and five subunits under LTS.</p> <p>Note 1: This activity code does not include an FRA inspector debriefing a railroad representative(s) in connection with an FRA inspection report (F6180.96).</p> <p>Note 2: This activity code does not include attending a labor organization’s meeting.</p>
OTHL	S	<p>Other System Locomotive - One unit is recorded for each locomotive inspected for onboard equipment, which is not covered by activity codes ACSL, ATCL, or ATSL.</p>
OTHO	S	<p>Other System Other – One unit for inspection of each supplementary device or function within an "other signal arrangement" (similar to a type of signal system). Examples could include: track integrity warning system, remote switch control or switch position detection system, locomotive pacing or speed control system, unusual contingency detection system, etc., all within an otherwise non-signalized territory.</p>
OTHS	S	<p>Other System Signal – One unit for inspection of each indicating device or method of providing route information (e.g., audio broadcast) in an “other signal arrangement” or system. Also includes supplementary devices or functions within an “other signal arrangement.”</p>

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Activity Code	Discipline	Definition
OTHW	S	Other System Switch - One unit for inspection of each single switch, each power-operated derail, each set of movable-point frogs, each single-slip switch, and each double-slip switch in an "other signal arrangement" type of system, all within an otherwise non-signaled territory. Everything in the operation or control of a switch or derail, such as the switch-and-lock movement, associated pipeline, facing point lock of a mechanically-locked switch, and switch circuit controller; an electric lock of a hand-operated switch will be considered as a part of the switch. The insulated rail joints, any fouling circuits, fouling wires and connections, rail joint bonding in the switch layout, and any associated pipe-connected derail shall all be considered as part of the switch.
PTCC	S	Positive Train Control Communications - One unit for inspection of any of the communications portion of a Positive Train Control (PTC) system that develops, executes, transmits, receives, or stores any safety-critical data, to or from one location to another, for which its proper function is relied upon in the expected performance of the system.
PTCD	S	Positive Train Control - Dispatching or Control Center - One unit for inspection of any part of the office portion of a PTC system that is used to develop, execute, transmit, receive, or store any safety-critical data, for which its proper function is relied upon in the expected performance of the system.
PTCG	S	Positive Train Control Geographic Information System - (GIS, includes Track Database) One unit for inspection of any of the GIS information portion of a PTC system that is used to develop, execute, transmit, receive, or store any safety-critical data, for which its proper function is relied upon in the expected performance of the system.
PTCI	S	Positive Train Control – Incident Investigation - One unit for an “activity” directly associated with the informal investigation of any incident associated with any safety-critical function of a PTC system where an inspection report is not otherwise warranted. (This would not include a formal accident or complaint investigation as an inspection report would be warranted using the other applicable activity codes which would apply in such a case.)
PTCL	S	Positive Train Control Locomotive - One unit for inspection of the equipment and/or functionality onboard any PTC-equipped locomotive that is associated with the proper and intended performance of the system.

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Activity Code	Discipline	Definition
PTCM	S	<p>Positive Train Control Monitor - One unit for accompanying and observing any type PTC system testing that would not be captured in one or more of the other existing PTC codes. This code is reserved for use in activities prior to revenue service of a PTC system. Examples would include: track database verification, wayside interface unit verification, train braking testing, back office testing, locomotive onboard installations, communication coverage testing, etc.</p> <p>Note: Use this code for pre-revenue service test monitor activity such as track database verification, train brake or stopping distance testing, and etc.</p>
PTCO	S	<p>Positive Train Control Other - One unit for inspection of the equipment and/or functionality of any PTC subsystem or component that is associated with the proper and intended performance of the system and is not better identified or included in any other PTC activity code.</p>
PTCP	S	<p>Positive Train Control Plans - One unit for inspection of a Railroad Safety Program Plan or Product Safety Plan and any associated documentation such as: the Operations and Maintenance Manual, training programs, configuration management plans, hazard tables and documents, etc.</p>
PTCR	S	<p>Positive Train Control Record - One unit for inspection each day, or partial day, of the records associated with the proper and intended performance of a PTC system, such as: inspection or test records, training records, failure records, hazard logs, and etc.</p> <p>Note: Record one subunit for each record inspected, i.e., each single form, card, page, or sheet, or comparable electronic record, filed or, in the case of electronic record, accessed, or obtained in an appropriate manner and from an official source.</p>
PTCS	S	<p>Positive Train Control Signal - One unit for inspection of any signal, other similar indicating device, or other method of providing route information associated with the proper and intended performance of a PTC system that is not already identified or included in any other activity code associated with an underlying conventional signal system or other signal arrangement (e.g., ABSS, TCSS, OTHS etc.).</p>
PTCT	S	<p>Positive Train Control Trackside Equipment - (includes Wayside Interface Unit –WIU). One unit for inspection of any trackside equipment associated with the proper and intended performance of a PTC system that is not already identified or included in any other activity code associated with a conventional signal system or other similar arrangement or system.</p>

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Activity Code	Discipline	Definition
PTCW	S	<p>Positive Train Control Switch - One unit for inspection of any monitored switch associated with the proper and intended performance of a PTC system that is not already identified or included in any other activity code associated with an underlying conventional signal system or other similar arrangement or system (e.g., ABSW, TCSW, OTHS, etc.).</p>
SIGO	S	<p>Signal Other - One unit for inspection or investigation of any matters concerning Part 236, Subpart H or I requirements, not otherwise captured within any of the other S&TC activity codes, including PTC. An example would be a new or novel processor-based dispatching system through which train movements or track occupancy authorities, or other safety-relevant information, are electronically generated and delivered without dispatcher or control operator concurrence or confirmation.</p>
SIGR	S	<p>Signal Record - One unit for each day, or partial day, for inspection of records regarding the results of tests and/or inspections performed in the office of a supervisory official having jurisdiction or obtained in an appropriate manner and from an official source, which are not captured by another specific activity code.</p> <p>Note: Record one subunit for each record inspected, i.e., each single form, card, page, or sheet, or comparable electronic record, filed or, in the case of electronic record, accessed, or obtained in an appropriate manner and from an official source.</p>
SMCP	S	<p>Software Management Control Plan - One unit for each location where inspector reviews or inspects a railroad's software management control plan (SMCP), the status of implementation of the plan, railroad compliance with the prescribed process and procedures of the plan, and etc.</p> <p>Note: Record one subunit for each specific software line item listed on the railroads SMCP inventory which is inspected or verified for compliance.</p>

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Activity Code	Discipline	Definition
STRM	S	<p>Signal Train Ride - One unit for conducting an inspection from onboard the locomotive of a train, including visual inspection of obvious conditions and/or functions of a signal system or other signal arrangement. A train ride warrants one STRM unit for each specific train, i.e., if riding on one train in one direction and another train back; or one train for a distance and then another train further in the same direction; record one unit for each of the two different trains in each case.</p> <p>Note 1: Record one subunit for each mile traveled during the onboard inspection.</p> <p>Note 2: Most defective conditions which may be observed from the train, such as those related to pole lines or highway-rail grade crossing warning systems should be shown on the inspection report as "Comments to The Railroad." If however an inspector observes any condition of an imminent safety concern (such as an observed activation failure), the train crew should be requested to immediately report the condition to the designated person(s). The other activity codes and unit counts associated with onsite inspection of the individual locations along the route of the train ride should not be listed on the report. This inspection data is only appropriate when separate specific onsite inspections are performed.</p>
TCSO	S	<p>Traffic Control System Other - One unit for inspection and testing of each time locking circuit, approach locking circuit, route locking circuit, indication locking circuit, loss-of-shunt circuit, each timing relay or timing device; or slide protection device, dragging equipment detector, wide load detector, hot bearing detector, or flood detector, and etc., interconnected with the signal system at each location.</p>
TCSS	S	<p>Traffic Control System Signal - One unit for inspection of each signal and everything associated within the control of a signal, such as: track circuits and track wire connections, insulated rail joints, signal control relays or electronic equipment, line circuits, circuit plans, and relay or electronic equipment housings.</p> <p>Note: Record one unit for each complete signal as would be viewed from the approaching direction, regardless of the number of signal heads on the signal (i.e., a red, over red, over lunar would count as one unit; a yellow over red as one unit; etc. A back-to-back signal, regardless of the number of signal heads on each, would be counted as two units.)</p>

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Activity Code	Discipline	Definition
TCSW	S	<p>Traffic Control System Switch - One unit for inspection of each single switch, each power-operated derail, each set of movable-point frogs, each single-slip switch, and each double-slip switch. Everything in the operation or control of a switch or derail, such as the switch-and-lock movement, associated pipeline, facing point lock of a mechanically-locked switch, and switch circuit controller and electric lock of a hand-operated switch, will be considered as a part of the switch. The insulated rail joints, any fouling circuits, fouling wires, associated rail joint bonding in the switch layout, and any associated pipe-connected derail shall all be considered as part of the switch.</p>

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Activity	Discipline	Definition
218O	ALL	<p>Part 218 Subpart F – The purpose of this inspection is to determine a railroad’s compliance with Part 218 Subpart F, including the requirement for a railroad to have complying railroad operating rules as indicated in the regulation. Record one unit for each day, or partial day, spent reviewing relevant railroad rules or for each yard or equivalent facility monitored. Record one subunit for each crewmember, yardmaster, contractor, track employee, mechanical employee, signal maintainer, etc, that the inspector continually observed a sufficient amount of time to determine compliance or noncompliance.</p> <p>Note: It is FRA policy that inspectors provide information regarding incidents recorded under this activity code as noncompliance of a Federal regulation. It will include <u>identifying the noncompliant individual by name</u> in the inspection report. See the General Manual for a further explanation.</p> <p>Example 1: An FRA Track Inspector observes a <u>12</u> person section gang working for approximately 45 minutes when the inspector observes a track employee throwing a switch with equipment in the foul of the switch. The FRA inspector intervenes by addressing the employee’s noncompliance with §218 Subpart F, and then discusses the noncompliance with the employee’s supervisor. The inspection report will include the recording of the noncompliance for the track employee’s failure to comply with Part 218 Subpart F, and the name of the employee in noncompliance. The inspector will record the inspection as one unit and <u>12</u> subunits.</p> <p>Example 2: An FRA MPE Inspector observes <u>six</u> persons switching railcars in a car shop for approximately 10 minutes when the inspector observes one of the workers fail to properly protect a shoving movement. The FRA inspector intervenes by addressing the employee’s noncompliance with §218 Subpart F, and then discusses the noncompliance with the employee’s supervisor. The inspection report will include the recording of the noncompliance for the car shop employee’s failure to comply with the Part 218 Subpart F, and the name of the employee in noncompliance. The inspector will record the inspection as one unit and <u>six</u> subunits.</p> <p>Example 3: An inspector reviews the railroad rules to determine if they are in compliance with the requirements set forth regarding railroad equipment in the foul and operating switches. The inspection report will include the recording of one unit for this inspection and will also reference the precise railroad rule(s), or lack thereof, in the inspection report’s narrative.</p>

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Activity	Discipline	Definition
218S	M, O	<p>Blue Signal Protection Locomotive or Car Shops - The purpose of this inspection is to determine compliance with regulations requiring Blue Signal protection in a locomotive servicing track area, a car shop repair track area, or a track that has been designated as a repair track or expedite track. Record one unit for each area inspected.</p> <p>If § 218.29(c), <i>Alternative methods of protection</i>, applied in a car shop repair track area or a locomotive servicing track area, one unit is recorded for the entire area, regardless of the number of tracks in the area or the number of cars or locomotives on those tracks.</p> <p>Note 1: Except for stub tracks, both ends of the track, or each entrance to the area must be inspected for compliance with the regulation. Workers must be on, under, or between equipment, inspecting, testing repairing, or servicing before recording a unit for this activity.</p> <p>Note 2: There is a drop-down FRA observation code inspectors may use in lieu of writing a comment when there are not any exceptions noted.</p>
221	M, O	<p>Rear End Markers – The purpose of this inspection is to monitor compliance with Part 221. This activity code <u>should not be used</u> when inspecting an End of Train (EOT) device under Part 232. Record one unit for each train, locomotive (including DPU’s) or caboose inspected for compliance.</p> <p>The inspection of each rear end marking device in rooms or locations where rear end marking devices are stored and/or recharged and maintained is one unit. Each rear end marker ID must be recorded in the line item along with the appropriate observation. Individual marking devices that are not attached to trains or in storage areas not subject to service are not recorded as a unit.</p> <p>Note: There is a drop-down FRA observation code inspectors may use in lieu of writing a comment when there are not any exceptions noted.</p>

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Activity	Discipline	Definition
227N	IH	<p>227N - Occupational Noise Exposure - The purpose of this inspection is to determine compliance with Part 227 regarding occupational noise exposure in the locomotive cab. It will include audiometric test records, employee noise exposure monitoring plan and monitoring records, cab noise monitoring records, postings of monitoring results, training plans and records, or interviewing persons regarding noise exposure. Record one unit for each day or partial day of an inspection and one subunit for each Part 227 record reviewed.</p> <p>Note: This activity may only be claimed when accompanied by a member of the Industrial Hygiene staff.</p>
228	O, S	<p>Hours of Service Records Inspection – The purpose of this inspection is to determine if Hours of Service (HOS) records are in compliance with Part 228. Record one unit for each day or partial day of inspection, and one subunit for each HOS record reviewed. This activity code includes any examination of HOS logs, HOS report forms, HOS documents, interviewing employees regarding HOS, and any other HOS records review activity. This activity code is not used to document an employee exceeding the HOS.</p> <p>Note: Reports <i>taking exception to</i> an employee exceeding the hours of service should not be recorded under this activity code, please reference the proper activity code associated with the employee’s type of work or discipline. Example: Activity Code 228P, 211, or HSL.</p>
228C	O,S	<p>Construction of Employee Sleeping Quarters – The purpose of this inspection is to determine compliance with Part 228 Subpart C. Record one unit for each day, or partial day, spent reviewing relevant facilities regarding Part 228 Subpart C.</p>
229X	H, O	<p>Locomotive Inspection in Operations – The purpose of this inspection is for any inspector, other <u>than an MP&E inspector</u>, to determine a railroad’s compliance with Part 229. Record one unit for any locomotive inspected. The inspection may include, but is not limited to, the locomotive daily inspection, any passageway tripping hazards, cab sanitation, cab lighting, speed indicator check, etc.</p>

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Activity	Discipline	Definition
232E	M, O	<p>End of Train Device – The purpose of this inspection is to inspect an End of Train (EOT) device for compliance of §232. The inspection must include verifying that the information on the calibration sticker is legible, and that it contains the date, name of person, and location of the last calibration. This activity also includes comparing the quantitative values between the front and rear unit, and the ability of the rear unit to effect an emergency application in response to an emergency application initiated from the front unit. Record one unit for each EOT inspected or observed for compliance.</p> <p>Note: This activity code will be used when citing defects on the Head End Device (HED) associated with the End of Train device (EOT).</p>
232O	H, O, S, T	<p>Freight Train Brake Test Observation – The purpose of this inspection is for any inspector, <u>other than an MP&E inspector</u>, to determine compliance with Part 232 not covered in activity code 232E or 232X. It includes any airbrake test required by Part 232. Airbrake test inspections should include in the narrative of the inspection report if the inspector was observing or accompanying a railroad employee or contractor employee performing the airbrake test. Record one unit for each observation or inspection, and one subunit for each railcar involved.</p>

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Activity	Discipline	Definition
232X	M, O	<p>Securement of Locomotive and Cars – The purpose of this inspection is to determine if railroad equipment is in compliance with §232.103 (n). Record units as follows:</p> <ol style="list-style-type: none"> 1. Record one unit for an inspection of unattended equipment that consists of a single locomotive or locomotive consist, either attached to cars or not. This inspection includes determining compliance with the requirements for throttle position, status of the reverse lever, position of the generator field switch, status of the independent brakes, position of the isolation switch, handbrake, and position of the automatic brake valve. 2. Record one unit for an inspection of unattended equipment NOT attached to locomotives that are required to be secured under this regulation. This unit includes inspections for bottled air. <p>Note 1: If a train is separated to avoid blocking any type of crossing it should have each section of the equipment recorded as a separate unit.</p> <p>Note 2: The inspection report that records a defect or recommended violation indentified should clearly state the number of handbrakes found to be applied, the number of handbrakes required to be applied, and the current operating rule in place that indicates the precise number of handbrakes required to be applied.</p> <p>Note 3: This inspection also includes an inspector reviewing railroad rules for compliance of this part.</p> <p>Example: If 30 unattended railcars are found on a track that is required to have seven hand brakes applied but the inspection reveals that only has one handbrake is applied, it will be recorded as one unit with one occurrence for the failure to have the other six handbrakes applied.</p>
238O	H,O, S, T	<p>Passenger Equipment Inspection (Partial) – The purpose of this inspection is for any inspector, <u>other than an MP&E inspector</u>, to determine compliance with Part 238 that is not covered in activity codes 232X or 238T. Record one unit for each inspection and a subunit for each passenger car inspected.</p>

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Activity	Discipline	Definition
238T	M, O	<p>Passenger Train Brake Test Observation – The purpose of this inspection is to document an observation of a passenger train airbrake test, excluding tourist equipment. Record one unit for each entire brake test observed for compliance with §238, and one subunit for each railroad record associated with the Class I airbrake test.</p> <p>Note: There is a drop-down FRA observation code inspectors may use in lieu of writing a comment when there are not any exceptions noted.</p>
238X	M, O	<p>Passenger Equipment Securement – The purpose of this inspection is to determine if passenger or commuter equipment is properly secured (excluding tourist equipment). Record one unit for each train, whether or not a locomotive is attached.</p>
BPL	H, M	<p>Bulk Packages, (Applies to bulk packagings, including Intermodal Portable Tanks and Intermediate Bulk Containers, other than tank cars) – One unit for each limited, ground level inspection of both sides of the bulk package and does not include a top level inspection. This activity code may only be used when assessing compliance with §§172.302, 172.304, 173.326, 172.502, 172.516, and 174.50.</p> <p>Note 1: Use TCL & TCT codes to record tank car inspections.</p>
BWS	S,T	<p>Bridge Worker Safety – An inspection concerning Part 214 Subpart B, Bridge Worker Safety Standards. Record one unit for each bridge gang or work group, and one subunit for each member of the gang or work group.</p>
FCL	H, M	<p>Inspection of Freight Containers, General Handling and Loading Requirements – The purpose of the inspection includes inspecting the exterior of freight containers for markings, placards, structural integrity, and securement to the railcar. Record one unit for each freight container inspected.</p> <p>Note 1: Use BPL & BPT codes to record intermodal tank inspections.</p>

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Activity	Discipline	Definition
NOIR	ALL	<p>Noise Test Records – The purpose of this inspection is to document a review of a locomotive’s noise testing session, or a locomotive’s noise testing record. Record one unit for each locomotive’s noise testing session monitored and/or all noise testing records associated with the locomotive tested.</p> <p>Example 1: A short line railroad has three records on file documenting a locomotive horn test performed on locomotive SP 1234. Record one unit for the examination of all three records.</p> <p>Example 2: A short line railroad has three records on file documenting a locomotive horn test performed on locomotive SP 1234, and two records on SP 2345. Record two units for the inspection of the noise testing records for two locomotives.</p> <p>Example 3: An inspector monitors three noise testing sessions on SP 4567, and then reviews three noise testing records regarding that same locomotive. Record one unit for the locomotive and testing records involved.</p> <p>Note 1: This activity code should only be used by inspectors who have been trained to inspect locomotive horn testing records.</p> <p>Note 2: This activity code should not be used with Part 227 Occupational Noise Exposure inspections, (activity code 227N), or when performing a noise test (activity code NOIS).</p>
NOIS	ALL	<p>Noise Tests – The purpose of this inspection is to perform a noise test in accordance with Federal regulations. This activity code should only be used by inspectors who have attended the FRA training course regarding the equipment used to conduct these inspections. Record one unit for each day or partial day of an inspection.</p> <p>This activity code should not be used with Part 227 Occupational Noise Exposure inspections, (activity code 227N), or when reviewing noise records (activity code NOIR).</p>

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Activity	Discipline	Definition
RADX	H, O, T	<p>Radar Speed Monitoring – The purpose of this inspection is to monitor and/or accurately validate the speed of trains and railroad equipment for compliance with Federal regulations and/or railroad operating rules. Record one unit for each speed monitoring session and one subunit for each locomotive, train, or railroad equipment on the rail monitored. Non-compliance with railroad operating rules should be recorded under activity code 217O.</p> <p>Note 1: When entering this code, the inspector must indicate the initials and number of the lead locomotive, or a locomotive within the consist, in the Train # / Site Field. This Field permits the entry of 15 characters. Each train or piece of equipment monitored will require a new line item.</p> <p>Note 2: FRA and participating state employees must not perform radar monitoring sessions unless they received a certificate of qualification from an FRA employee who holds a current certificate as a stationary radar trainer. See Chapter 3 of the General Manual for a complete discussion of FRA policy.</p>
RMM	T, S	<p>Roadway Maintenance Machine & Hi-Rail – The purpose of this inspection is to document an observation or inspection concerning § 214 Subpart D, On-Track Roadway Maintenance Machines and Hi-Rail Vehicles. Record one unit for each Roadway Maintenance Machine or Hi-Rail Vehicle inspected.</p> <p>Example: If a large scale tie unit consisting of 20 roadway maintenance machines and one Hi-Rail vehicle is operating on the tracks, and only five of those machines are inspected, then record five units.</p> <p>Note: If a machine operator fails to comply with railroad rules not covered by Part 214 or any Federal regulation the inspector must note the non-compliance by recording it using a Non-FRA defect under activity code 217O, as provided in the guidelines of that activity code.</p>

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Activity	Discipline	Definition
RULE	ALL	<p>Rulebook Review - The purpose of this inspection is to record an inspector's review or formal discussion with a railroad manager, regarding railroad rules that will determine if they accurately correlate with current FRA regulations. Record one unit for each day, or partial day, spent reviewing a railroad rule(s) for compliance with Federal regulations. Record a subunit for each CFR section involved. Only comments should be recorded under this activity code. Any defects should be recorded under the proper corresponding activity code.</p> <p>Note: Inspections regarding reviewing railroad rules to ensure compliance regarding §232.103 (n) and Part 218 Subpart F should not be recorded under this activity code. Inspectors should reference activity code 232X and 218O respectively for those railroad rule inspections.</p> <p>Example 1: An inspection of NEBR railroad's rulebook determined that railroad rules regarding signal systems (Part 234 and Part 236) comply with Federal regulations. Record one unit and two subunits.</p> <p>Example 2: An inspection that included discussions with railroad managers regarding NEBR railroad's rulebook and bulletins determined that the railroad's rules regarding Part 217 and Part 220 Subpart C, correlated with FRA regulations. Record one unit and two subunits.</p>

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Activity	Discipline	Definition
RWP	O, S, T	<p>Roadway Worker Protection – The purpose of this inspection is to determine compliance with Part 214 Subpart C, Roadway Worker Protection (RWP). Record one unit for an individual worker or group of employees (with a roadway worker in charge) at a specific location. This will include attending a job briefing with a group of RWP employees. Record each train required to provide an audible warning signal as a separate unit, and each employee requiring RWP as a subunit.</p> <p>Note: When performing multi-point inspection work with the same employee (or group of employees), record only one unit for determining compliance, and one subunit for each employee of the workgroup per day.</p> <p>Example 1: When observing or inspecting a large production crew, record a separate unit for each different location where an employee (or group of employees) is monitored for compliance. E.g. large projects may have multiple teams or workgroups at various locations along the right of way, record each worker, team or workgroup at each different location as a separate unit.</p> <p>Example 2: You observe an RWP crew consisting of <u>one</u> employee-in-charge and <u>20</u> track employees together at a single location. Record one unit for the location and <u>21</u> subunits for the entire RWP work group.</p>
TCL	H, M	<p>Tank Car Inspection – The purpose of this inspection includes inspecting for markings, placards, and structural integrity, and securement. Record one unit for each ground level inspection that did <u>not</u> include a top level inspection. This activity code may only be used when assessing compliance with §§172.302(a)(1), 172.304, 172.502(a)(1)(i), 172.516(c)(2) and (6), 174.50, 179, & 180.</p>
TPLH	H, M, O	<p>In-Train Placement of Placarded Rail Cars, Transport Vehicles, and Freight Containers - The purpose of this activity is to determine compliance with positioning in-train of placarded cars, §§174.84 and 174.85. Record one unit for each train inspected.</p>