Sierra Northern Railway

Program of
Roadway Worker On-track Safety
and
Bridge Worker Safety

49 CFR Part 214

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This program has been developed utilizing the General Code of Operating Rules – Eighth Edition with individual rules in red.

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1.0 ROADWAY WORKER PROTECTION ACT

1.1 Purpose of the Roadway Protection Act

This program has been adopted to prevent accidents and casualties caused by moving railroad cars, locomotives, or roadway maintenance machines striking roadway workers or roadway maintenance machines.

This program prescribes safety standards related to the movement of roadway maintenance machines where such movements affect the safety of roadway workers including ABS signaled yard and restricted limits.

Working limits are not required on non-controlled tracks when making movements with on-track equipment while not engaged in roadway worker activities. No work can be performed on the ground unless on-track safety has been established. Follow these procedures before making movements on non-controlled track:

- Contact the employee who directs movements (Yardmaster, Trainmaster, etc.) on the tracks, if applicable,
- Make all movements prepared to stop within one-half the range of vision, not exceeding restricted speed.
- Make an announcement over the radio of the movements to be made.

NOTE: This provision cannot be used on tracks where trains can operate above restricted speed.

1.1.1 Program Objectives

- Protect roadway workers from being struck by moving locomotives, cars and roadway maintenance machines.
- Prevent accidents and casualties caused by collisions between roadway maintenance machines and moving locomotives, cars and/or other maintenance machines.
- Ensure roadway workers have a safe working environment.
- Prevent accidents and casualties caused by operation of on-track roadway maintenance machines and hi-rail vehicles.

1.1.2 Documentation

These rules are to be maintained in the On-Track Safety Manual and must be readily available to all Roadway Workers. Each roadway worker responsible for the on-track safety of others (i.e., Roadway Worker in Charge (RWIC) and Lone Worker) must have a copy of this manual accessible while on duty. A supervisor or dispatcher, which can be contacted with immediate access to the On-Track Safety Manual, meets the requirement of "readily available" for a Lone Worker. The manual should contain this document, the applicable operating rules (including bulletins, general notices, etc.), the timetable for the railroad and other applicable safety rules. Additionally, any changes to these documents will be issued by General Order, Special Instruction or Track Bulletin and must be retained in this manual.

1.1.3 Records

Training records will be maintained by the railroad for each Roadway Worker and crane operators per 243.203. At a minimum each record shall include the name of the employee, the type of qualification made, and the most recent date of qualification. Records can either be written or electronic. These records shall be kept available for inspection and photocopying by the Federal Railroad Administrator during regular business hours.

1.2 Monitoring

A person qualified on Chapter One of this program and the railroads operating rules will conduct periodic monitoring, with a minimum of one observation annually per roadway worker, to ensure compliance. These observations will place emphasis on job briefings, protection provided (e.g., exclusive track occupancy, foul time, train coordination, inaccessible track, watchman/lookout, etc.) and unnecessary fouling.

1.3 Training

1.3.1 Employer

Sierra Northern Railway will provide all employees who are roadway workers with training as shown in the chart below:

Course ID	Class Name	Frequency of Class
SPRK-DA2193	What You Need to Know About Federal Drug & Alcohol Testing	Initial class (1 time only)
SPRK-RO220	Radio Communication & Electronic Devices	Every 3 years
SPRK-RO218F	Handling Equipment, Switches, and Fixed Derails	Every 3 years
SPRK-RW2142	On-Track Safety (Machine Operations Added)	Once a year
SPRK-RW2143	FRA Machine Inspections	Every 3 years
SPRK-214B	Bridge Worker Safety Standards	Every 3 years

1.3.2 Training and Qualification - General

- SNR shall not assign an employee to perform the duties of a roadway worker and no employee shall accept an assignment, unless that employee has received training in the on-track safety procedures associated with the assignment to be performed, and that employee has demonstrated the ability to fulfill the responsibilities for on-track safety that are required of an individual roadway worker performing that assignment.
- Roadway Worker training will be conducted on an online platform called Rail Tasker LMS. Through the online platform, employees will be assigned classes and test which are included in the chart above.
- Railroad employees other than roadway workers, who are associated with on-track safety procedures, and whose primary duties are concerned with the movement and protection of trains, shall be trained to perform their functions related to on-track safety through the training and qualification procedures prescribed by the operating railroad for the primary position of the employee, including maintenance of records and frequency of training.
- New hires will receive an initial training class before being allowed to perform the duties of a roadway worker.

1.3.3 All Roadway Workers

- The training of all roadway workers will include:
    - Recognition for railroad tracks and understanding of the space around them within which On-Track Safety is required.
    - The functions and responsibilities of various persons involved with on-track safety procedures.
    - Proper compliance with on-track safety instructions given by persons performing or responsible for on-track safety functions.
    - Proper compliance with on-track safety instructions given by roadway maintenance machine operators when working near roadway maintenance machines.
    - Signals given by watchmen/lookouts, and the proper procedures upon receiving a train approach warning from a lookout.
    - The hazards associated with working on or near railroad tracks and roadway maintenance machines including review of on-track safety rules and procedures.
    - SNR safety rules regarding safely crossing tracks.

1.3.4 Training and Qualification of Lone Workers

- Each Lone Worker shall be trained and qualified by the employer to establish on-track safety in accordance with the requirements of this section and must be authorized to do so by SNR. The training and qualification for lone workers shall include:
    - Detection of approaching trains and prompt movement to a place of safety upon their approach.
    - Determination of the distance along the track at which trains must be visible to provide the prescribed warning time.
    - Rules and procedures prescribed by the railroad for individual train detection and establishment of working limits.
    - Alternative means to access the On-Track Safety Manual when a lone worker's duties make it impracticable for the on-track safety manual to be readily available.
    - Initial and periodic qualification of a lone worker shall be evidenced by demonstrated proficiency.

1.3.5 Training and Qualifications for Watchman/Lookout

- The training and qualification for roadway workers assigned the duties of watchmen/lookouts shall include:
    - Detection and recognition of approaching trains.
    - Effective warning of roadway workers of the approach of trains.
    - Determination of the distance along the track at which trains must be visible to provide the prescribed warning time.
    - Rules and procedures to be used for train approach warning.
    - Initial and periodic qualification of a watchman/lookout shall be evidenced by demonstrated proficiency.

1.3.6 Training and Qualifications of Flagman

- The training and qualification for roadway workers assigned the duties of flagmen shall include, as a minimum, the content and application of the operating rules pertaining to giving proper stop signals to trains and holding trains clear of the working limits.
- Initial and periodic qualification of a flagman shall be evidenced by demonstrated proficiency.

1.3.7 Training and Qualifications of an RWIC

- The training and qualification of each RWIC who provides on-track safety of roadway workers through establishment of working limits, or the assignment and supervision of watchmen/lookouts or flagmen shall include:
    - All the on-track safety training and qualification required of the roadway workers to be supervised and protected, including the procedures governing good faith challenges.
    - The content and application of the operating rules of the railroad pertaining to the establishment of working limits.
    - The content and application of the rules pertaining to the establishment of train approach warning (Watchman/Lookout).
    - The relevant physical characteristics of the territory of the railroad upon which the roadway worker is qualified.
    - The procedures required to ensure that the RWIC of the on-track safety group(s) of roadway workers remains immediately accessible and available to all roadway workers being protected under the working limits or other provisions of on-track safety established by the roadway worker in charge.
    - Initial and periodic qualification of a RWIC shall be evidenced by demonstrated proficiency.

1.3.8 Training and Qualifications of Roadway Maintenance Machine (RMM) Operator

1.3.8.1 General Training Requirements

No employee may operate a RRM without first:

- Having been trained in accordance with the rules,
- Having been informed of the safety procedures applicable to persons working near the machine and
- Acknowledging full understanding of those safety procedures.

1.3.8.2 RMM Specific Training and Qualification Requirements

- Training and qualification of operators of RMMs:
    - An employee will not be considered qualified to operate a RMM without having been trained to be competent in the operation of that RMM. This training may be accomplished on the job through peer instruction or through a combination of classroom training and peer training.
    - Operators must have demonstrated proficiency on any RMM that the operator is qualified.
    - Operators will be trained in the following:

- Procedures to prevent fellow employees from being struck by the operating RMM,
- Procedures to prevent any part of the RMM being operated from being struck by a train or equipment on another track,
- Procedures to prevent one RMM from running into another RMM or other track obstruction,
- Methods to determine the safe operating procedure for each RMM to be operated (i.e., ensuring the operator's manual is available to the operator).
- Initial and periodic qualification of an operator of a RMM shall be evidenced by demonstrated proficiency.

1.3.8.3 Training and Qualification of Operators of Roadway Maintenance Machines Equipped with a Crane

- Operators of RMM's equipped with a crane will meet the same training, qualifications, and responsibilities of RMM operators per On-Track Safety Rules 1.3.8.1 and 1.3.8.2 with additional and periodic training and qualification per Part 243.201 by Spark Training approved 214.357 Crane Training Program under course ID code: SPRK-RMM2141.

1.4 Job Briefings

A job briefing must be conducted prior to any roadway worker fouling any track. A job briefing is complete only when each roadway worker acknowledges understanding of the on-track safety procedures and instructions.

1.4.1 Job Briefing for Roadway Work Group

The RWIC must conduct a job briefing that includes all information related to on-track safety. This Job Briefing is given to every roadway worker who will foul the track. If the RWIC cannot provide a briefing to all roadway workers in advance of a change to on-track safety, all roadway workers must immediately leave the foul of the track. In addition to other safety issues, the *minimum* on-track safety information must include:

- Designated RWIC and information on the accessibility of the RWIC with alternative procedures in the event the RWIC is no longer accessible to the members of the roadway work group.

NOTE: When authorities overlap, those roadway workers in charge of the respective authorities must determine who will be the sole RWIC of the overlapping authorities.

- Type of on-track safety provided.
- Track and time limits of track authority.
- Track(s) that may be fouled.
- Nature and characteristics of the work to be performed, to determine if adjacent track protection is necessary.

- Information about any adjacent tracks, on-track safety on adjacent tracks, if required or deemed necessary by the RWIC, and identification of any roadway maintenance machines that will foul such tracks.
- Procedure to arrange for on-track safety on other tracks, if necessary.
- Method of warning when on-track safety is provided by a Watchman/Lookout.
- Designated place of safety where workers clear trains.
- Designated work zones around machines.
- Safe working/traveling distances between machines.

The RWIC must give a follow-up job briefing whenever:
- Working conditions or procedures change,
- Other workers enter the working limits,
- On-Track Safety is changed or extended or
- The main track has been cleared and on-track safety or track authority is to be released.

1.4.2 Job Briefing for Lone Workers

A Lone Worker must participate in an job briefing with his supervisor or other designated employee at the beginning of each tour of duty. This briefing must include:
- Planned itinerary
  and
- On-Track Safety procedure to be used.
- Completion of a Statement of On-Track Safety if Individual Train Detection per rule 1.5.3 is to be used.

NOTE: When communication has failed, the job briefing must be conducted as soon as possible after communication is restored.

1.4.3 Communication Requirements

Each employee designated by the railroad to provide on-track safety for a roadway worker group(s) must be equipped with a wireless communication device capable of reaching the control center of the railroad. The employee must, where practicable, maintain immediate access to the communication device. When immediate access is not practicable, the RWIC or Lone Worker must be equipped with a radio capable of monitoring transmissions from train movements in the vicinity.

NOTE: This section does not apply to railroads with less than 400,000 annual employee hours, which operate trains at speeds of 25 mph or less.

1.5 On-Track Safety Procedures

On-Track Safety can be provided for roadway workers by the following methods:

- Exclusive Track Occupancy
  - Track and Time Permit in CTC Territory (GCOR 10.3)
  - Track Warrant (GCOR 14.0)
  - Form B Bulletin (GCOR 15.0)
  - Track Removed from Service (GCOR 15.4)
- Inaccessible Track
- Individual Train Detection (ITD)
- Train Approach Warning (TAW)
- Train Coordination (GCOR 6.3.1)

The RWIC of the roadway work group, or the Lone Worker, determines the type of on-track safety to be used. The type of on-track safety must comply with these provisions, as well as:

- Railroad Operating Rules.
- Timetable.
- MOW Rules.
- General Orders.
- Special Instructions.

If the track is to be fouled with equipment or the track made unsafe for the passage of trains, working limits must be established. If work is in tunnels or on bridges that cannot be cleared within the time provided by the available sight distance, working limits must be established.

NOTE: Tunnel niches or bridge refuge bays shall not be used as designated places of safety.

Roadway workers may cross tracks without establishing a method of on-track safety provided the following requirements are followed:

- When crossing tracks, take the shortest & safest route after looking both ways. If more than one track is to be crossed, do not start crossing until the entire way is seen to be clear. Additionally, look in both directions before crossing each track.
- Never cross tracks closer than 50 feet from standing equipment. The only exception to this rule is when equipment is inside the confines of a shop and under blue flag protection.
- Cross in front of moving train or equipment only if it is a sufficient distance away to permit reaching the opposite side 15 seconds before arrival of train or on-track equipment.
- Are not carrying tools or materials that restrict motion, impair sight or hearing, or may otherwise prevent detecting an on-track movement and promptly moving off the track.

1.5.1 Exclusive Track Occupancy

All affected roadway workers shall be notified before working limits are released for the operation of trains. Working limits shall not be released until all affected roadway workers have either left the track or have been afforded on-track safety through Train Approach Warning (1.5.4). Exclusive Track Occupancy establishes working limits on controlled tracks. Examples include:

- Track Warrant Control (TWC)

Exclusive Track Occupancy can be established by the following four methods:

1.5.1.1 Track and Time Permit in CTC Territory (GCOR 10.3)

SNR does not currently have any CTC on any SNR owned or operated track. To establish working limits with a Track and Time Permit in CTC Territory:

1. If you receive a Track and Time Permit that is joint with either trains or M/W, you must display red flags at each end of the working limits. Working limits must be established at or between identifiable points (e.g., mile post, station signs, etc.). When track and time authority is issued "joint with", a job briefing must be conducted with employees previously granted or train listed as "joint with" before entering the limits. The job briefing must include the name of the RWIC, exact location of the working limits and moves to be made.

2. If you receive a Track and Time Permit that is not joint with either trains or M/W, you are not required to provide additional protection of roadway workers.

1.5.1.2 Track Warrant in Dark Territory or ABS-TWC (GCOR 14.0)

If you receive a Track Warrant as a "joint authority" you must establish communication with those employees previously granted a track warrant before entering the joint limits. The job briefing must include the name of the RWIC, exact location of working limits and moves to be made.

All trains authorized are notified of the men or equipment by their track warrant. Trains must not enter the limits of the track warrant held by men or equipment unless verbally authorized by the RWIC. Also, a track warrant must inform the RWIC about the trains using the track warrant. When so authorized, trains may move only at Restricted Speed. When a "joint authority" track warrant is issued to either trains, other maintenance of way equipment or employees, a job briefing must be held with all employees to ensure understanding of the rule requirements.
Track Warrants may be utilized to establish working limits behind designated trains moving through the same limits in accordance with the following provisions:

(1) The track warrant will only be considered in effect after it is confirmed by the RWIC or Lone Worker that the affected train(s) has passed the point to be occupied or fouled by:
- Visually identifying the affected trains(s) or
- Direct contact with a crew member of the affected train(s) or
- Receiving information about the affected train from the train dispatcher or control operator.

(2) When working limits have been established to protect men and equipment reverse movements cannot be made into these limits unless utilizing GCOR 6.3.1

(3) After the RWIC or Lone Worker has confirmed that the affected trains(s) have passed the point to be occupied or fouled, the RWIC shall record on the track warrant, the time of passage and engine number(s) of the affected trains(s). If the confirmation is by direct communication with the train(s), or through confirmation by the train dispatcher or control operator, the RWIC shall record the time of such confirmation and the engine number(s) of the affected trains on the authority.

(4) A separate roadway work group afforded on-track safety by the RWIC of authority limits, and that is located away from the RWIC of authority limits, shall:
- Occupy or foul the track only after receiving permission from the RWIC to occupy the working limits after the RWIC has fulfilled the provisions of paragraph (1) of this section; and
- Be accompanied by an employee qualified to the level of a RWIC who shall also have a copy of the authority and shall independently execute the required communication requirements of paragraphs (1) and (3) of this section.

(5) Any subsequent train or on-track equipment movements within working limits after the passage of the affected train(s) made only under the direction of the RWIC. Such movements shall be at restricted speed unless a higher authorized speed has been specifically authorized by the RWIC.

1.5.1.3 Form B Track Bulletin (GCOR 15.0)

Establish working limits with a Form B Track Bulletin or equivalent on main track(s) or siding(s) by utilizing fixed locations (e.g., mile post, station sign, etc.).

NOTE: Authority limits must display yellow/red and red flags. When working limits must be established within the authority limits because of joint occupancy, the working limits must be identified by fixed locations (e.g., mile post, station sign, etc.).

1.5.1.4 Track Removed from Service (GCOR 15.4)

To establish working limits by removing a track from service **(controlled track only)**:

1. Ask the control operator/train dispatcher to take the track out of service. The control operator/train dispatcher then issues a track bulletin that removes the track from service.
2. Copy and repeat the track bulletin information back to the control operator/train dispatcher.
3. Place red flags to protect the working limits, **except in Emergency Conditions**.
4. When protection is no longer required, remove red flags if applicable and release the track back to the control operator/train dispatcher.

Use this form of protection when necessary to work in the same limits with a train tied up on the main track.

NOTE: Movements of trains and RMMs within working limits established through Exclusive Track Occupancy shall be made only under the direction of the RWIC. All movements shall be at restricted speed unless a higher speed has been specifically authorized by the RWIC.

In Joint Occupancy, the RWIC holding the authority must read the authority to the receiving qualified RWIC. The receiving RWIC must copy the authority and repeat back. If correct, the holding RWIC will state "OK" with a time and their initials.

Authorities issued for following a train (After Arrivals) must not be issued to protect men or equipment within the same or overlapping limits, unless all trains are authorized to proceed in one direction only and the track authority specifies that men or equipment do not occupy limits ahead of these trains. The RWIC must know that all trains listed on the authority are by the location where the track is to be occupied or fouled. This information can be obtained by observation of the passing trains, communication with a crew member of the trains or from the train dispatcher. The RWIC must record the time of passage of the train and the engine number on the track authority. If the passage confirmation is made via communication with the train crew or train dispatcher, the time of that communication and the engine numbers must be recorded on the authority. Joint authorities issued for following a train (After Arrivals) must have all RWICs confirm the passage of the train with time and engine number.

1.5.1.6 Electronic Display of Authority

Authority Displayed on Electronic Device

Employees may receive authority via an approved electronic device such as a laptop computer, tablet, or other electronic device. Written authority is not required when using this electronic device. When received, the authority must be acknowledged using the prescribed method associated with the device and remain accessible via the electronic device used to receive this authority.

Before an electronic request for authority is made with a train in the limits, employee must verify, visually, or through direct communication with the train, that the train is beyond the location where the track will be initially fouled or working limits will be established. Employees may use the graphical territory display of an electronic device to observe if any trains are occupying the limits to be requested. However, the graphical territory display must not be used to determine if trains have passed the location where the track will be initially fouled or working limits will be established. This verification should be noted in the "Comments" box of the electronic request, using engine identifying numbers. Electronic requests that do not include this verification will not be granted.

Loss of Electronic Device Functionality

Should the electronic device become inoperable, and the granted authority text is no longer available, the train dispatcher must be contacted, and written authority obtained, or other protection established. If a written authority cannot be obtained, or another form of protection established, the RWIC must instruct all employees under their authority to stop work and occupy a place of safety. A job briefing must be conducted to determine the safe course of action.

1.5.1.7 Procedures for Establishing Working Limits on Controlled Track Utilizing a Flagmen

NOTE: Employee(s) should Immediately attempt to contact the railroad dispatcher/control operator to obtain an authority in the event of an emergency, if possible.

On controlled tracks, when establishing working limits utilizing flagmen protection, follow these procedures:

- The flagman must be trained and qualified for the duties of a flagmen.
- The roadway worker in charge must announce on the applicable radio channel the establishment of working limits via flagman protection, if possible.
- The Flagman must be equipped with a red flag to provide a stop signal.

- Flagmen should be stationed at each entrance into the working limits, at the distance shown in table below. The flagmen must prevent entry into the working limits and only allow movements into the working limits as instructed by the roadway worker in charge.
- Flagmen must remain at their designated positions until flag protection is no longer required and can only be relieved of these duties under the authority of the RWIC.

Warning Distance Chart Example

Authorized Track Speed	**Minimal Warning Distance**
20 MPH or less	½ mile
21 MPH to 40 MPH	1½ miles
41 MPH or greater	2 miles

NOTE: Trains or equipment with the potential to enter switches within the working limits can *be flagged at the entrance location if the flagman has the capability to stop all movements.*

1.5.2 Inaccessible Track

Inaccessible Track is a method of establishing working limits on non-controlled tracks by making the track physically inaccessible to trains, engines, rolling equipment and on-track equipment. Equipment movements at restricted speed in non-controlled track, such as but not limited to moving equipment from a clearing location to the work site or routine inspections, may be made without establishing working limits.

NOTE: Working limits must be established for RMM movements on non-controlled track equipped with automatic block signal systems over which trains are permitted to exceed restricted speed.

Trains and RMMS within working limits established by means of inaccessible track shall move only under the direction of the RWIC and must move prepared to stop within one half the range of vision, short of men and equipment. No operable locomotives or other items of on-track equipment, except those under the direction of the RWIC, may be located within these limits.

Non-controlled track consists of:

- Yard tracks.
- Industrial leads.
- Non-controlled sidings.
- Tracks within Yard Limits/Restricted Limits.

The RWIC or Lone Worker establishes working limits using Inaccessible Track with one of the following methods:

- A flagman with instructions and the capability to hold all trains and equipment from entering the working limits. A flagman generally does not have the capability to restrict the movement of free-rolling equipment.
- Line a switch or permanent derail to prevent access to the working limits. Tag the switch or derail and lock, spike, and/or clamp securely. A specialized lock designated by railroad operating rules must be utilized.
- Place a portable derail(s) with a red flag(s), which must be secured by a lock or a metal wedge that requires railroad tools to be applied and removed. Derails must be tagged. Red flags must be place 150 feet in advance, if possible, from the working limits to prevent movement into the limits.
- Establish discontinuity in the rail to prevent movement into the working limits.
- Working limits on controlled track that connects directly with the inaccessible track, established by the RWIC of the working limits on the inaccessible track.
- A remotely controlled switch aligned to prevent access to the working limits and secured by the control operator of such remotely controlled switch by application of a blocking device to the control of the switch, when:
    - The control operator has secured the remotely controlled switch by applying a locking or blocking device to the control of the switch, and
    - The control operator has notified the roadway worker who has established the working limits that the requested protection has been provided, and
    - The control operator is not permitted to remove the locking or blocking device from the control of the switch until receiving permission to do so from the roadway worker who established the working limits.
- A locomotive with or without cars placed to prevent access to the working limits at one or more points of entry to the working limits, providing the following conditions are met:
    - The RWIC who is responsible for establishing working limits communicates with a member of the crew assigned to the locomotive and determines that:
        - The locomotive is visible to the RWIC that is establishing the working limits and
        - The locomotive is stopped.
        - Further movements of the locomotive shall be made only as permitted by the RWIC controlling the working limits.
        - The crew of the locomotive shall not leave the locomotive unattended or go off duty unless communication occurs with the RWIC and an alternate means of on-track safety protection has been established by the RWIC, and
        - Cars coupled to the locomotive on the same end and on the same track as the roadway workers shall be connected to the train line air brake system and such system shall be charged with compressed air to initiate an emergency brake application in case of unintended uncoupling. Cars coupled

to the locomotive on the same track on the opposite end of the roadway workers shall have sufficient braking capability to control their movement.

- Trains and roadway maintenance machines within the working limits established by means of inaccessible track shall move only under the direction of the RWIC of the working limits and shall move at restricted speed.
- No operable locomotives or other items of on-track equipment, except those present or moving under the direction of the RWIC of the working limits, shall be located within the working limits established by means of inaccessible track.

- Block Register territory, designated in the timetable, which prevents trains and other on-track equipment from occupying the track when the territory is under the control of a Lone Worker or RWIC. The RWIC or Lone Worker has the absolute right to render block register territory inaccessible using any of the above-mentioned Inaccessible Track provisions.
- Track Bulletin Form B in Yard Limits (GCOR 15.2) Train or engine or other on-track equipment movements on a main track within yard limits or restricted limits are prohibited until the train or engine or on-track equipment receives notification of any working limits in effect and the train or engine, or on-track equipment are prohibited from entering working limits until permission is received by the RWIC. The working limits must be delineated with red flags, and where speeds are in excess of restricted speed with physical characteristics permitting advanced yellow reg flags.

1.5.2.1 Procedures for Establishing Working Limits on Non-controlled Tracks Utilizing a Flagman

NOTE: This provision cannot be used on tracks where trains can operate above restricted speed or in locations where free rolling equipment moves are expected or common practice (i.e., where car humping or kicking activities are in affect).

When a flagman is used to prevent movements of trains and equipment at an entry point to the working limits:

- The flagman must be trained and qualified for the duties of a flagman.
- The RWIC must announce on the applicable radio channel the establishment of working limits via flagman protection, if possible.
- The flagman must maintain a position at the point of entry to the working limits and not be assigned any other duties.
- The flagman must not leave his position until all roadway workers are clear of the track and only under authority of the RWIC.
- The flagman must be equipped with a red flag and should walk towards the approaching train or equipment waving the flag signaling stop. The flagman should not place themselves in a position to be struck by oncoming trains or equipment.

- A flagman can also establish protection by lining a switch or derail to prevent entry into the working limits. The flagman must remain at the location of the switch or derail while performing this type of flagman protection.

1.5.2.2 Railroad Employees or Contractors Working Within Locomotive Servicing and Car Shop Repair Tracks

Workers within the limits of locomotive servicing and car shop repair track areas may utilize procedures established by a railroad in accordance with Blue Signal Protection to perform duties incidental to inspecting, testing, servicing, or repairing rolling equipment when those incidental duties involve fouling a track that is protected by Blue Signal Protection (e.g., performing building repairs, changing light bulbs, etc.). Similarly, employees of a contractor to a railroad if such incidental duties are performed under the supervision of a railroad employee qualified on the railroad's rules and procedures implementing the Blue Signal Protection requirements may also work under Blue Signal protection when:

- A job briefing is conducted with the person who placed the blue flags.
- No movement of equipment will be conducted within the blue flag area until all parties are briefed, and all roadway works are clear of the track.
- Person who placed the blue flags does not remove, unless the affected persons are notified of the removal and have cleared the tracks.

NOTE: Employees or Contractors performing work requiring a Part 213.7 qualified employee(s) trained must provide protection per 1.5

1.5.3 Individual Train Detection (ITD)

Individual Train Detection is a form of On-Track Safety that can be used ***only*** by Lone Workers. A Lone Worker has the right to use On-Track Safety procedures other than ITD if the Lone Worker feels the situation warrants. ITD can be used to provide On-Track Safety only if all the following conditions are met:

- The Lone Worker is trained, qualified, and designated to use ITD.
- Only routine inspection or minor repair is being performed. The Lone Worker may not occupy any position or engage in any activity that would interfere with the ability to detect the approach of train or equipment in either direction.
- The Lone Worker is not inside the limits of a:
  - Manual interlocking,
  - Control point or
  - Remotely controlled hump yard facility.

- The Lone Worker can visually detect the approach of trains or equipment moving at maximum authorized speed and can move to a place of safety at least 15 seconds before its arrival.

NOTE: The place of safety must not be on a track unless working limits have been established on that track.

- No power-operated tools or machines are in use within hearing range. The Lone Worker's ability to hear and see approaching trains and equipment is not impaired by:
  - Background noise,
  - Lights,
  - Inclement weather,
  - Passing trains or
  - Other physical conditions.
- The Lone Worker has completed a written Statement of On-Track Safety. When using ITD, the Lone Worker must produce the completed Statement of On-Track Safety upon request.
- Individual train detection shall not be used to provide on-track safety for a Lone Worker using a roadway maintenance machine, equipment, or material that cannot be readily removed by hand.

1.5.4 Train Approach Warning (TAW)

Members of a roadway work group may foul a track without establishing working limits by using TAW to perform routine inspections or other minor corrections (e.g., work not interfering with the safe passage of trains at the maximum authorized speed) or to provide warning for adjacent tracks equipped with adequate sight distance to permit roadway workers receiving a warning to be in their predetermined place of safety 15 seconds before the arrival of train or on-track equipment. The RWIC will establish on-track safety by designating one or more Lookouts to provide warning of all approaching movements in both directions.

TAW may be used to provide on-track safety only when all the following conditions are met:

- Each Lookout must be a qualified employee and equipped to provide TAW.
- A Lookout can give a TAW in time allowing each roadway worker to move to a previously arranged place of safety at least 15 seconds before the arrival of a train, engine or other equipment moving at the maximum authorized speed.
- Each roadway worker is positioned to receive a TAW.
- RMMs, equipment or material can be readily removed by hand

- The predetermined place of safety for roadway workers utilizing TAW cannot be another track, unless working limits are established on that track and permission trains or engines to occupy the established working limits is withheld.

Lookouts must devote their entire attention to detecting approaching trains and engines and warning the roadway workers. Lookouts must:

- Not be assigned other duties while functioning as a lookout.
- Remain at their duties until the RWIC either determines that protection is no longer necessary or sends another Lookout to relieve them.

NOTE: **The RWIC may provide TAW by acting as the Lookout if the RWIC is not performing other duties.**

The Lookout's method of communicating a TAW must be distinctive and clearly understood, regardless of noise, work distraction and the direction that the warned worker is looking. The method that a Lookout will use to warn roadway workers will consist of:

- Blowing a whistle and/or sounding an air horn. (See below note)
  and
- Visual aid (e.g., paddle, flag, etc.).

NOTE: Touching a roadway worker can be utilized to replace the above aids when only two roadway workers are present. The two roadway workers must always remain within arm's length of each other when fouling the track.

The following chart identifies the minimum distance required for the maximum authorized speed to provide employees the minimum 15 seconds necessary to clear the track prior to the arrival of a train or engine. When the maximum authorized speed is not shown on the form, use the next higher speed. Shaded column shown for reference only. Use the 10 second, 15 second or 20 second columns to determine required sight distance. Remember that selected time must include receiving the warning, removing tools and material from the track, and moving to the predetermined place of safety.

Required Sight Distance (feet) for Various Clearing Times				
Authorized Track Speed (MPH)	Distance Train Travels In 15 Seconds	10 Seconds Clearing Time	15 Seconds Clearing Time	20 Seconds Clearing Time
5	110	176	220	256
10	220	367	440	513
15	330	547	660	768
20	440	733	880	1027
25	550	917	1100	1283
30	660	1100	1320	1540
35	770	1283	1540	1797
40	880	1467	1760	2053

1.5.5 Train Coordination (GCOR 6.3.1)

Employees may use a train's authority to establish working limits for track maintenance on **controlled track**. To establish the working limits, the train must have exclusive authority to move, be in view and stopped. The RWIC of working limits will communicate with a member of the train crew and determine that:

- Movements will be made only as permitted by the RWIC until the working limits have been released to the train crew by the RWIC, and
- The train will not release its authority within the limits until those working limits have been released by the RWIC.

1.5.6 Work Train Operations

To provide on-track safety for roadway workers and RMMS working with a work train, the RWIC of working limits must authorize all movements of the work train and RMMS within working limits. No worker may foul a track within working limits without being authorized by the RWIC.

1.5.7 Adjacent Track Protection on Non-Controlled Track

Inaccessible Track per rule 1.5.2 can be used to establish working limits when it is necessary to foul adjacent non-controlled tracks.

If working limits are not established on an adjacent non-controlled track, TAW per rule 1.5.4 may be used to protect roadway workers fouling that track if adequate sight distance based on maximum authorized speed is present.

1.5.8 Adjacent Track Protection on Controlled Track

NOTE: In the interest of simplicity, these Adjacent Track rules are more restrictive than the regulation found at 49 CFR 214.336.

Protection for roadway work groups working with roadway maintenance machines will be established for adjacent controlled tracks as outlined in this rule when any roadway worker who is a member of a roadway work group is on the ground and engaged in a common task with the on track, self-propelled equipment or coupled equipment on an occupied track.

NOTE: The RWIC may establish protection on any adjacent track(s), even when not specifically required by this rule, at any time as deemed necessary by the RWIC to ensure the safety of the roadway work group

<u>Excepted Groups</u>
This rule does not apply:

- When there is not at least one adjacent controlled track adjacent to the occupied track, or to
- Lone Workers,
- Work groups without RMM present,
- Hi-Rail inspection vehicles not coupled to one or more railroad cars when the work is being performed and consist of inspection or minor corrections or
- Automated inspection vehicles when their duties will not require fouling the adjacent track.
- Maintenance or repairs performed alongside or within the perimeter of a RMM or coupled equipment on the occupied track provided:

    - One or more roadway workers performing maintenance or repairs alongside a roadway maintenance machine or coupled equipment, provided that such machine or equipment would effectively prevent the worker from fouling the adjacent controlled track on the other side of such equipment, and that such maintenance or repairs are performed while positioned on a side of the occupied track where no adjacent track is present or if an adjacent track is present, working limits are established on that adjacent track and the RWIC will withhold authority or permission for trains or on-track equipment movement through the limits, or

    - One or more roadway workers on or under a roadway maintenance machine or coupled equipment performing maintenance or repairs within the perimeter of the machine or equipment, provided that no part of their person breaks the plane of the rail of the occupied track except when toward one of the sides of the occupied track as described above.

NOTE: A boom or other equipment extending beyond the body of a RMM or coupled equipment toward an adjacent controlled track is not considered to be within the perimeter of the machine or coupled equipment.

Excepted Roadway Work Group Operating Within the Limits of Another Roadway Work Group

When an excepted roadway work group is authorized or permitted to operate on the same occupied track and within the working limits of a separate roadway work group performing work that is subject to this rule, or the non-excepted group is authorized or permitted to operate on the same occupied track and within the same working limits of an excepted group, the groups must conduct a job briefing to determine if adjacent controlled track protection is necessary for the excepted group.

For the excepted groups, the RWIC must determine if the roadway work group is in such proximity where the ability to hear or see approaching trains and other on track equipment is impaired by:

- Background noise,
- Lights,
- Sight obstructions or
- Any other physical conditions caused by the equipment.

If these conditions exist, this exception does not apply, and adjacent controlled track protection must be established for both groups.

1.5.8.1 Occupying a Track with an Adjacent Controlled Track(s).

Exclusive Track Occupancy per rule 1.5.1 or TAW per rule 1.5.4 must be utilized to provide protection for roadway workers on an adjacent controlled track(s) spaced at 19ft or less center to center).

NOTE: TAW must not be utilized to provide protection on an adjacent controlled track if any component of the on-track equipment such as a boom, arm or crane will foul the adjacent protected track. If any component of the equipment will foul the adjacent protected track, the RWIC must establish Exclusive Track Occupancy per rule 1.5.1 for protection and not permit movements on the adjacent track. RWIC must not permit movements on the adjacent track until all men and equipment are clear.

1.5.8.2 Passing of Trains on Adjacent Controlled Track(s)

When the RWIC permits the passing of trains or other on-track equipment on the controlled adjacent track(s), roadway workers must stop work and move to a pre-determined place of safety upon receiving a watchman/lookout warning, or notification

that the RWIC intends to permit one or more trains or on track equipment movements within the working limits of the adjacent controlled track. The pre-determined place of safety must not be fouling any track unless working limits have been established for that track and no movements on that track within those limits are permitted by the RWIC. Machine operators must stop the operation of their equipment, and when practicable, operators must remove themselves to a pre-determined place of safety. Prior to authorizing movements through working limits on an adjacent track, the RWIC must notify roadways workers and receive verification that personnel and equipment are clear of the adjacent track(s).

Work may be resumed only after the trailing end of all Trains or other On Track Equipment moving on the adjacent controlled track(s) has passed and remains ahead of the roadway work group and the RWIC gives notification to the roadway work group that protection is again established on the adjacent controlled track.

If a train or other on track equipment stops before it's trailing end has passed all of the affected roadway workers in the roadway work group on the adjacent controlled track, work may resume only if on track safety using Train Approach warning has been established on the adjacent controlled track, or after the RWIC has communicated with a member of the train crew or the on track equipment operator, and established that further movements of the train or on track equipment shall be made only as permitted by the RWIC. The RWIC must inform the roadway work group on-track safety has been established through a job briefing. Then, work may resume.

1.6 Audible Warning from Trains

Warning of a train approaching men or equipment on or near the track will be made in accordance with GCOR 5.8.2. GCOR 5.8.2 states:

1) Initial horn warning will include a long horn followed by a short horn when approaching men or equipment on or near the track, regardless of any whistle prohibitions.
2) After the initial warning, sound two short horns intermittently until the head end of train has passed the men or equipment.
3) When approaching an area were sounding the horn adversely affects roadway workers (e.g., in tunnels and terminals), the bell will be rung on the locomotive.

1.7 Operating and Working Near Roadway Maintenance Machines (RRM)

1.7.1 RMM Operator Training and Qualifications

1.7.1.1 General Training Requirements

No employee may operate a RRM without first:

- Having been trained in accordance with the Rules,
- Having been informed of the safety procedures applicable to persons working near the machine
  and
- Acknowledging full understanding of those safety procedures.

1.7.1.2 RMM Specific Training Requirements

The operator's manual, which includes instructions for safe operation, shall be provided and maintained with each machine large enough to carry the document. An operator must have a clear understanding of the information contained in the associated manual prior to operating a RRM.

RMM(s) adapted for a specific railroad use will have safety instructions developed to replace the manufacturer's safety instructions. These will be provided in a revised manual addressing all aspects of the safe operation of the RMM and will be as comprehensive as the original safety instructions.

1.7.1.3 Qualifications

An employee will not be considered qualified to operate on-track equipment without having been trained to be competent in the operation of that RMM. This training may be accomplished on-the-job through peer instruction or through a combination of classroom training and peer training.

Competency must be established prior to operating an RRM. New or relief operators, who have not within the past year operated the RMM to which they will be assigned, must be deemed competent by the proper authority. When approved to begin operation, such operators will be observed by the designated manager for a period extensive enough to determine the operator's competency level.

1.7.1.4 Training and Qualification of Operators of Roadway Maintenance Machines Equipped with a Crane

In addition to rules 1.7.1 through 1.7.3, each operator of a Roadway Maintenance Machine Equipped with a Crane must receive initial and periodic qualification that includes:

- A practical test to determine that the operator has the skills to operate each machine they are authorized to operate, and
- A written test to determine that the operator has the knowledge to safely operate each machine they are authorized to operate. This must include either:
  - Knowledge and compliance with manufacturer's safety instructions, or
  - Knowledge and compliance with safety instructions developed to replace the manufacturer's instructions when the machine has been adapted for a specific railroad use.

1.7.2 Working with RMMs

When working with RMMs spacing guidelines must be followed to prevent contact between machines and prevent machines from contacting roadway workers. When work or travel conditions dictate the machine spacing must be less than the guidelines require the operators and the RWIC must have a thorough understanding of the specific task, the conditions under which the task is to be done and how the task is to proceed. In addition, the operator of a RMM approaching workers who are foul of the track must communicate with the workers before getting closer than 15 feet to them.

Before a reverse move of more than 15 feet is made, the operator must ascertain that a backup alarm is activated and/or the appropriate horn or signal is provided. In addition, the operator must observe that the track is clear of men and RMMS before the reverse movement is made.

Components of RMM(s) must be kept clear of trains passing on adjacent tracks. When RMM(s) will be less than four feet from the rail of an adjacent track, protection on the adjacent track must be provide per 1.5.1 – Exclusive Track Occupancy or 1.5.2 – Inaccessible track.

1.7.2.1 Work Zones Around RMMs

When roadway workers' tasks require occupying a RMM's work zone they must not enter a machine's work zone without first communicating with the operator to establish safe work procedures. Unless a different understanding is established through a job briefing, this work zone extends from a point 15 feet around the entire machine, which includes extendable attachments and material handled.

If a roadway worker needs to enter an operator's work zone, the following procedures must be accomplished. The operator:
1. And the roadway worker(s) must establish eye contact,
2. Must receive verbal communication from the roadway worker(s) stating that the roadway worker(s) wish to enter the Work Zone,
3. Must notify the roadway worker(s) when it is safe to enter the Work Zone and roadway worker(s) must not enter until it is safe to do so,
4. Must stop all movement of the equipment and place the RMM in neutral, and
5. Must remove and raise hands from controls of the RMM.

When work must occur within the RMM operators work zone follow steps 1-3 with the addition of:

- The operator and roadway worker verbal communication must include the expected movement(s) and
- If the operator loses sight of the roadway worker, RMM operation and movement must **immediately** stop.

1.7.2.2 Safe Working Distance Between RMMs

Unless a different understanding is established through a job briefing, the minimum distance between machines while working is 50 feet.

1.7.2.3 Safe Traveling Distance Between RMMs

On-track equipment must maintain a minimum distance of 300 feet between each other, except when traveling through a crossing, in addition to the 300 feet, on-track equipment must operate at a speed which will allow stopping within half the range of vision.

NOTE: Adverse weather and/or rail conditions may require greater separation distances.

1.7.2.4 Stopping On-Track Equipment

When necessary to slow or stop on-track equipment during travel the operator must signal following equipment operators either by radio or hand signals. If a radio is used, the machine operator transmitting must be assured that the following equipment operators have received and understood the message transmitted. If hand signals are used, the signal must be continuous until it is verified that the following equipment operators have observed and understood the movement is to be slowed or stopped.

If machines are to be "bunched" when stopped, all employees must remain clear of the track until the entire movement has stopped unless otherwise instructed by the RWIC. After stopping, the lead machine operator in the movement will dismount and assume a position that is visible to the following operator as well as to anyone who could step into the path of the next approaching machine. The dismounted operator will spot the following RMM using hand signals. This procedure will be used by each successive operator in the movement to spot the following RMM.

Note: All equipment must be properly secured when left unattended.

1.7.2.5 Tying Up Equipment

Follow these procedures to ensure safety:

1. Secure all brakes, booms, locks, and hooks.
2. Dismount the machine on the field side of the track, away from live traffic.

NOTE: If the track is between live tracks, dismount on the side designated in the job briefing.

3. Stand beside machine and direct the next roadway machine to a stop.
4. Do not go between machines until all machines have come to a stop or the RWIC has given permission.

1.7.2.6 On-track RMMs Engaged in Weed Spraying or Snow Removal on Non-controlled Track

On-track RMMs engaged in weed spraying and snow removal on non-controlled track without inaccessible track protection, may operate if prepared to stop in half the range of vision not exceeding 25 mph under the following conditions:

- The RWIC must conduct a job briefing with all groups and crafts that may conduct movements in the work area including but not limited to train dispatchers, yardmasters, train crews, other roadway workers.
- All on-track movements shall operate at Restricted Speed with RRMs and hi-rails further restricted to 25 mph.
- A means of communication between the on-track equipment and other on-track movements must be provided, e.g., radio.

- Kicking of cars and operation within a remote-control hump yard is prohibited in the area, unless agreed upon by the RWIC.
- Roadway workers engaged in such snow removal or weed spraying operations shall retain the absolute right to use the provisions of inaccessible track.
- Roadway workers assigned to work with this equipment may line switches or derails (operated via a switch stand) for the RMMS's movement but shall not engage in any roadway work activity unless protected by another form of on- track safety **(operating derails without a stand i.e., "flop" type derails, requires a method of on-track safety)**.
- Each RMM engaged in snow removal or weed spraying shall be equipped with and utilize:
  - An operative 360-degree intermittent warning light or beacon
  - Work lights, if the RMM is operated during the period between one-half hour after sunset and one-half hour before sunrise or in dark areas such as tunnels, unless equivalent lighting is otherwise provided.

  - An illumination device, such as a headlight, capable of illuminating obstructions on the track ahead in the direction of travel for 300 feet under normal weather conditions.
  - A brake light activated by the application of the machine braking system and designed to be visible for 300 feet under normal weather conditions.
  - A rear viewing device, such as a rearview mirror.
  - If any of these devices are not functioning on the RMM, inaccessible track must be established (seven-day grace period does not apply).

1.8 Right to Challenge On-Track Safety

The railroad and each roadway worker share joint responsibility for ensuring on-track safety is provided.

1.8.1 Responsibilities of the Railroad

The Railroad must:

- Provide proper training of every roadway worker as outlined in 1.3.
- Guarantee each employee the absolute right to challenge, in good faith, whether the on-track safety procedures to be applied at the job site comply with the SNR rules. Each employee has the right to remain clear of the track until the challenge is resolved.
- Follow the procedures outlined in 1.8.3 to resolve challenges promptly and equitably.

1.8.2 Responsibilities of the Roadway Worker

Each roadway worker has the following responsibilities:

- Follow the Railroad's on-track safety procedures.
- Avoid fouling a track except when necessary to perform your duties.
- Before fouling a track, determine that on-track safety is being provided.

NOTE: A roadway worker or RMM is fouling a track when within a minimum of 4 feet of the nearest rail. The foul area must include the possible extensions of any part of the machine while working.

- Refuse any directive to violate an on-track safety or RMM/hi-rail rule and promptly notify a supervisor when the safety provisions to be applied at the job site do not comply with the railroad rules.

1.8.3 Good Faith Challenges and Resolution of Those Challenges

A roadway worker may make a Good Faith Challenge to on-track safety procedures and conditions that do not comply with FRA regulations or that prevent the safe operation of RMM and hi-rail vehicles. Follow these steps when resolving a challenge:

- The roadway worker informs the RWIC that he or she does not believe the procedure and/or condition complies with the railroad's rules.

Note: Employees may not be subject to any retribution or punishment for making a good faith challenge. The RWIC may assign the task in question to another roadway worker, but they must be informed the task has been challenged. The challenging employee may be assigned a different task until resolution.

- The RWIC will review procedure and/or condition with the employee to verify that the procedure and /or condition complies with the railroad's rules.
- If the employee is still not satisfied that the procedure or condition complies with the railroad's rules, the RWIC will contact the Manager and complete the "Good Faith Challenge Form."
- Upon the review:
    - If the Manager determines that the procedure and/or condition is not in compliance with the railroad rules, the RWIC will correct procedure and/or condition to ensure compliance.
    - If the Manager determines that procedure and/or condition is in compliance with the railroad rules, the challenging employee must perform the assigned task.

1.9 On-Track Safety Program Documentation

Follow these requirements:

- If you are a roadway worker, have access to a copy of the On-Track Safety manual.
- If you are an RWIC, keep this manual available for use on the job

2.0 BRIDGE WORKER SAFETY

2.1 General Requirements

2.1.1 General Fall Protection Requirements

When working on a railroad bridge at a height of 12 feet or more above the ground or water surface, use personal fall arrest equipment. If fall protection is required to perform bridge repairs and proper equipment is not available for a rescue plan, the supervisor should be contacted prior to making repairs.

NOTE: If rescue equipment is unavailable, the work cannot be attempted until equipment is available and all involved workers are properly trained.

Where there is no deck openings through which an employee can fall, the use of personal fall arrest equipment is not required when:

- Walking within the gage of the rails.
- Performing minor inspections or repairs exclusively between the outside rails.
- Working on a bridge that has walkways or railings that meet the requirements of the American Railway Engineering & Maintenance of Way Association Manual for Railway Engineering.
- Conducting bridge inspections when:
    - A written program is in place that requires training in, adherence to, and use of safe procedures associated with climbing techniques and procedures to be used.
    - The inspector has been trained and qualified according to that program.
    - The inspector has been previously and voluntarily designated to perform inspections under the provisions of that program and has accepted the designation
    - The inspector is familiar with the appropriate climbing techniques associated with bridge structures.
    - The inspector is engaged solely in moving on or about the bridge or observing, measuring, and recording the dimensions and condition of the bridge.
    - The inspector is provided all equipment necessary to meet the needs of safety, including any specialized alternative systems required.
    - The installation or use of fall arrest equipment poses a greater exposure to risk than the work to be performed.

NOTE: Minor repairs include, but are not limited to, routine welding, spiking, anchoring, spot surfacing and joint bolt replacement. Replacing bridge ties or rail is NOT considered minor repairs.

2.1.2 Fall Protection System Standards

Fall protections systems utilized must be compliant with *49CFR Part 214.105.*

NOTE: Body belts cannot be utilized.

2.2 Safety Net Systems

Safety net systems must be compliant with *49CFR Part 214.105*.

2.3 Working Over or Adjacent to Water

When working over or adjacent to water four feet or greater in depth or where the potential of drowning exists utilize a:

- Personal fall protection system. (Fall protection is required if 12 or more feet above the water.) or
- Life vest,
- Ring buoy with a minimum of 90 feet of line and no more than 200 feet between buoys and
- Inflatable boat manned if necessary.

2.4 Inspecting Equipment and System

- Prior to use, inspect fall protection equipment and systems according to the manufacturer's instructions and as reviewed in training sessions.
- A fall protection system or component involved in a fall shall be immediately and permanently removed from service until fully inspected and determined by a competent person to be undamaged and suitable for reuse.

2.5 Cleaning and Storing Equipment

- Clean fall protection equipment components according to the manufacturer's instructions provided with the equipment, and as reviewed in training sessions.
- Store fall protection equipment components where they cannot be accessed by unauthorized personnel. Protect from adverse weather conditions, chemical exposure and open flames and sparks.

2.6 Scaffolding

Scaffolding systems utilized must be compliant with 49CFR Part 214.109.

2.7 Bridge Worker Rescue Plan

Prior to utilizing fall protection equipment, the trolly anchor system along with the rescue arm must on site within 10ft of any fall hazard. The trolley anchor may be assembled away from the rails and then lifted into place using the supplied lifting eye and appropriate lifting equipment or 2 men can simply carry into place using the handles. The rated capacity of the rescue arm is 310lbs including all tools and equipment. There must be a job briefing performed before equipment is used and within the briefing there must be a plan to provide for the removal of a suspended worker to a place of safety within 20 minutes of the fall.

NOTE: Dialing 911 is not an adequate rescue plan.

2.8 Personal Protective Equipment (PPE) for Bridge Workers

- Hard hats, conforming to the 29 CFR 1910.135(b) standards, must be utilized by bridge workers when on or under a bridge.
- Steel-toed boots, conforming to the 29 CFR 1910.136(b) standards, must be utilized by bridge workers when on or under a bridge.
- Safety glasses, conforming to 29 CFR 1910.133(b) standards, must be utilized by bridge workers when on or under a bridge.
- Face shield should be utilized when safety glasses will not provide adequate protection.
- All PPE will be kept clean and in good repair with no structural or optical damage.
- Hard hats, face shields, non-prescription safety glasses and googles (cover-all type for workers wearing prescription glasses) shall be provided to the bridge workers.

3.0 ON-TRACK MAINTENANCE MACHINES AND HI-RAIL VEHICLES

3.1 General Prestart Checks

Prior to starting work equipment, check the following levels:

- Engine oil
- Radiator coolant
- Transmission fluid
- Hydraulic fluid
- Hydraulic brake fluid
- Fuel
- Other parts that use any type of fluid

3.2 RMM Inspection and Condition

- Operators must maintain work RMM in a safe condition.
- Operators should have the necessary tools to perform daily maintenance and basic repairs.
- Operators must inspect RMM before and periodically during use
- Non-compliant conditions must be repaired immediately. If repairs cannot be made, the non-compliant FRA condition must be red tagged, dated and reported to the proper supervisor. To continue operation of the RMM, the part(s) must be ordered by the following business day of the report of the defect. Once the part is received, the repair must be made within the time frames listed below:
  - Headlights/work light - Machine can be operated only during daylight hours for 7 days.
  - Horn - Portable horn can be utilized for 7 days
  - Fire extinguisher - Portable fire extinguisher can be utilized for 7 days
  - Back-up alarm/strobe light - 7 days
  - Structurally defective or missing Operator's seat: Must be repaired within 24 hours
  - Braking system: Move machine to clearance point and place out of service if unable to couple to other machine to provide braking
- Regardless of part availability or delivery, non-compliant equipment cannot operate for a period exceeding 30 days from the report of the defect.
- Records pertaining to the ordering of parts and repairs will be retained for one year and maintained on the equipment or at the company headquarters.

3.2.2 Towing

- Must be equipped with towing bar or coupler device designed for towing purposes
- Must not exceed braking system capabilities

3.3 On-Track RMM Safety Requirements (General)

- Secure position (e.g., handhold, handrails, or seat) for each operator and transported roadway worker
- Rider position must be clearly identified
- Functional horn with triggering device easily identifiable and within reach of operator
- Headlights capable of lighting 300ft ahead of equipment
- Overhead covers at the operator(s) position if previously equipped
- Floors, decks stairs, and ladders must provide secure access and free of obstructions, grease and oil
- Flagging kit, if operated alone or lead/trailing machine in gang
- Operator's manual

3.4 On-Track RMM Safety Requirements (Built on or after January 1, 1991)

In addition to the general requirements the following also apply:

- Back-up alarm or rearward viewing mirror if feasible
- Operative heater when operated below ambient temperature of 50 degrees as equipped by manufacturer or railroad.
- Light weight of machine clearly displayed, if more than 7,500 pounds
- Reflective material/device or operable brake lights
- Safety glass
- Turntable lock or warning light

3.5 New On-Track RMM Safety Requirements (Built after September 27, 2004)

In addition to the general requirements the following also apply:

- Tampers, regulators, mechanical brooms, rotary scarifiers, undercutters or mechanical equivalent must have operational heater, AC and pressurized ventilation system.
- Operator's seat, unless designed to travel by standing, then equipped with handholds or handrails to a safe and secure position
- Locking turntable (e.g., hooks latches, pins, etc.)
- Windshield with safety glass if designed with windshield. Power windshield wipers or suitable equivalent if wipers or incompatible with windshield
- Capable braking system
- First-aid kit
- Fire extinguisher (5BC rating or higher)
- Display as-built light weight in a conspicuous location
- Headlights capable of lighting 300ft ahead of equipment
- Work lights if operated at night, unless equivalent light is provided

- Operational 360-degree strobe light, unless designed without roof and light weight is less than 17,500
- Brake light activated by application of braking system and visible at 300ft
- Functional horn with triggering device clearly identifiable
- Back-up alarm with review mirror
- Speed indicator, if light weight exceed 32,500 pounds and is operated at speeds in excess of 20 mph

3.6 Hi-rail Safety Inspection Checklist

Tram, wheel wear and gage must be inspected annually with no more than 14 months between conducted inspection and the initial inspection. Inspection must be documented and retained by Supervisor unit next required annual inspection. Prior to use, the operator must ensure the following:

- The annual inspection is current.
- Inspect for non-compliant FRA condition. Non-compliant conditions must be repaired immediately. If repairs cannot be made, the non-compliant FRA condition must be red tagged, dated and reported to the proper supervisor. Non-compliant conditions must be repaired as soon as practical within 7 days. If parts are unavailable, parts must be ordered by the following business day of the report of the defect. Once the part is received, the repair must be made within 7 days of receipt. Hi-rail cannot be operated past 30 days of notification of non-compliant condition.
- Non-compliant conditions are as follows:
  - Functional strobe light
  - Back-up Alarm
  - Flagging kit

STATEMENT OF ON-TRACK SAFETY

A Lone Worker using Individual Train Detection must complete this form, or approved equivalent, **prior** to fouling a track. To complete this form:

1. Provide the following information:

Date: _____

Name: _____

Subdivision/Branch: _____

Work Location: _____

Time Limits: _____

2. In the table below, place an **X** in the box adjacent to the maximum authorized speed of trains within the working limits specified above. The minimum sight distance associated with that speed provides 15 seconds for employee to clear the track.

Required Sight Distance (feet) for Various Clearing Times				
Authorized Track Speed (MPH)	**Distance Train Travels In 15 Seconds**	**10 Seconds Clearing Time**	**15 Seconds Clearing Time**	**20 Seconds Clearing Time**
5	**110**	**176**	**220**	**256**
10	**220**	**367**	**440**	**513**
15	**330**	**547**	**660**	**768**
20	**440**	**733**	**880**	**1027**
25	**550**	**917**	**1100**	**1283**
30	**660**	**1100**	**1320**	**1540**
35	**770**	**1283**	**1540**	**1797**
40	**880**	**1467**	**1760**	**2053**

Note: When the maximum authorized speed is not shown on the form, use the next higher speed. Shaded column shown for reference only. Use the 10 second, 15 second or 20 second columns to determine required sight distance. Remember that selected time must include receiving the warning, removing tools and material from the track, and moving to the predetermined place of safety.

This form must be in the employee's possession while work is being performed.

ON-TRACK SAFETY GOOD FAITH CHALLENGE

1. (To be completed by employee making a Good Faith Challenge)

Date: _____
Roadway Work Group: _____ RWIC: _____
Location: _____
Employee Making Challenge: _____
Type of On-Track Protection Established: _____

_____
Reason for Challenge: _____
_____

_____

2. (To be completed by RWIC)

Determination of RWIC: _____
_____

_____

3. (To be completed by employee making Good Faith Challenge)

Check one of the following:
_____ Challenge has been resolved by determination of RWIC. Challenge has
_____ **not** been resolved by determination of RWIC.

4. Signatures of RWIC and employee making Good Faith Challenge:

_____ _____
RWIC Employee Making Challenge

5. Determination by Supervisor: _____
_____

_____ _____
Supervisor Signature Date

Instructions: Upon completion, this form shall be forwarded to the Manager.

DEFINITIONS

Adjacent Controlled Track

A controlled track whose track center is spaced 19 feet or less from the track center of the occupied track.

Adjacent Tracks

Two or more tracks with track centers spaced less than 25 feet apart

Anchorage

A secure point of attachment for lifelines, lanyards, or shock-absorbing devices that is independent of the means of supporting or suspending an employee.

Body Harness

A device with straps that can be attached to a lanyard, lifeline, or shock-absorbing device. The body harness is secured about an employee in a manner that distributes the fall arrest forces over (at a minimum) the thighs, shoulders, pelvis, waist, and chest.

Controlled Tracks

Tracks upon which the rules require that all movements of trains must be authorized by a train dispatcher or a control operator/train dispatcher.

Control Operator/Train Dispatcher

A railroad RWIC of a remotely controlled switch or derail, interlocking, control point or segment of controlled track.

Control Point

A location where signals and/or other functions of a traffic control system are controlled from the control machine.

Effective Securing Device

When used in relation to a manually operated switch or derail, one that is:

- Vandal resistant
- Tamper resistant
- Designed to be applied, secured, uniquely tagged and removed only by the class, craft or group of employees for whom protection is being provided.

In the absence of a lock, it is acceptable to use a spike driven firmly into a switch tie or a switch point clamp to prevent the use of a manually operated switch. It is also acceptable to use portable derails secured with specifically designed metal wedges.

Securing devices without a specially keyed lock shall be designed in such a manner that they require railroad track tools for installation and removal and the operating rules of the railroad must prohibit removal by employees other than the class, craft, or group of employees for whom the protection is being provided. Regardless of the type of securing device, the throwing handle or hasp of the switch or derail shall be uniquely tagged. If there is no throwing handle, the securing device shall be tagged.

Employee

An individual who is engaged or compensated by a railroad or by a contractor to perform any of the duties defined in this part.

Employer

A railroad or a contractor to a railroad, that directly engages or compensates individuals to perform any of the duties defined in this part.

Exclusive Track Occupancy

A method of establishing working limits on controlled track.

Fall Restraint System

A system that consists of anchorages and other personal fall arrest equipment. The equipment is selected, arranged, and used in a way that keeps an employee from reaching a location from where a fall can occur.

Flagman

An employee designated to direct or restrict the movement of trains past a point on a track to provide On-Track Safety for roadway workers. The Flagman is engaged solely in performing that function.

Foul Time

Method of establishing working limits on controlled track in which a roadway worker is notified by the train dispatcher or the control operator/train dispatcher that no trains will operate within a specific segment of controlled track until the roadway worker reports clear of the track.

Fouling

Placement of an individual or a piece of equipment in such proximity to a track that the individual or equipment could be struck by a moving train or on-track equipment, or in any case is within **4 feet** of the field side of the rail.

Free Fall

The act of falling before a personal fall arrest system begins to apply force to arrest a fall.

Hi-rail Vehicle

A roadway maintenance machine that is manufactured to meet Federal Vehicle Motor Safety Standards and is equipped with retractable flanged wheels so that the vehicle may travel over the highway or on railroad tracks.

Inaccessible Track

Method of establishing working limits on non-controlled track by physically preventing entry and movement of trains and equipment.

Individual Train Detection (ITD)

Procedure by which **a Lone Worker** acquires On-Track Safety by seeing approaching trains and leaving the track before they arrive.

Interlocking, Manual

An arrangement of signals and signal appliances operated from an interlocking machine and so interconnected by means of mechanical and/or electric locking that their movements must succeed each other in proper sequence, train movements over all routes being governed by signal indication.

Inter-track Barrier

A continuous barrier of a permanent or semi-permanent nature that spans the entire work area, that is at least four feet in height, and that is of sufficient strength to prevent a roadway worker from fouling the adjacent track.

Lanyard

A flexible line of rope, wire rope, or strap that is used to secure a body harness to a shock-absorbing device, lifeline, or anchorage.

Lifeline

A flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline) or to an anchorage at both ends to stretch horizontally (horizontal lifeline). A lifeline provides a means for connecting other components of a personal fall arrest system to the anchorage.

Lone Worker

An individual roadway worker who is not receiving On-track Safety by another roadway worker, who is not a member of a roadway work group and who is not engaged in a common task with another roadway worker.

Lookout/Watchman

An employee designated to provide warning to roadway workers of approaching trains or on-track equipment.

Maximum Authorized Speed

The highest speed permitted for the movement of trains permanently established by timetable/special instructions, general order, or track bulletin.

Minor Correction

Minor correction means one or more repairs of a minor nature, including but not limited to, welding, spiking, anchoring, hand tamping, and joint bolt replacement that are accomplished with hand tools or handheld, hand supported or hand-guided power tools. The term does not include machine spiking, machine tamping, or any similarly distracting repair.

Non-Controlled Track

Track upon which trains are permitted by railroad rule or special instruction to move without receiving authorization from a train dispatcher or a control operator/train dispatcher.

Occupied Track

Occupied track means a track on which on-track self-propelled equipment or coupled equipment is authorized or permitted to be located while engaged in a common task with a roadway work group with at least one of the roadway workers on the ground.

On-track Safety

A state of freedom from the danger of being struck by a moving railroad train or other railroad equipment, provided by operating and safety rules that govern track occupancy by personnel, trains and on-track equipment.

On-Track Safety Manual

The entire set of on-track safety rules and instructions maintained together in one manual designed to prevent roadway workers from being struck by trains or other on-track equipment. These instructions include operating rules and other procedures concerning on-track safety protection and on-track safety measures.

Personal Fall Arrest System

A system used to arrest the fall of an employee from a working level. It consists of an anchorage, connections, body harness, lanyard, shock-absorbing device, lifeline, or a combination of these.

Qualified Employee

An employee who has successfully completed all required training, demonstrated proficiency in and been authorized to perform duties of a particular position or function.

Railroad Bridge

A structure that supports one or more railroad tracks above land or water and has a **span length** of 12 feet or more, as measured along the track centerline. The term **railroad bridge** applies to the entire structure between the faces of the backwalls of abutments or equivalent components, regardless of the number of spans.

Restricted Speed

When required to move at restricted speed, movement must be made at a speed that allows stopping within half the range of vision short of train, engine, railroad car, men or equipment fouling the track, stop signal or derail or switch lined improperly.
When a train or engine is required to move at restricted speed, the crew must keep a lookout for broken rail and not exceed 20 MPH.
Comply with these requirements until the leading wheels reach a point where movement at restricted speed is no longer required.

Roadway Maintenance Machine

A maintenance machine used on or near the track for maintenance, repair, construction or inspection of track, bridges, roadway, signal and communications systems. Roadway Maintenance Machines may be on-track, off-track or both. The maintenance machines include hi- rails, motor cars, Roadway Maintenance Machines, work equipment and other forms of track cars.

Roadway Maintenance Machines Equipped with a Crane

Any roadway maintenance machine equipped with a crane or boom that can hoist, lower, and horizontally move a suspended load.

Roadway Worker in Charge (RWIC)

A roadway worker who is qualified under § 214.353 to establish on-track safety for roadway work groups, and lone workers qualified under § 214.347 to establish on-track safety for themselves.

Roadway Work Group

Two or more roadway workers organized to work together on a common task.

Roadway Worker

Any employee of a railroad, or of a contractor to a railroad, whose duties include inspection, construction, maintenance or repair of railroad track, bridges, roadway, signal and communication systems, roadway facilities or roadway machines on or near the track or with the potential of fouling a track and flagmen and watchmen/lookouts as defined in this program.

Train Approach Warning

A method of establishing On-Track Safety by warning roadway workers of the approach of trains in ample time to move to, or remain in, a place of safety in

accordance with requirements of FRA Roadway Worker Protection Rules.

Train Coordination

A method of establishing working limits on controlled track upon which a train holds exclusive authority to move whereby the crew of that train yields that authority to a roadway worker.

TRAIN DISPATCHER

The railroad employee assigned to control and issue orders governing the movement of trains on a specific segment of railroad track in accordance with the operating rules of the railroad that apply to that segment of track.

WATCHMAN/LOOKOUT

An employee who has been trained and qualified to provide warning to Roadway Workers of approaching trains or on-track equipment. Watchman/Lookouts shall be properly equipped to provide visual and auditory warning such as whistle or air horn and a white disk, white flag, or lantern. A Watchman/Lookout's sole duty is to look out for approaching trains/on-track equipment and provide at least fifteen (15) seconds advanced warning to employees before arrival of trains/on-track equipment

Working Limits

A segment of track with definite boundaries upon which trains, engines and roadway machines may move only as authorized by the roadway worker designated as the RWIC.

Work Zone

The area around a roadway machine that must not be entered without first communicating with the operator to establish safe work procedures.

YARD LIMITS

A portion of the main track designated by yard limit signs and timetable special instructions or a track bulletin.

Note: SERA does not utilize Local Control, Electronic Display, Foul Time, or Intertrack Barriers.