

**Compliance Guide for
Train Crew Size
Safety Requirements
49 CFR part 218, subpart G**

May 1, 2024

Federal Railroad Administration

Office of Railroad Safety

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Disclaimer

FRA is issuing this compliance guide pursuant to the Small Business Regulatory Enforcement Fairness Act, P.L. 104-121 § 212, as amended (5 USC 601 note). This guide provides information to assist organizations in complying with the rule, especially small businesses. Except when referencing laws, regulations, policies, or orders, the contents of this document do not have the force and effect of law and are not meant to bind the public in any way, and the document is intended only to provide information to the public regarding existing requirements under the law or agency policies. FRA recommends that users of this compliance guide¹ read the rule text (49 CFR part 218, subpart G) before using this guide as a resource.

FRA has a duty to conduct appropriate oversight to ensure compliance with the rail safety requirements in the rule text and described in this compliance guide and FRA reserves the right to use its enforcement authority as needed to ensure compliance.

Please direct questions regarding 49 CFR part 218, subpart G or this guide to:
FRAOPCERTPROG@dot.gov.

¹ Although any person may use this compliance guide, FRA has drafted it with the understanding that the intended audience is primarily the regulated entities that are obligated to comply with 49 CFR Part 218, subpart G. Therefore, this “compliance guide” has a different intended audience compared with an FRA “compliance manual,” as FRA personnel are the primary intended users of such a manual.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Table of Contents

PAGE	HEADING
4	Train Crew Size Safety Requirements—Overview
5	Background Questions and Answers
5	Definitions (§ 218.5)
6	Purpose and Scope (§ 218.121)
7	General Train Crew Size Safety Requirements (§ 218.123)
8	Specific Passenger and Tourist Train Operation Exceptions (§ 218.125)
8	Specific Freight Train Exception – Mine Load Out, Plant Dumping, or Similar Operation (§ 218.127)
9	Conditional Exceptions Based on Compliance Dates for Certain Operations (§ 218.129)
12	Special Approval Petition Requirements for Train Operations Staffed with a One-Person Train Crew (§ 218.131)
14	Risk Assessment Content and Procedures (§ 218.133)
16	Special Approval Procedure (§ 218.135)
17	Annual Railroad Responsibilities (§ 218.137)
17	Change in Ownership, Merger, or Other Transfer of Operation
18	Attachment #1: Written Notice Work Sheet Under § 218.129 for Two Types of Excepted One-Person Train Crew Operations
25	Attachment #2: Written Notice Work Sheet Under § 218.131(a)(2)(i) for Special Approval to Continue an Established One-Person Train Crew Operation That Does Not Meet an Exception
27	Attachment #3: Special Approval Petition Work Sheet Under § 218.131 for Train Operations Staffed with a One-Person Train Crew
33	Attachment #4: Annual Report Work Sheet Under § 218.137 for a One-Person Train Crew Operation
37	Attachment #5: Appendix E To part 218—Recommended Procedures for Conducting Risk Assessments

Train Crew Size Safety Requirements—Overview

The primary goal of these requirements is to ensure safe train operations through adequate staffing, clear operating rules, comprehensive training, safety-related tools (such as alerters) and other technology and processes to reduce safety risk, that safeguard the one-person train crewmember and communities that trains pass through so that the operation is as safe or safer than a two-person train crew operation. FRA is establishing minimum safety requirements for the size of train crews depending on the type of operation. Railroad operations are required to have a minimum of two crewmembers except for certain identified one-person train crew operations that do not pose significant safety risks to railroad employees, the public, or the environment. This includes requirements for railroads seeking to continue certain existing one-person train crew operations and a special approval process for railroads seeking to initiate certain new one-person train crew operations. Each railroad receiving special approval for a one-person train crew operation must submit to FRA an annual report summarizing the safety of the operation.

Key aspects of this rule include:

1. Definitions (§ 218.5)
 - Adds 17 new definitions to existing part 218.
 - Newly defined terms highly relevant to the rule include what is meant by a *one-person train crew*, *one-person train crewmember*, *risk assessment*, *switching service or switching operation*, and *train*.
2. General Requirements & Scope (§ 218.121 - § 218.123)
 - Provides the purpose for the minimum train crew size requirements.
 - Introduces the standard two-person crew requirements.
 - Clarifies that the minimum requirements in this subpart do not apply to a train operation controlled by a remote control operator.
 - Clarifies that the minimum requirements in this subpart do not apply to switching service or a switching operation.
3. Operation-Specific Exceptions (§ 218.125 - § 218.129)
 - Provides exceptions for passenger, tourist, and certain freight train operations, allowing for a one-person crew under specific conditions, along with necessary requirements for each type of operation.
4. Special Approval Processes (§ 218.131 - § 218.135)
 - Outlines the procedure for obtaining special approval for operations with a one-person train crew that are not excepted, including specifying the petition requirements, risk assessment procedures, and the process for submitting and reviewing these petitions.
5. Annual Responsibilities and Review (§ 218.137)
 - Details the annual reporting requirements and review processes for railroads that have received special approval for one-person train crew operations.

Background Questions and Answers

Definitions (§ 218.5)

Question (Q): How does FRA define a *one-person train crew*?

Answer (A): *One-person train crew* means either:

(1) One railroad employee is assigned a train as a train crew, and that single assigned person is performing the duties of both the locomotive engineer and the conductor;

or

(2) More than one railroad employee is assigned a train as a train crew, but only a single assigned person, who is performing the duty of the locomotive engineer, is traveling on the train when the train is moving, and the remainder of the train crew, which would include the conductor if the locomotive engineer is not the assigned conductor, is assigned to intermittently assist the train's movements.

Q: My railroad uses a single employee as a crewmember who is a certified locomotive engineer but is not trained as a conductor. No other employees help that single crewmember. Does that comply with FRA's requirements?

A: No. If only one employee is assigned as a train's crew, that person must be certified as both a locomotive engineer and conductor.

Q: My railroad uses a certified conductor who travels in a motor vehicle instead of with the train. Why does FRA consider my two-crewmember operation to be a *one-person train crew*?

A: A crewmember that does not travel on the train with the locomotive engineer may be useful and efficient in assisting the train at certain intervals but will not always be available to call out signals, does not have the on-train perspective, and therefore does not offer an identical safety substitute for a traditional, second crewmember who travels on the train to each destination. Also, a crewmember traveling in a motor vehicle may not: (1) be able to detect when a crewmember traveling alone on a train becomes incapacitated; (2) be in a position to apply the emergency brake; or (3) be available to take other mitigating action to protect the crewmember on the train or the safe operation of that train. For these reasons, many of the same safety concerns are raised with a single crewmember as a two-person crew with the second person in a motor vehicle.

Q: If my railroad uses a certified conductor who travels in a motor vehicle instead of with the train, are both crewmembers considered *one-person train crewmembers*?

A: No. In the context of a one-person train crew operation, the *one-person train crewmember* means the single assigned person who is performing the duty of the locomotive engineer and is traveling in the operating cab of the controlling locomotive when the train is moving.

Compliance Guide for Train Crew Size Safety Requirements

49 CFR part 218, subpart G

Q: Under this subpart, do I need to change anything about a one-person train crew operation that solely operates in switching service?

A: No. FRA has specifically excluded *switching service or switching operation*, defining that term to mean classifying rail cars according to commodity or destination; assembling of cars for train movements; changing the position of cars for purposes of loading, unloading, or weighing; placing locomotives and cars for repair or storage; or moving of rail equipment in connection with work service that does not constitute a train movement.

Q: If my railroad is operating a train in switching service but then the train ceases its switching and becomes a regular train operation, is this train operation exempt?

A: No. The train is only exempt during the switching service operation. Once the train ceases that switching service and becomes a regular train operation, it must comply as a regular train operation would.

Q: If my railroad is operating a non-revenue train such as a lite locomotive train operation, helper service train operation, or work train with a one-person train crew, are there any requirements that will apply?

A: Yes. FRA considers each of these operations to be a *train*, which FRA defines as one or more locomotives coupled with or without cars, except during switching service. The specific requirements for each of these one-person train crew operations are described later in this guide.

Purpose and Scope (§ 218.121)

Q: Are remote control operated trains subject to these minimum crew size safety requirements?

A: No, operations controlled by a *remote control operator* as defined in 49 CFR § 229.5 are not subject to these requirements.

Q: Can I prescribe additional or more stringent requirements for my railroad's train crews than these minimum crew size safety requirements?

A: Yes.

General Train Crew Size Safety Requirements (§ 218.123)

Q: What is the normal, minimum crew size for train operations?

A: Normally, each train must be assigned a minimum of two crewmembers unless:

(1) A one-person train crew operation is allowed through an exception specified in this subpart;

or

(2) A railroad has filed a special approval petition and received FRA's approval for a described one-person train crew operation.

Q: Is there a prohibition on a Class II or III railroad using a one-person train crew to haul certain types or quantities of hazardous materials?

A: No, but there are different requirements depending on whether the Class II or III railroad is continuing a legacy freight operation at least two years old, continuing an operation initiated before the effective date of the rule but not yet two years old, or is initiating a new operation after the rule went into effect.

Q: Are there any minimum crew size safety requirements in the subpart that apply to normal train operations with a two-person train crew, i.e., a multi-person crew that FRA does not define as a one-person train crew?

A: Yes. There are specific requirements that apply to the location of one or more train crewmembers who are not operating the train as they may be located anywhere outside of the operating cab of the controlling locomotive when the train is moving if:

(1) The train crewmember is on the train, except when the train crewmember cannot perform the duties assigned without temporarily disembarking from the train;

(2) The train crewmember and a locomotive engineer in the cab of the controlling locomotive can directly communicate with each other;

(3) The train crewmember can continue to perform the duties assigned; and

(4) The location of the train crewmember does not violate any Federal railroad safety law, regulation, or order.

Compliance Guide for Train Crew Size Safety Requirements 49 CFR part 218, subpart G

Q: I'm confused about the application of the requirements in this section under paragraph (d) concerning requirements for the location of a crewmember when the train is moving. My railroad uses a person in a motor vehicle as a crewmember, but that person will not be on the train when it is moving. Do the requirements in paragraph (d) apply to my railroad's one-person train crew operation that is permitted by an exception or that has received FRA approval?

A: No. The requirements under paragraph (d) apply only to a train operation crewed with a traditional complement of two or more crewmembers—not one-person train crew operations permitted either by exception or by FRA approval.

Specific Passenger and Tourist Train Operation Exceptions (§ 218.125)

Q: My passenger or tourist train operation uses one crewmember in the locomotive cab. Is that a one-person train crew operation under this subpart?

A: In most cases no, because typically, passenger and tourist trains will also have a passenger conductor and/or one or more assistant conductors riding in the passenger cars with the passengers. However, if that is the only train crewmember, then yes—but that is a rare circumstance in this context and other FRA requirements, such as for passenger train emergency preparedness, may be applicable.

Q: Can some passenger and tourist train operations be conducted with a one-person train crew without FRA's approval?

A: There are a limited number of exceptions for passenger and tourist train one-person train crew operations that do not require FRA's approval. For instance, no approval is required for a tourist train operation that does not operate on or connect to the nation's general railroad system. A second example that does not require FRA's approval is where a tourist or passenger train is moving a train empty of passengers and passengers will not be permitted to board the train's cars until the crew conducts a safety briefing on the safe operation and use of the train's exterior side doors. There are other exceptions with detailed requirements that pertain to MU locomotive operations,² rapid transit operations that are temporally separated and subject to FTA oversight, or the two passenger train operations that received FRA's approval for a passenger train emergency preparedness plan before this subpart became effective (i.e., Utah Transit Authority operating as FrontRunner and the Denver Regional Transportation District operating as Denver RTD).

Specific Freight Train Exception – Mine Load Out, Plant Dumping, or Similar Operation (§ 218.127)

Q: Can my railroad continue or initiate a mine load out, plant dumping, or similar unit freight train loading or unloading operation with a one-person train crew?

² The regulation includes a definition for "locomotive, MU" to refer to a type of locomotive that can transport passengers. An MU locomotive is a general term that includes a diesel- or electric-multiple-unit (DMU or EMU) operation and would also include other self-propelled rail rolling equipment regardless of the power source.

Compliance Guide for Train Crew Size Safety Requirements 49 CFR part 218, subpart G

A: Yes, but the railroad must ensure that the operation meets all the conditions for the exception to apply.

FRA defines a unit freight train as a freight train composed of cars carrying a single type of commodity. The operation must be located on a track that is temporarily made inaccessible from the general system; the train must move at 10 mph or less; the one-person train crew must not be required to operate a hand-operated switch, fill out paperwork, or call signal indications during the loading or unloading process; and, if the operation is overseen by another person, typically in a tower or on the ground, that person must have the capability of communicating with the one-person train crewmember operating the train.

If these conditions are not met, the railroad will need to add a second train crewmember.

Conditional Exceptions Based on Compliance Dates for Certain Operations (§ 218.129)

NOTE: Class II and III railroads may fill out attachment #1, the "Written Notice Work Sheet Under § 218.129 for Two Types of Excepted One-Person Train Crew Operations," and submit it to FRA to fulfill the written notification requirements of this section.

Q: What does FRA mean by conditional exceptions based on compliance dates?

A: This section outlines exceptions to the two-person train crew minimum requirement but includes some additional requirements that must be met on a staggered implementation date schedule to maintain use of each of the exceptions.

Q: How are the conditional exceptions in this section different than the special approval process?

A: Each of these conditional exceptions is self-executing in that, as long as the railroad fulfills all the requirements as specified, the railroad is not required to file a petition with FRA and receive FRA's approval to operate trains with the specified types of one-person train crew operations.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Q: Can FRA provide an overview of these types of one-person train crew operations and the conditional exceptions that apply?

**Conditional Exceptions with Implementation Deadlines
for Certain Types of One-Person Train Crew Operations³**

Type of One-Person Operation	Notify FRA of One-Person Operation⁴	Add Operating Rules to Address Safety of Certain Situations⁵	Add Operating Rules for One-Person Crew Member's Safety⁶	Add Alerters to Locomotives and add Associated Operating Rules⁷
Class II/III legacy freight (existing 2 years) ⁸	September 6, 2024	September 6, 2024	September 6, 2024	June 9, 2026
Class II/III freight non-legacy (existing, but less than 2 years) or new and no prohibited hazmat ⁹	Yes, provide before commencing operation	Yes, comply when commencing operation	Yes, comply when commencing operation	Yes, comply when commencing operation
Work trains not exceeding 4,000 trailing tons, ¹⁰ Helper service, ¹¹ and Lite locomotive(s) ¹²	Not applicable (N/A)	September 6, 2024	September 6, 2024	June 9, 2026

Q: My railroad has locomotives with an older style of alerter installed that does not meet FRA's current requirements under 49 CFR 229.140. It would also be less expensive for my

³ This table summarizes the requirements and is not intended to substitute for an exact description of the complete requirements.

⁴ § 218.129(b).

⁵ § 218.129(c)(1).

⁶ § 218.129(c)(2).

⁷ § 218.129(c)(3).

⁸ § 218.129(a)(1).

⁹ § 218.129(a)(2). FRA specifies the prohibited hazardous materials in § 218.123(c).

¹⁰ § 218.129(a)(3).

¹¹ § 218.129(a)(4).

¹² § 218.129(a)(5).

Compliance Guide for Train Crew Size Safety Requirements

49 CFR part 218, subpart G

railroad to retrofit the remaining locomotives that do not have an alerter with this older style of alerter. What will my railroad be required to do?

A: FRA requires each railroad with an applicable one-person train crew operation to equip the operation's controlling locomotive with a functioning alerter that is operating as intended and also requires that a one-person train crewmember test the alerter to confirm it is working before departure from each initial terminal, or prior to being coupled as the lead locomotive in a locomotive consist. This requirement is therefore consistent with requirements in § 229.140 for ensuring that an alerter is functioning and operating as intended. Railroads that have newer locomotives, placed into service on or after June 10, 2013, or permit the controlling locomotives to operate at speeds in excess of 25 mph, will already have locomotives with installed alerters that comply with FRA's requirements; thus, the issue of adding an alerter and operating rules that address the safety of that alerter will largely be an issue for railroads whose locomotives may lack such an alerter or have an older style of alerter installed. FRA is aware that some Class II and III freight railroads have alerters that do not meet, and are excepted from, the existing requirements for railroad locomotive safety standards in 49 CFR part 229. FRA also recognizes it may be less expensive to install a basic alerter that lacks all the functions of an alerter meeting FRA's current requirements.

To address this issue, the regulation allows each railroad that limits the one-person train crew's operation to a maximum authorized speed of 25 mph to use a locomotive alerter that does not otherwise meet the requirements for alerters in § 229.140, if the alerter has a manual reset and will result in a penalty brake application that brings the locomotive or train to a stop if not properly acknowledged. Of course, if the railroad is required to have an alerter that complies with § 229.140, this provision does not provide an alternative to that existing requirement.

Special Approval Petition Requirements for Train Operations Staffed with a One-Person Train Crew (§ 218.131)

NOTE: Class II and III railroads may fill out attachment #3, the "Special Approval Petition Work Sheet Under § 218.131 for Train Operations Staffed with a One-Person Train Crew," and submit it to FRA to fulfill this requirement.

Q: If not covered by the exceptions, what is required to operate a train with a one-person crew?

A: Railroads must submit a risk assessment with a special approval petition, including detailed operation descriptions and safety measures, for FRA review and approval.

Q: What is the purpose of the special approval petition process?

A: The railroad's petition must contain sufficient information for FRA to determine whether the operation described in the petition is as safe or safer than a two-person minimum train crew operation.

Q: Can FRA provide an overview of the types of one-person train crew operations that must seek FRA approval and the requirements that apply?

A: Yes, please see the table on the next page.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

**Requirements for Certain Types of One-Person Train Crew Operations
Needing FRA Approval Because an Exception Does Not Apply**

Type of One-Person Operation	Notify FRA of One-Person Operation	Petition for Special Approval with Risk Assessment for One-Person Operation¹³	Add Operating Rules to Address Safety of Certain Situations¹⁴	Add Op. Rules for One-Person Crew Member's Safety¹⁵	Add Alerters to Locomotives and add Associated Op. Rules¹⁶	Annual Report¹⁷
Existing but non-legacy (existing, but for less than 2 years) option to continue pending FRA approval ¹⁸	June 24, 2024 ¹⁹	August 7, 2024	Yes, provide as part of special approval petition	Yes, provide as part of special approval petition	Yes, provide as part of special approval petition	Yes, provide no later than March 31 of the following year
Other new (freight, passenger, or tourist) operations ²⁰	N/A	Yes	Yes, provide as part of special approval petition	Yes, provide as part of special approval petition	Yes, provide as part of special approval petition	Yes, provide no later than March 31 of the following year

¹³ § 218.131 through § 218.135.

¹⁴ § 218.129(c)(1).

¹⁵ § 218.129(c)(2).

¹⁶ § 218.129(c)(3).

¹⁷ § 218.137.

¹⁸ § 218.131(a)(2).

¹⁹ § 218.131(a)(2)(i). Unlike the notification requirements for the conditional exceptions, this notification can be limited to a summary of the operation and the name, title, address, telephone number, and email address of the primary person(s) to be contacted regarding the written notice and the operation. **NOTE:** Class II and III railroads may fill out attachment #2, the "Written Notice Work Sheet under § 218.131(a)(2)(i) for Special Approval to Continue an Established One-Person Train Crew Operations That Does Not Meet an Exception," and submit it to FRA to fulfill the written notification requirements of this section.

²⁰ § 218.131. The table depicts that this type of operation can file for special approval at any time.

Risk Assessment Content and Procedures (§ 218.133)

Q: What is a risk assessment?

A: FRA defines *risk assessment* to mean the process of determining, either quantitatively or qualitatively, or both, the level of risk associated with train operations with a one-person train crew, compared to operations with a two-person (or larger) crew, under all operating conditions.

Q: What is the goal of a risk assessment?

A: The goal of a risk assessment is to assess risk in an objective manner by following a decision-making process designed to systematically identify hazards, assess the degree of risk associated with those hazards, and based on those assessed risks, identify and implement measures to minimize or mitigate the risks to an acceptable level.

Q: What is a hazard?

A: FRA defines *hazard* to mean an existing or potential condition that could lead to an unplanned event or series of events that can result in an accident or incident (i.e., mishap); injury, illness, or death; damage to or loss of a system, equipment, or property; or damage to the environment.

Q: What is a risk?

A: FRA defines *risk* to mean the combination of the expected probability (or frequency of occurrence) and the consequence (or severity) of a hazard.

Q: What must be included in a risk assessment for one-person train crew operations?

A: In summary, a risk assessment under this subpart must contain:

(1) A complete description of the proposed operating environment, including a list and description of all functions, duties, and tasks associated with the operation of a train as proposed, performed by the one-person train crewmember, other railroad employee(s), or equipment.

(2) A description of the allocation of all functions, duties, and tasks to, or performed by, the one-person train crewmember, other railroad employee(s), or equipment.

(3) A risk-based hazard analysis for the proposed train operation's functions, duties and tasks that will identify new hazards, changes to existing hazards and/or changes to the risk of an existing hazard associated with the proposed train operation, as compared to a two-person minimum train crew operation, and then once mitigated, demonstrate that the proposed operation is as safe or safer than a train operation with a two-person minimum train crew. NOTE: FRA placed recommended procedures for conducting a quantitative risk-based hazard analysis in 49 CFR part 218, app. A (attachment #5) but note that there are other methods to perform a quantitative risk assessment. Further, a qualitative risk assessment is also acceptable.

Compliance Guide for Train Crew Size Safety Requirements 49 CFR part 218, subpart G

and

(4) A mitigation plan that documents the design and implementation timeline of the sustained mitigation strategies to eliminate or reduce the overall risk to a level such that the one-person train crew operation is as safe or safer than a two-person minimum train crew operation considering mitigation design and human factors, at a minimum.

Q: If my railroad wants to use alternative methodologies or procedures, or both, to assess the risk associated with a proposed operation, does my railroad need FRA approval to submit the alternative?

A: Yes, a railroad must petition FRA for approval to use such an alternative. After providing public notice of the request and an opportunity for public comment, FRA will determine whether the petition demonstrates that the alternative proposed methodology or procedures, or both, will provide an accurate assessment of the risk associated with the operation.

Q: Can FRA provide resources to help a railroad in developing a risk assessment that will comply with these requirements?

A: Yes, FRA has included in the compliance guide the tables and approaches from appendix E of the final rule that could be used to prepare a quantitative risk-based hazard analysis (attachment #5). Moreover, the System Safety Program rule (§ 270.103 System safety program plan), and the Risk Reduction Program rule (§ 271.103 Risk-based hazard management program), both provide considerations relating to the contents and approach to developing a risk-based hazard analysis. Further, the relevant discussion in the Fatigue Risk Management Program (FRMP) rulemaking,²¹ that is part of the Risk Reduction Program (RRP) and System Safety Program (SSP) rules, is an example of, or provides a template for, risk assessments that railroads could consider using to qualitatively or quantitatively analyze risk to show that the proposed one-person operation is as safe or safer than a two-person operation when risks are mitigated.

As each railroad operation differs depending on a multitude of factors (infrastructure, environment, operating rules, technology, etc.), it is important for the rule to provide each railroad the flexibility to identify and implement mitigation strategies for risks that are relevant to that railroad's operation. Indeed, in response to comments stating that the proposed regulatory language regarding the hazard analysis in the NPRM was too specific and required significant historical safety data that may not be available to all railroads (among other comments), FRA updated the hazard analysis requirements in the final rule to rely more on the regulatory approach reflected in the RRP, SSP, and FRMP regulations.

²¹ 85 FR 83489-94 (Dec. 22, 2020) (describing in the proposed rule the components of an FRMP) at <https://www.regulations.gov/document/FRA-2015-0122-0001>.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Q: My railroad drafted a risk assessment and would like to provide it in draft form to FRA to preview whether it looks complete before formally submitting it. Is that possible?

A: Yes. FRA encourages railroads to approach FRA should they have any questions or concerns about demonstrating compliance with the requirements for train operations staffed with a one-person crew. Although this informal process is not a substitute for the formal review process and FRA cannot make any binding statements of approval or disapproval, FRA is willing to make recommendations on issues raised or spotted.

Special Approval Procedure (§ 218.135)

Q: How does FRA handle special approval petitions for one-person train crew operations?

A: FRA reviews each petition, allows for public comment, and then decides to approve, deny, or request modifications, based on the extent to which the applicant has demonstrated that its proposed one-person train crew operation is “as safe or safer than operations with a two-person crew.”

Q: How long can my railroad expect this special approval process to take?

A: FRA expects that a properly prepared petition will normally be decided within 120 days.

Q: Can my railroad implement the one-person train crew operation while waiting for FRA's decision?

A: No, proposed one-person train crew operations described in a petition must not be implemented until approved.

Q: If my railroad receives FRA approval but later wants to expand the operation, or realizes that the risk assessment would not be accurate for any reason, for instance because the railroad wants to change aspects of its infrastructure, locomotive control technology, or risk mitigation technology, what is required?

A: FRA considers these changes to be material modifications, and a material modification must not be implemented until approved. At least 60 days before the date the railroad proposes to implement any material modification, the railroad must submit by email (to FRAOPCERTPROG@dot.gov) a description of how it intends to modify the operation, along with either a new or an updated risk assessment accounting for the identified proposed modifications.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Annual Railroad Responsibilities (§ 218.137)

NOTE: Class II and III railroads may fill out attachment #4, the "Annual Report Work Sheet Under § 218.137 for a One-Person Train Crew Operation," and submit it to FRA to fulfill this requirement.

Q: What are the annual reporting requirements for railroads with special approval for one-person crew operations?

A: Railroads must submit to FRA an annual report, based on a calendar year of safety data, regarding the approved operation. The report, which is due no later than March 31 of the following year, must also include confirmation that the risk assessment is still accurate or that calculations or assumption changes necessitated a new or updated risk assessment that is included with the calendar year of safety data.

Change in Ownership, Merger, or Other Transfer of Operation

Q: Would a change in ownership impact a legacy one-person train crew operation? In other words, would the legacy operation "convey" with the transfer of the short line? Some examples include a new owner purchasing a short line and continuing its existing operations, a new owner purchasing a short line and combining its operations with another existing short line, or a new owner purchasing only a portion of a short line. Similarly, what about a non-legacy operation that gets special approval but then changes ownership?

A: Yes, a change in ownership might impact a legacy one-person train crew operation or an operation that received special approval from FRA. The rule's requirements for special approval of an operation and the exception for certain legacy operations were narrowly written to apply only to the railroad filing the special approval petition or the railroad that established the legacy operation for at least two years before June 10, 2024, and that will continue that operation under the exception by complying with the specified, additional requirements. Therefore, in any transaction where there is a change in ownership, a merger, or other transfer of the operation, the acquiring owner or entity should not presume that the prior owner's exception or approval to operate with a one-person train crew, under 49 CFR part 218, subpart G, will transfer to the new owner.

This answer is based on the conclusion that the rule does not create any administrative property rights with respect to a one-person train crew operation that is bought, sold, or transferred by one railroad to (or from) another railroad. In some instances, the acquiring owner or entity may determine that another exception will apply so that it can avoid requesting special approval. The regulation does not preclude an acquiring owner or entity from filing for a waiver of one or more of the requirements for excepted legacy operations or from the special approval process.

FRA understands a current owner, or prospective buyer, may have some questions for FRA regarding the regulatory requirements. FRA therefore encourages railroads or prospective acquiring owners or entities to approach FRA should they have any questions or concerns about demonstrating compliance with the requirements of this rule.

ATTACHMENT #1

Written Notice Work Sheet Under § 218.129 for Two Types of Excepted One-Person Train Crew Operations

**Written Notice Work Sheet Under § 218.129 for
Two Types of Excepted One-Person Train Crew Operations**

INSTRUCTIONS:

- ✓ This work sheet, which may serve as your railroad's written notice to FRA, is for use only by a Class II or III railroad under the circumstances listed below. As a separate work sheet must be filled out for each operation that applies, please only check the circumstance that applies to this notice submission:

___EXISTING/LEGACY FREIGHT OPERATION FOR AT LEAST TWO YEARS. The railroad wants to continue using a one-person train crew freight operation that has been established for at least two years before June 10, 2024, § 218.129(a)(1). The deadline for this submission is September 6, 2024.

or

___NON-LEGACY FREIGHT OPERATION AND NOT TRANSPORTING CERTAIN TYPES OR QUANTITIES OF HAZARDOUS MATERIALS. The railroad is seeking to initiate a train operation staffed with a one-person train crew not transporting hazardous materials of the types or quantities specified in § 218.123(c).²² This type of submission is due before commencing the operation.

- ✓ All fields must be filled in.
- ✓ Must be submitted to FRAOPCERTPROG@dot.gov.

Name of Railroad:

Name of Operation:

If the railroad is submitting more than one written notice because it has either more than one legacy operation or more than one non-legacy operation, or an operation that does not cover the entire railroad, please give each operation a descriptive, identifying name. For example, Subdivision 1 or Mile Post 1-100.

²² § 218.123(c) *Hazardous materials*. For the purposes of this paragraph (c), a tank car containing residue of a hazardous material as defined in 49 CFR 171.8 is not considered a loaded car. The exceptions in §§ 218.125 and 218.127 are not applicable, and the exceptions in § 218.129 apply as specified therein, when any train is:

- (1) A high-hazard flammable train (HHFT) as defined in § 171.8 of this title;
- (2) Transporting twenty (20) or more loaded tank cars or loaded intermodal portable tanks of any one or any combination of the hazardous materials identified in § 232.103(n)(6)(i)(B) of this chapter; or
- (3) Transporting one or more car loads of rail-security sensitive materials (RSSM) as defined in § 1580.3 of this title.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

(1) Primary Person's Contact Information Regarding This Notice and the Operation:

Name:

Title:

Address:

Telephone number:

Email address:

(2) Description of Operation

The location of the operation, with as much specificity as can be provided, as to the characteristics of the geographic area through which the trains will operate (e.g., population density and proximity to environmentally sensitive areas), the terrain over which the trains will be operated, industries or communities served, and track segments, territories, divisions, or subdivisions operated over.

Description of the operation by location (track segments, territories, subdivisions, or divisions)	Population density (rural <1,500, urban 1,500-50K, city >50K-100K, major city >100K)	Navigation in proximity to environmentally sensitive areas such as riparian areas,²³ upland forests,²⁴ and vulnerable aquifers²⁵ (No, or list all that apply)	Industries served (agricultural-Ag, manufacturing-Mfr, mining, oil/gas, etc.)	For passenger operations, name the communities served	Terrain (flat, undulating, mountainous, etc.)

²³ Riparian zones, or areas, are lands that occur along the edges of rivers, streams, lakes, and other water bodies. Examples include streambanks, riverbanks, and flood plains.

²⁴ Upland forests are dynamic habitats, teeming with plants, mammals, and insects.

²⁵ Aquifers are areas of soil or rock under the ground where cracks and spaces allow water to pool.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

List each business record or other written document below that is attached to this notice supporting that the legacy operation was established for at least two years as required, with an explanation regarding how each record or document establishes that the operation occurred at regular intervals under a set of defined procedures or conditions. For example, include copies of training and operating rules particular to the one-person train crew operation, and a sample of hours of service records demonstrating that a one-person train crew was deployed.

Attachment No.	What is this record or document?	Explanation

(3) Additional Information

Provide the class(es) of track to be operated over, the method of operation, a list of the signal and train control systems, devices, and appliances installed and in operation.

Description of the operation by location (track segments, territories, subdivisions, or divisions)	Identify class or classes of track for each location	Describe the method of operation (dark, signal, other than main track, yard limits)	Signal and train control systems	Devices	Appliances

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Provide a list of all active and passive highway-rail grade crossings, including crossing numbers.

Location: City/State	Crossing Number	Active (A) or Passive (P)

(4) The locations of any track where the average grade of any segment of the track operated over is 1 percent or more over 3 continuous miles or 2 percent or more over 2 continuous miles.

Location: City/State	RR Location: Territory and/or Track Name	Milepost (MP)

(5) The maximum authorized speed of the operation: _____

(6) The approximate average number of miles and hours a one-person train crew will operate in a single tour of duty.

Average miles in single duty tour	Average hours in single duty tour

(7) The number and frequency of the trains involved, and the maximum number of cars and tonnage set for the operation, if any.

Number of trains and frequency (e.g., 10 trains per day, week, or month)	Will the number of trains and frequency change drastically throughout the year because of periods/seasons of lower or higher frequency? (If so, describe and express low/high rates)	Maximum number of cars for the operation/train; if none, explain	Maximum tonnage set for the operation/train; if none, explain

Compliance Guide for Train Crew Size Safety Requirements

49 CFR part 218, subpart G

(8) Whether the one-person train crew operation is permitted to haul hazardous materials of any quantity and type, and the approximate percentage of carload traffic in the one-person train crew operation that is hazardous materials.

Hazmat limited by quantity (Y/N); if yes, explain	Hazmat limited by type (Y/N); if yes, explain	Approximate percent of total cars for operation transporting hazmat

(9) Whether any limitations are placed on a person operating as a one-person train crew. Such limitations may include, but are not limited to, a maximum number of miles or hours during a single tour of duty, or limitations placed on a person in coordination with a fatigue mitigation plan.

Mileage limit; if yes, explain	Duty tour limit; if yes, explain	Fatigue plan limit; if yes, explain	Other limit(s); explain

(10) Information regarding other operations traveling on the same track as the one-person train operation or that travel on an adjacent track. Such information shall include, but is not limited to, the volume of traffic and the types of opposing moves (e.g., passenger trains or freight trains hauling hazardous materials).

Other operations	Volume expressed in cars per year	Passenger (Y/N); if yes, describe volume	Hazmat (Y/N); if yes, describe volume	Other info
Same track				
Adjacent track				

(11) A detailed description of any technology that is used to perform tasks typically performed by a second crewmember, or that prevents or mitigates the consequences of accidents or incidents.

Name Technology	Description

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

(12) A copy of any railroad rule or practice that applies to the one-person train crew operation but does not apply to train crew operations with two or more crewmembers.

_____ For non-legacy operations, you must list each operating rule your railroad established that complies with § 218.129(c).

_____ For legacy operations, if your railroad has not established each operating rule that complies with § 218.129(c), you acknowledge that the subpart requires that you add those requirements by certain implementation dates or cease this type of one-person train crew operation.

Operating rule number or name of operating practice	Confirm copy is attached (Y/N)

(13) For each railroad seeking to continue a legacy freight train operation staffed with a one-person train crew confirm that you attached either:

_____ Five (5) years of accident and incident data for the operation identified, as required by part 225 of this chapter,

or

_____ For operations established less than five (5) years before June 10, 2024, accident and incident data for the operation from the date the operation was established.

(14) In addition to the required information above, your railroad may voluntarily submit any other information describing protections provided in lieu of a second train crewmember, or relevant data or analysis, or both, that the railroad can provide about its one-person train crew operation and how that operation is as safe or safer than a two-person minimum train crew operation.

Describe any additional information submitted or indicate N/A if not applicable	Confirm copy is attached (Y/N)

Print Name/Title

Signature

ATTACHMENT #2

Written Notice Work Sheet Under § 218.131(a)(2)(i) for Special Approval to Continue an Established One-Person Train Crew Operation That Does Not Meet an Exception

**Written Notice Work Sheet Under § 218.131(a)(2)(i) for
Special Approval to Continue an Established One-Person Train Crew
Operation That Does Not Meet an Exception**

INSTRUCTIONS:

This work sheet, which may serve as your railroad's written notice to FRA, is for use only by a railroad that has established a one-person train crew operation before June 10, 2024. By submitting this written notice by email to *FRAOPCERTPROG@dot.gov* no later than June 24, 2024, the railroad may continue the operation in accordance with this section pending FRA's decision on the railroad's special approval petition which must be submitted no later than August 7, 2024.

By submitting this notice, the railroad must, in coordination with FRA, eliminate, mitigate, or otherwise address any safety hazards related to the one-person train crew operation FRA finds in reviewing the railroad's special approval petition.

(1) Primary Person's Contact Information Regarding This Notice and the Operation.

Name:

Railroad:

Title:

Address:

Telephone number:

Email address:

(2) Provide a brief summary of the operation. A separate work sheet must be filled out for each operation that applies; if your railroad has multiple operations, please provide a name for each separate operation so that they are distinguishable.

ATTACHMENT #3

Special Approval Petition Work Sheet Under § 218.131 for Train Operations Staffed with a One- Person Train Crew

**Special Approval Petition Work Sheet Under § 218.131 for
Train Operations Staffed with a One-Person Train Crew**

INSTRUCTIONS:

This work sheet, which may serve as your railroad's special approval petition to FRA, is for use only by a Class II or III railroad.

- ✓ All fields must be filled in.
- ✓ Must be submitted to FRAOPCERTPROG@dot.gov.

Name of Railroad:

Name of Operation:

A separate work sheet must be filled out for each operation that applies; if your railroad has multiple operations, please provide a descriptive, identifying name for each separate operation so that they are distinguishable. For example, Subdivision 1 or Mile Post 1-100.

(1) Primary Person's Contact Information Regarding This Notice and the Operation:

Name:

Title:

Address:

Telephone number:

Email address:

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

(2) Description of Operation

The location of the operation, with as much specificity as can be provided, as to the characteristics of the geographic area through which the trains will operate (e.g., population density and proximity to environmentally sensitive areas), the terrain over which the trains will be operated, industries or communities served, and track segments, territories, divisions, or subdivisions operated over.

Description of the operation by location (track segments, territories, subdivisions, or divisions)	Population density (rural <1,500, urban 1,500-50K, city >50K-100K, major city>100K)	Navigation in proximity to environmentally sensitive areas such as riparian areas,²⁶ upland forests,²⁷ and vulnerable aquifers²⁸ (No, or list all that apply)	Industries served (agricultural-Ag, manufacturing-Mfr, mining, oil/gas, etc.)	For passenger operations, name the communities served	Terrain (flat, undulating, mountainous, etc.)

²⁶ Riparian zones, or areas, are lands that occur along the edges of rivers, streams, lakes, and other water bodies. Examples include streambanks, riverbanks, and flood plains.

²⁷ Upland forests are dynamic habitats, teeming with plants, mammals, and insects.

²⁸ Aquifers are areas of soil or rock under the ground where cracks and spaces allow water to pool.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

(3) Additional Information

Provide the class(es) of track to be operated over, the method of operation, a list of the signal and train control systems, devices, and appliances installed and in operation.

Description of the operation by location (track segments, territories, subdivisions, or divisions)	Identify class or classes of track for each location	Describe the method of operation (dark, signal, other than main track, yard limits)	Signal and train control systems	Devices	Appliances

Provide a list of all active and passive highway-rail grade crossings, including crossing numbers.

Location: City/State	Crossing Number	Active (A) or Passive (P)

(4) The locations of any track where the average grade of any segment of the track operated over is 1 percent or more over 3 continuous miles or 2 percent or more over 2 continuous miles.

Location: City/State	RR Location: Territory and/or Track Name	Milepost (MP)

(5) The maximum authorized speed of the operation: _____

(6) The approximate average number of miles and hours a one-person train crew will operate in a single tour of duty.

Average miles in single duty tour	Average hours in single duty tour

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

(7) The maximum number of cars and tonnage set for the operation, if any.

Maximum number of cars for the operation; if none, explain	Maximum tonnage set for the operation; if none, explain

(8) Whether the railroad is seeking approval to transport hazardous materials of the types or quantities specified in § 218.123(c) of this part or whether the railroad is seeking approval to transport other hazardous materials (as defined by § 171.8 of this title) of any quantity and type.

Seeking approval to transport hazmat of the types or quantities specified in § 218.123(c) (Y/N)	Seeking approval to transport other hazmat (as defined by § 171.8 of this title) of any quantity and type (Y/N)

(9) Whether any limitations are placed on a person operating as a one-person train crew. Such limitations may include, but are not limited to, a maximum number of miles or hours during a single tour of duty, or limitations placed on a person in coordination with a fatigue mitigation plan.

Mileage limit; if yes, explain	Duty tour limit; if yes, explain	Fatigue plan limit; if yes, explain	Other limit(s); explain

(10) Information regarding other operations that may travel on the same track as, or an adjacent track to, the train operation staffed with a one-person train crew. Such information shall include, but is not limited to, the volume of traffic and the types of opposing moves (e.g., passenger or freight trains hauling hazardous materials).

Other operations	Volume expressed in cars per year	Passenger; if yes, describe volume	Hazmat; if yes, describe volume	Other info
Same track				
Adjacent track				

(11) A detailed description of any technology that will be used to perform or support tasks typically performed by a second crewmember, or that will prevent or significantly mitigate the consequences of accidents or incidents.

Name Technology	Description

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

(12) A copy of any railroad rule or practice that will apply to the proposed train operation(s) with a one-person train crew but does not apply to train crew operations with two or more crewmembers.

Operating rule number or name of operating practice	Confirm copy is attached (Y/N)

(13) A copy of a railroad operating rule that will apply to the proposed train operation(s) with a one-person train crew, and which complies with the requirements of § 218.129(c)(1), to ensure rail employees can take mitigation measures that provide a level of safety that is as safe or safer than a two-person train crew operation to address certain situations with the one-person train crew operation. A passenger train operation with an approved emergency preparedness plan under part 239 of this chapter satisfies the requirement in this paragraph (b)(13).

Operating rule number or name of operating practice	Confirm copy is attached (Y/N)

(14) Five (5) years of accident and incident data, as required by part 225 of this chapter, for the operation, when operating with two or more crewmembers, or, for operations established less than five (5) years before June 10, 2024, accident and incident data for the operation from the date the operation was established.

5 years of data (Y/N)	Approximate date the operation was established if less than 5 years of data	Confirm copy of data is attached (Y/N)

(15) A risk assessment of the proposed operation that meets the requirements of § 218.133.

Confirm copy of risk assessment is attached (Y/N)

(16) In addition to the required information above, your railroad may voluntarily submit any other information describing protections provided in lieu of a second train crewmember, or other relevant data or analysis.

Describe any additional information submitted or indicate N/A if not applicable	Confirm copy is attached (Y/N)

ATTACHMENT #4

Annual Report Work Sheet Under § 218.137 for a One-Person Train Crew Operation

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

**Annual Report Work Sheet Under § 218.137
for a One-Person Train Crew Operation**

INSTRUCTIONS:

- ✓ Only fill out if your railroad received special approval from FRA to use an operation with a one-person train crew; you may submit this work sheet or submit the same information in another format.
- ✓ All fields must be filled in.
- ✓ Must be completed each calendar year and **submitted** no later than March 31 of the following year to FRAOPCERTPROG@dot.gov.

Name of Railroad:

_____ (i) The total number of FRA-reportable accidents/incidents under part 225 of this chapter.

NOTE: If an accident/incident was FRA-reportable for more than one reason (e.g., the accident/incident occurred at a highway-rail grade crossing and resulted in rail equipment damages higher than the current reporting threshold), the accident/incident shall only be listed once in the total calculation.

Date	City/State	Factual description of event and cause	At highway-rail grade crossing (Y/N)
Example: 5/1/24	Easton/MD	Train collided with motor vehicle; [List applicable FRA cause code(s)]	Y

(ii) The total number of FRA-reportable employee fatalities.

Date	Location	Factual description of event

(iii) The total number of FRA-reportable employee injuries.

Date	Location	Factual description of event

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

_____ (iv) The total number of trespasser fatalities at a highway-rail grade crossing.

Date	Location	Factual description of event

_____ (v) The total number of trespasser injuries at a highway-rail grade crossing.

Date	Location	Factual description of event

_____ (vi) The total number of passenger fatalities at a highway-rail grade crossing.

Date	Location	Factual description of event

_____ (vii) The total number of passenger injuries at a highway-rail grade crossing.

Date	Location	Factual description of event

_____ (viii) The total number of instances where a railroad employee did not comply with a railroad rule or practice applicable to the one-person train crew operation receiving special approval under this subpart but not applicable to train crew operations with two or more crewmembers that travel on the train.

Date	Location	Factual description of event

_____ (ix) The total number of instances where a one-person train crewmember had a locomotive engineer or conductor certification revoked for violation of an operating rule or practice that occurred when the person was operating a one-person train crew operation receiving special approval under this subpart

_____ Subtotal for locomotive engineer revocations

_____ Subtotal for conductor revocations

Date	Location	Factual description of event

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

_____(x) The total number of accountable rail equipment accidents/incidents under part 225 of this chapter.

Date	Location	Factual description of event

_____(xi) The total number of instances when the railroad was required to comply with an operating rule to ensure rail employees can take mitigation measures that provide a level of safety that is as safe or safer than a two-person train crew operation to address certain situations with the one-person train crew operation as required under § 218.131(b)(13).

Date	Location	Factual description of event

_____(xii) The total number of instances when a dispatcher, operator, or other required employee unexpectedly lost communication with the one-person train crew operation receiving special approval under this subpart.

Date	Location	Factual description of event

_____(xiii) The total number of employee hours worked.

_____(xiv) The total number of train miles.

MANDATORY CONFIRMATION

Yes, I confirm that the risk assessment for operations receiving special approval under this subpart, including all calculations and assumptions, remains unchanged and that no technology changes have been implemented or new or additional hazards identified.

or

____ No, I confirm that a new or updated risk assessment meeting the requirements of § 218.133 has been prepared and submitted with this annual report. This new or updated risk assessment includes a written plan and schedule for implementing any mitigations required to address any newly identified hazards.

Print Name/Title

Signature

ATTACHMENT #5

Appendix E to Part 218— Recommended Procedures for Conducting Risk Assessments

**APPENDIX E TO PART 218—RECOMMENDED PROCEDURES
FOR CONDUCTING RISK ASSESSMENTS**

A railroad petitioning to operate with a one-person train crew in accordance with § 218.133 must prepare a risk-based hazard analysis that quantitatively and/or qualitatively demonstrates that the proposed operation using a one-person train crew will be as safe or safer than an operation using a two-person train crew under normal operation and in a degraded or failed state. This appendix provides one approach that may be used by a railroad to prepare a risk-based hazard analysis and compare the risks to determine if a proposed one-person train crew operation will be as safe or safer than a two-person minimum train crew operation, when all mitigations are in place. A railroad is not restricted to this approach and may use another formal safety methodology that fulfills the requirements of § 218.133.

Quantitative Risk-Based Hazard Analysis

(a) Identify new hazards, changes to existing hazards or changes to the risk of existing hazards of the one-person train crew operation, as compared to a two-person minimum train crew operation, as provided in § 218.133(a)(3)(i).

(b) Calculate and/or update each risk of the one-person train crew operation, as compared to a two-person minimum train crew operation, by assessing each new hazard, change to an existing hazard and/or change to the risk of an existing hazard, in terms of the severity and likelihood of potential events using the following framework:

(1) The assessment of the severity is measured as the worst-credible mishap resulting from the hazard and categorized in accordance with Table 1 of this paragraph (b)(1):

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Table 1		
SEVERITY CATEGORIES		
Category	Severity Ranking (1 being the most severe)	Definition
Catastrophic	1	Results in one or more of the following: fatality, irreversible significant environmental damage, or significant monetary loss. Accidents/incidents that must be reported to FRA telephonically under § 225.9 of this chapter are considered catastrophic.
Critical	2	Results in one or more of the following: significant injury (as defined in § 225.5 of this chapter), reversible significant environmental damage, or reportable monetary loss. Accidents/incidents that are not telephonically reported under § 225.9 of this chapter but are still FRA-reportable under § 225.19 of this chapter, are considered critical.
Marginal	3	Results in one or more of the following: minor injuries (i.e., injuries that are not significant as defined in § 225.5 of this chapter), reversible non-significant environmental damage, or monetary loss. Mishaps that are not FRA-reportable accidents/incidents but are considered accountable rail equipment accidents/incidents as defined in § 225.5 of this chapter, are considered marginal.
Negligible	4	Results in one or more of the following: no injuries, no environmental damage, or equipment or railroad structure damage(s) that do not require repair.

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

(2) The assessment of probability of occurrence as defined in Table 2 of this paragraph

(b)(2):

Table 2			
PROBABILITY LEVELS			
Description	Level	Qualitative Characterization of Probability	Quantitative Characterization of Probability¹
FREQUENT	A	Likely to occur frequently	Greater than once every 1,000 operating hours
PROBABLE	B	Likely to occur several times	Between once every 1,000 hours and once every 100,000 hours
OCCASIONAL	C	Likely to occur once, but not several times	Between once every 100,000 hours and once every 10,000,000 hours
REMOTE	D	Unlikely but possible to occur	Between once every 10,000,000 hours and once every 1,000,000,000 hours
IMPROBABLE	E	So unlikely that it can be assumed the occurrence may not be experienced	Less than once every 1,000,000,000 hours

¹ Probability of a hazard occurring per 1,000 operating hours.

(c) Applying the sustained mitigation strategies designed and implemented in accordance with § 218.133(a)(4), recalculate the risk using the framework documented in paragraph (b).

(d) Prepare a risk matrix in the format of Table 3 of this paragraph (d) that classifies the risks calculated in paragraph (c) in terms of severity and likelihood of each new hazard, change to an existing hazard, or change to the risk of an existing hazard as follows:

Compliance Guide for Train Crew Size Safety Requirements
49 CFR part 218, subpart G

Table 3				
Risk Matrix				
PROBABILITY	SEVERITY			
	(1) Catastrophic	(2) Critical	(3) Marginal	(4) Negligible
(A) FREQUENT	1A	2A	3A	4A
(B) PROBABLE	1B	2B	3B	4B
(C) OCCASIONAL	1C	2C	3C	4C
(D) REMOTE	1D	2D	3D	4D
(E) IMPROBABLE	1E	2E	3E	4E

(e) Prepare a risk report of the train operation staffed with a one-person train crew, as compared to a two-person minimum train crew operation, documenting the basis for acceptability of all new hazards, changes to existing hazards and/or changes to the risk of existing hazards identified in the matrix required by paragraph (d) of this appendix. The risk report should categorize the risk of each new hazard, change to existing hazard and/or change to the risk of an existing hazard as follows:

(i) *Unacceptable.* Categories 1A, 1B, 1C, 1D, 2A, 2B, 2C, 3A, 3B, and 4A are unacceptable. A railroad should not file a petition for special approval with a new hazard, change to existing hazard and/or change to the risk of an existing hazard in this category as FRA will not approve an operation with a partially mitigated or unmitigated hazard that is categorized as unacceptable;

(ii) *Acceptable under specific conditions.* Categories 1E, 2D, 3C, 3D, 4B, and 4C are acceptable under specific conditions. A railroad's risk report should describe why the railroad finds the conditions acceptable. A new hazard, change to existing hazard and/or change to the

Compliance Guide for Train Crew Size Safety Requirements

49 CFR part 218, subpart G

risk of an existing hazard will be acceptable under specific conditions if FRA finds that the one-person operation is as safe or safer than a two or more-person operation; and

(iii) *Acceptable*. Categories 2E, 3E, 4D, and 4E are acceptable. FRA will not deny a petition for special approval solely on the basis an appropriately categorized acceptable new hazard, change to existing hazard and/or change to the risk of an existing hazard if the one-person operation is as safe or safer than a two-person minimum operation.

(f) Provide a statement with supporting evidence, that the one-person operation with a fully implemented mitigation plan, is as safe or safer than a two-person minimum operation.