

**SUMMARY: Issues from Public Comments To
FRA's Occupational Noise Exposure NPRM**

I. Hearing Conservation Program & Monitoring

A) Exchange Rate – Use 3 dB instead of 5 dB

Numerous commenters indicated a desire to modify the exchange rate calculation, i.e., the manner in which the exposure dose is calculated. See §227.5.

There is Working Group consensus to reject this recommendation and stay with the original consensus language.

B) Sound Level Filter – Use an C-Scale instead of a A-Scale

Two commenters suggested that FRA should use the C-scale, instead of the A-scale, for measuring noise in the railroad environment.

There is Working Group consensus to reject this request.

C) Revise the Upper Limit for Noise Measurements to 140 dB(A)

Numerous commenters suggested that FRA revise the upper limit for noise measurements and for the action level from 130 dB(A) to 140 dB(A). One commenter did not support this suggestion. See §227.5 and §227.101(c)(1).

There is Working Group consensus to accept this suggestion.

Action Item: Revise rule text in 227.5 and 227.103(b)(2). Add preamble language that explains that noise monitoring data conducted prior to this rulemaking (i.e., with an upper limit of 130 dB(A)) is still good.

D) Proposed 8-hour TWA exposure limit of 90 dBA is not protective enough

The triggering criterion levels in the NPRM are an 8-hour-TWA of 85 dB(A) (action level) for participation in the audiometric testing and training elements of the hearing conservation program and an 8-hour TWA of 90 dB(A) (permissible exposure limit) for actively protecting hearing. These are the same criteria found in OSHA's standard. Some commenters recommended that FRA lower the criterion level to an 8-hour-TWA of 85 dB(A) as the sole trigger for compliance.

One commenter (who recommended the exposure limit based on 85 dB(A) and a 3 dB exchange rate) suggested that if FRA ultimately decided to retain its proposed PEL of 90 dB(A), then FRA should adopt a non-mandatory noise dosimetry protocol in which employees' exposures are measured using both L_{osha} & L_{niosh} . The commenter explained that by using both sampling protocols, railroad safety and health professionals would

better understand the spectrum of hearing risks faced by railroad employees and could better choose the most relevant method for protecting employee hearing.

There is Working Group consensus to reject these comments and stay with the original consensus language.

E) Why didn't FRA consider approaches other than that of the OSHA HCA?

One commenter thinks that FRA should not have modeled its rule after OSHA's HCA. The commenter believes that the HCA is an outdated approach that precludes alternatives and innovation. This commenter advocated for the use of a performance-oriented framework that adopts, or at a minimum allows, alternative strategies. This commenter also advocated for the use of its own "innovative solution" known as "exposure smart protectors."

There is Working Group consensus to reject this comment. OSHA is the lead agency in the field of occupational health, and the "hearing conservation program" approach is a proven and effective method in the work place environment. There is no peer support for this alternative approach to personal protection.

F) Italicize all noise levels above 120 dB(A) on Table A-1 in Appendix A to Part 227

In Appendix A, FRA provides tables with which an employer can compute an employee's noise dose. In its corresponding Table G-16a, OSHA originally italicize all noise levels that are above 115 dB(A) (in its 1981 amendment). One commenter suggested that FRA also italicize all levels above 120 dB(A). The commenter also suggested that FRA footnote the table and explain the intent behind the italics (i.e., to indicate that the levels are not permitted but are included only for computation purposes).

There is Working Group consensus to accept this recommendation.

G) Removal of Measurement Artifacts

The proposed rule allows for, but does not require, the removal of measurement artifacts. See §227.105(b). One commenter noted that on the surface, the opportunity to remove artifacts seems reasonable, however, he thinks that it is unnecessary and that if done carelessly or with bias, it could materially distort the actual data.

There is Working Group consensus to reject this recommendation.

Action Item: Revise rule text in 227.105(b) to read as follows: "the apparent source of noise exposures shall be observed and documented and measurement artifacts may be removed." Add preamble discussion about the necessity of documenting these artifacts as they occur during monitoring.

H) FRA should not adopt OSHA's Appendix B

One commenter noted that it is regrettable that FRA adopted OSHA's Appendix B. The commenter stated that Appendix B is confusing and misleading. The commenter suggests that if FRA decides to keep Appendix B, FRA should rewrite and clarify it.

There is Working Group consensus to reject this recommendation. This commenter did not suggest any alternative to using Appendix B. The Working Group looks to OSHA in this area, and OSHA has not yet moved away from using Appendix B. The Working Group does not recommend an overhaul of Appendix B. (The only change that the Working Group recommends is to add the Method B ANSI Standard to Appendix B).

I) Adopt Tables 1-1 and 1-2 from the 1998 NIOSH Revised Criteria Document

One commenter suggested that FRA add a non-mandatory appendix that contains Table 1-1 and 1-2 from the 1998 NIOSH Revised Criteria Document. The NIOSH tables are analogous to Tables A-1 and A-2 in FRA's proposed rule; the difference is that the NIOSH tables are based on an 85 dB(A) exposure limit and a 3 dB exchange rate. The commenter believes that this appendix would supply additional materials to help users make informed decisions.

There is Working Group consensus to reject this recommendation.

J) Effective date for development and implementation of a noise monitoring program

The proposed rule provides class 1, passenger, and commuter railroads with 12 months to develop and implement a noise monitoring program, railroads with 400,000 or more employee hours with 18 months, and railroads with fewer than 400,00 employee hours with 30 months. See §227.103(a).

There is Working Group consensus to reject this recommendation. FRA determined these implementation dates as a result of consensus in the RSAC process. The dates are based on the industry's ability to develop and implement noise monitoring programs.

Some commenters recommended that all aspects of the rule be phased in within one year. They explain that SBREFA supports phase-in implementation dates but only where there are no immediate safety risks. They believe that there are immediate safety risks and therefore FRA should not use phase-in implementation dates. By contrast, another commenter indicated that the 12-month-period is a short time frame and recommended that FRA provide those entities with 24 months.

K) Employ a 100% monitoring program instead of a statistical approach

One commenter suggested that FRA employ a 100% monitoring program instead of the proposed statistical approach. See §227.103(b). Current technology can provide both the railroad and its employees with continuous weighted eight hour noise data. The

commenter explained that this technology did not exist when FRA began drafting the rule seven years ago, but it now exists and so it should be used.

There is Working Group consensus to reject this recommendation.

II. Definitions & Qualifications

A) Add definitions for “audiogram” and “audiometry”

A couple of commenters suggested that FRA add definitions for audiogram and audiometry, because FRA uses those terms throughout the rulemaking. The commenters suggested definitions that are used in the audiology industry.

There is Working Group consensus to accept these recommendations and add the following definitions to 227.5:

AUDIOGRAM: “An audiogram means a record of audiometric testing, showing thresholds of hearing sensitivity measured at discrete frequencies, as well as other recordkeeping information.”

AUDIOMETRY: “Audiometry means the act or process of measuring hearing sensitivity at discrete frequencies. Audiometry can also be referred to as audiometric testing.”

B) Revise the definition of “audiologist”

Several commenters suggested that FRA revise the definition of audiologist. The commenters provided alternate definitions. In addition, commenters suggested that physicians and audiologists should be required to have “experience and expertise in hearing and hearing loss” and that they should be required to attend training on how to supervise the audiometric portion of a HCP.

There is Working Group consensus to revise this definition of audiologist as follows:

227.5 Audiologist means a professional who provides comprehensive diagnostic and treatment/rehabilitative services for auditory, vestibular, and related impairments and
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(i) has a master’s degree or doctoral degree in audiology and
(ii) is licensed as an audiologist by a State; or in the case of an individual who furnishes services in a State which does not license audiologists, has successfully completed 350 clock hours of supervised clinical practicum (or is in the process of accumulating such supervised clinical experience), performed not less than 9 months of supervised full-time audiology services after obtaining a master’s or doctoral degree in audiology or a related field, and successfully completed a national examination in audiology approved by the Secretary [of Health and Human Services].

C) What does it mean to be a “qualified technician?”

Numerous commenters were concerned about the qualifications for technicians. They offered various recommendations for how FRA should define a “qualified technician.” Some commenters requested that technicians only be recognized as “qualified” if they are CAOHC certified. Others suggested that technicians should work under the supervision of a “professional supervisor of the audiometric testing program.”

See II(D) below. The Working Group considered (C) and (D) together.

D) Add a definition for “professional supervisor of the audiometric monitoring program”

Several commenters suggested that FRA add the following definition: “A professional supervisor of the audiometric monitoring program may be an audiologist, an otolaryngologist, or physician with experience and expertise in hearing and hearing loss, who supervises the audiometric testing program, reviews audiograms, and audiometric databases.” The commenters believe that the definition would clarify subsequent references in the rule.

There is Working Group consensus to accept this recommendation. FRA will add the following definition:

227.5 Professional Supervisor of the Audiometric Monitoring Program in a hearing conservation program means an audiologist, an otolaryngologist, or a physician with experience and expertise in hearing and hearing loss.

Note: The Working Group accepted the commenter’s definition, with the exception of the phrase “who supervises the audiometric testing program, reviews audiograms, and reviews audiometric databases.”

There is Working Group consensus to make the following edits to 227.109(c), in conjunction with the new definition:

227.109(c) Tests. Audiometric tests shall be performed by:

- (1) A licensed or certified audiologist or an otolaryngologist or physician who has experience in hearing and hearing loss; or***
- (2) By a qualified technician who is certified by the Council for Accreditation for Occupational Hearing Conservation or any other equivalent organization or who has satisfactorily demonstrated competence in administering audiometric examinations obtain valid audiograms and properly using, maintaining, and checking calibration and proper function of the audiometers being used. A technician who performs audiometric tests must be responsible to a Professional Supervisor of the Audiometric Monitoring Program.***

Action Item: Add preamble discussion about the meaning of “with experience and expertise.” Experience and expertise means that one has the knowledge and skills to conduct tests, has experience conducting tests, and has demonstrated success in conducting tests.

E) Change the term “noise operational controls” to “administrative controls”

FRA uses the term noise operational controls while OSHA and MSHA use the term administrative controls. These two terms are the functional equivalent. A few commenters noted that it makes little sense to create a new term; it creates the potential for confusion. In general, the commenters noted that there is a need for uniformity and consistency across Federal agencies.

There is Working Group consensus to reject this recommendation.

F) Definition of Hearing Protector

With respect to the definition of HP, one commenter noted that the first half of the definition (which is from the EPA) is clear, however the second half of the definition (“and has a scientifically accepted indicator of its noise reduction value”) is vague. See §227.5. The commenter thinks that FRA should clearly identify which rating (or ratings) it wants to use for enforcement of HP attenuation, whether NRR, NRR (SF), Method B, or something else. The commenter also suggested that FRA might want to consult with EPA regarding EPA’s reconsideration of its labeling regulation.

There is Working Group consensus to reject this recommendation.

On a related matter, another commenter suggested that FRA revise the definition of hearing protector to include the phrases “covering the ear canal opening” after the phrase “worn on the head” and “being inserted” before “in the ear canal.”

There is Working Group consensus to accept this recommendation.

III. Hearing Protection

A) Should FRA allow the use of Method B and subject-fit data?

Several commenters think that FRA should allow railroads to use a variety of methods for evaluating hearing protector noise reduction, including Method B and subject-fit data (i.e., tested according to ANSI S12.6-1997 Method B). See §227.117(a). Commenters explained that the subject fit attenuation data obtained in a laboratory provide a better estimate of the average real world attenuation data obtainable by a group of workers. Commenters also noted that the professional community has supported the adoption of Method-B procedure and the NRR (SF) computation from that data. By contrast, another commenter suggested that since there is still wide debate about Method B, railroads should have the option of following the NIOSH recommendations for derating HPs for the purpose of estimating the average workplace protection attainable by groups of HP users.

There is Working Group consensus to allow railroads to use ANSI Method B as a method of evaluating hearing protector attenuation.

Action Item: FRA will add ANSI Method B to FRA’s Part 227’s Appendix B. It will be one of the four options (listed in Appendix B) that railroads can use.

B) Commenter seeks clarification of language in §227.107

With respect to the sentence that begins “For purposes of a hearing conservation program,” one commenter asked the following question: Is the intent to prohibit any adjustment to the dose measurement, based on the hearing protector manufacturer’s published attenuation data?

There is Working Group consensus to provide the following response to the commenter’s question: “You do not adjust the dose based on the hearing protection worn by the employee.”

C) Organizational Issue in §227.115

One commenter thinks that paragraphs (a) and (c)(1) are redundant. The commenter suggests that FRA reorganize and simplify this concept. Also, this commenter thinks that paragraph (b)(2), which addresses communication ability, would better work as the latter part of paragraph (d), which talks about HP selection and attenuation levels.

There is Working Group consensus to reject this recommendation and leave the language in the NPRM.

D) Define “variety of suitable hearing protectors” and “range of attenuation levels”

Several commenters requested that FRA better define the meaning of “a variety of suitable hearing protectors” and “a range of attenuation levels.” See §227.115(d).

Several commenters suggested that FRA require employers to provide a minimum number of HPs, e.g., “at least four different models of HPs with an appropriate range of attenuation levels including at least two types of earplugs and one type of earmuff.” Another commenter pointed out that the issue of variety has arisen as a question under OSHA’s regulation and has required interpretation. In the commenter’s opinion, “suitable variety” refers to more than just providing HPs with a range of potential levels of protection; it also means that an employer should provide HPs with differing feels and ergonomic characteristics.

Similarly, commenters emphasized the importance of a selection that includes devices with an appropriate and adequate range of attenuation levels. One commenter noted that the FRA provision allowing a “range of attenuation levels” is helpful but is too vague. The commenter thinks that FRA should include additional guidance in the preamble. Several of these commenters provided suggested language in their comments.

There is Working Group consensus that FRA should include the following type of discussion in the preamble:

A selection of physical types to include descriptions such as roll down foam earplugs, push in foam earplugs, premolded-flanged or un-flanged earplugs, banded ear protectors, ear muffs, such that the employee can choose the devices for comfort.

Within these groups of protector types the “range of attenuation levels” must be sufficient for protection in the level of noise expected and still permit the necessary level of communication necessary for the job. It is expected that railroads will employ or consult professionals, such as Industrial Hygienists, who can guide employees in their selections so they are protected.

The Working Group is reluctant to specify a minimum number as representing “a variety” since it may be interpreted as a “floor”...only requiring, for example: “at least 3 types.”

E) Include cautions regarding HP Attenuation

One commenter noted that, based on the conclusions of the NHCA Task Force on Hearing Protector Effectiveness, FRA should include cautions about HP attenuation. Specifically, FRA should note that differences between HP ratings of less than 3 dB are not important. FRA should also note that, because labeled values of noise reduction are based on laboratory tests, it is not possible to use that data to reliably predict levels of protection achieved by a given individual in a particular environment. To ensure protection, those wearing HP for occupational exposures must be enrolled in a HCP.

There is Working Group consensus to reject this recommendation. The Working Group does not want FRA to include these cautions in the rule text, however the Working Group would like FRA to discuss them in the preamble. FRA will include the discussion in the section-by-section analysis. Also, FRA will note that much of this information is already covered in Appendix B.

F) Hearing Protection (HP) Overprotection

One commenter noted that it is well understood that employees with existing hearing loss have more problems communicating when using HPs. This commenter thinks it’s unlikely, however, that such employees would be “overprotected.” (The NRR rating might be 30 dB but the commenter doesn’t think it reduces to that level.) This commenter thinks that FRA should assume the reductions indicated in the NIOSH recommended standard document (instead of NRR). Using that assumption, FRA would find that overprotection is a minor problem and would find that the main problem is instead outfitting a population of workers who already have hearing loss, where it is a problem of bad signal to noise ratio that precludes proper communication.

Similarly, one commenter noted that the preamble makes a misleading statement when it identifies benefits that accrue if employees refrain from overuse of HP, namely reduction of the danger of infection and strengthening of overall compliance. The commenter believes that FRA should remove the references to those two benefits.

There is Working Group consensus on this issue. The Working Group makes the following recommendations.

1st: FRA should not change the existing rule text but instead should elaborate and clarify what already exists in the preamble. Also, FRA should try to convey to the commenter that FRA has already addressed this issue.

2nd: Regarding ear infections, FRA will note that, because of conflicting information, FRA can not make any conclusive statements. Overuse of HP may or may not cause ear infections. FRA will present both sides of the issue related to infection.

3rd: Regarding compliance, FRA should expand the discussion.

There was additional discussion regarding the following matters:

- *Employers should educate employees on wearing HP only where appropriate.*
- *Employers should discuss hygiene issues related to HP during training.*
- *Employers and employees want to ensure that there is not an excessive reduction in hearing (from the use of HP) such that it interferes with employee communication and with auditory cues related to job duties.*

IV. Audiometric Testing

A) AAR Concerns regarding Audiometric Testing See AAR Comments #40 & 46

The AAR requests that annual testing be based on the calendar year, instead of on 365 days. Their request revolves around the administrative aspects of the testing.

The Working Group discussed the following points related to this issue:

- *According to the NPRM, every three years, employees would be required to receive audiometric testing and training. Employers would have to offer the test annually but only require employees to take it once every three years.*
- *The AAR explains that there are many administrative difficulties with the optional annual testing requirement. They need some more flexibility because of: the transient workforce, the mobile nature of the railroad workforce, some communities don't have clinics available and are dependent on the mobile vans, etc. The AAR says it's tough to be sure you cover 100% of the employees every 365 days. The AAR is looking for a cushion for those that fall through the cracks – the AAR's concerns stem from enforcement activities of the FRA.*
- *The AAR says that if the requirement is changed to calendar year, then you can push it back, say 11 months the first year, but over a period of years, it averages out to once a year. You can only push it back so far. The maximum you could push it back would be in the first year (a 23 month interval), however, you would only have 13 months on the next go-around, so the intervals would eventually catch up to each other and average out.*

- *The intent would be never to fall outside an 18-month window.*
- *Testing is paired up with other activities, such as respiratory fitting for MofW, so for the most part, the testing will stay on schedule. The AAR explains that they are looking for some flexibility.*
- *Labor requested that FRA retain the language but include a preamble discussion about allowing for flexibility.*
- *FRA noted that annual testing should be offered, but FRA also recognizes that there is a subpopulation of employees that might be tested later because they are unavailable due to non-routine situations (e.g., displaced, snowstorms, etc) and that will be offered testing within 15 months.*

There is Working Group consensus to revise the rule as follows:

Section 227.109(f):

- (1) ***Each railroad shall offer an audiometric test to each employee included in the hearing conservation program at least once each calendar year. As to any employee, the interval between the date offered for a test in a calendar year and the date offered in the subsequent calendar year shall be not more than 450 days [15 months].***
- (2) ***At least once every 36 months, the railroad shall require each employee included in the hearing conservation program to take an audiometric test.***

Preamble Language:

227.109(f)(1): Will discuss the administrative difficulties that railroads would face with a 12-month period.

227.109(f)(2): We are tracking the 3-year requirement in Part 240, so we will use the language from Part 240 (i.e., 36 months). A 36-month period is defined as 1095 days. The clock starts running on the 36-month period from the day of the employee's last required audiogram, which could be either the employee's baseline audiogram or the employee's last 36-month periodic audiogram.

B) Require annual audiometric testing

Several commenters recommended that FRA require periodic audiometric testing annually instead of the proposed interval of once every three years. See §227.109(f)(2). They suggest that this provides an opportunity for timely feedback, and studies have shown that timely feedback is an important factor in promoting the increased use of HP. Commenters also note that other federal programs conduct annual audiometric tests (e.g., OSHA, MSHA, DoD).

There is Working Group consensus to reject this recommendation. FRA will leave the proposed rule text as is.

C) Add 8000 Hz to the required frequencies for audiometric testing

Several commenters recommended that FRA require audiometric testing at the 8000 Hz frequency. See §227.111(a). Commenters explain that the information provided by the 8000 Hz threshold is valuable in determining the classic “noise notch” pattern. Clinicians must observe an audiometric notch at 4000 Hz or 6000 Hz in order to determine that hearing loss is related to noise exposure and is a work-related hearing loss. This notch cannot be calculated without observing hearing thresholds at 8000 Hz.

There is Working Group consensus to accept this recommendation.

Action Item: FRA should note in the preamble that old tests (conducted prior to the final rule & which did not include tests at 8000 Hz) will be acceptable.

V. Audiometric Test Rooms & Equipment

A) Remove all references to self-recording audiometers

Several commenters recommended that FRA remove the reference to self-recording audiometer in §227.111(c) and all of paragraph 2 of Appendix C to Part 227. Commenters noted that these audiometers are no longer produced, supported, or used.

There is Working Group consensus to accept this recommendation.

B) OSHA Appendix D for background noise levels in audiometric test rooms

The proposed rule adopts OSHA’s audiometric test room requirements including OSHA’s Appendix D. See §227.111(d) and Appendix D to Part 227. Several commenters asserted that the background noise levels found in Appendix D are too lenient, i.e., excessively high. The commenters explained that when noise levels are not controlled, clinicians do not know whether the hearing shifts are valid or if they are caused by interfering noise levels.

The commenters recommended that FRA adopt the latest ANSI standard on this matter - ANSI S3.1-1999. (The commenters also pointed out that this was the only place in the rulemaking where FRA did not adopt the latest ANSI standard.) Two commenters acknowledged that there is some concern that the latest ANSI standard may be too stringent at 500 Hz. They recommended that FRA adopt the ANSI standard levels with an adjustment of 3.5 dB at 500 Hz for an allowable sound pressure level of 24.5 dB in that octave band.

By contrast, one commenter noted that the proposed standard from OSHA is workable and that it recognizes the real world environment. Finally, another commenter stated that FRA should use Table D1 in OSHA’s regulation for the purpose of allowable ambient noise levels in sound rooms during audiometric testing.

There is Working Group consensus to reject this recommendation.

The Working Group discussed the following points related to this issue:

- *Switching from one level to the next (i.e., between OSHA's Appendix D standard and the latest ANSI standard) would create a problem with the mobile vans.*
- *Several members think that FRA should not deviate from the OSHA standard.*
- *AAR reps are not aware of anything on the market that is set up to the ANSI standards. Currently, mobile van vendors set their equipment to the OSHA standard.*
- *Test conditions may change during the test when using mobile vans. Vans are already set to the OSHA standard that if this changes it will alert this change.*

C) Permit the use of insert earphones for audiometric testing

FRA's proposed rule does not directly permit hearing conservationists to use audiometers with insert earphones. See §227.111. Several commenters think it should. The commenters note that insert earphones provide significant advantages in testing patients in areas with background noise levels, those with asymmetrical hearing loss, those with collapsing canals, and in the reduction of cross-contamination in cases of external ear canal infections.

There is Working Group consensus to accept this recommendation. FRA should allow, but not require, the use of insert earphones.

Action Item:

FRA will add preamble discussion about insert earphones. Also, FRA will add guidelines for the use of insert earphones in a mandatory appendix.

The Working Group discussed the following points related to this issue:

- *The Working Group thought insert earphones should be allowed. FRA should add specific language to the rule, making it clear that employers can use insert earphones.*
- *The Working Group wants to permit their use but not require it.*
- *Going back and forth between ANSI and OSHA is not consistent and would create two different tests.*

D) Remove conditional phrase regarding pulsed-tone audiometers in Appendix C

In Appendix C to Part 227, FRA states that "In the event that pulsed-tone audiometers are used..." A few commenters noted that such a phrase is unnecessary, because pulsed-tone audiometers *are* routinely used.

There is Working Group consensus to accept this recommendation.

E) Audiometric Test Equipment – Update ANSI Reference

FRA's proposed rule states that audiometric tests shall be conducted with audiometers that meet the specifications of ANSI S3.6-1996 or its successor. See §227.111(b). One commenter noted that this ANSI standard has been supplanted by S3.6-2004 and recommended that FRA update the standard accordingly.

There is Working Group consensus to accept this recommendation. FRA will update this ANSI standard. Also, FRA will include a provision that FRA will incorporate future updated ANSI (or other national consensus standards) as they become effective – after public notice.

VI. Audiometric Baselines & Follow-up

A) Shorten 90-day retest period for employees who are found to have an STS

A few commenters were concerned about the provision in the proposed rule that provides a railroad with 90 days to obtain a retest after measuring a STS. See §227.109(g)(2). Commenters felt that FRA should follow the lead of OSHA and MSHA and adopt a 30 day retest period. One commenter suggested that FRA follow NIOSH’s recommendation for an immediate retest. If the retest does not show the same shift, the retest becomes the test of record and there is no need for a confirmatory test within 30 days. That commenter also recommended that FRA require confirmation audiograms again within 30 days of any monitoring or retest audiogram that continues to show an STS.

There is Working Group consensus to reject this recommendation.

B) Revise follow-up procedures for a non-persistent STS

The proposed rule states that if subsequent audiometric testing of an employee whose noise exposure is less than an 8-hour TWA of 90 dB(A) indicates that a STS is not persistent, the railroad shall inform the employee of the new audiometric interpretation and may discontinue the required use of HP for that employee. See §227.109(h)(3). A few commenters objected to this provision. They believe that employees who show a non-persistent STS but are exposed to noise levels between 85-90 dB(A) should be required to continue wearing HP, because the very purpose of the retest is to highlight the occurrence of a TTS before it becomes a PTS. These commenters noted that merely documenting a TTS serves no purpose in preventing hearing loss. Appropriate actions, such as the use of PPE, are essential to preventing PTS.

There is Working Group consensus to reject this recommendation.

C) Use NHCA Guidelines for Audiometric Baseline Revision instead of OSHA provision

The proposed rule adopted its baseline revision provision from OSHA. See §227.109(h)(3)(i). Several commenters suggest that FRA should instead use the NHCA Guidelines. The NHCA created the Guidelines in response to frustrations among hearing conservationists who needed clarification of what OSHA intended in its regulation. The Guidelines offer specific recommendations concerning when audiometric baselines should be revised. Commenters noted that these Guidelines have been “commonly accepted and offer a standardized method of determining what baselines will be revised.”

There is Working Group consensus to accept this recommendation.

Action Item: FRA will adopt document #35 from the NHCA as a mandatory appendix to Part 227. FRA will make minor changes to the document as necessary (e.g., change references from OSHA to FRA). The appendix will become effective two years from the effective date of the final rule.

D) Revise 6-month new employee baseline audiogram provision

A few commenters oppose FRA's recommendation to provide railroads with 6 months to obtain baseline audiograms for new employees. See §227.109(e)(1). They recommended that an audiometric test be completed prior to an employee working in an environment where sound levels will be 85 dB(A) or preplacement. Where mobile vans are used, they recommend that baseline audiograms are obtained within 90 days. They point out that it is in the employer's best interest to obtain an accurate measurement of an employee's hearing level as early as possible.

On a related matter, one commenter recommended that existing employees that do not have a baseline audiogram should be treated as new employees for the purposes of this rule. For existing employees who have a baseline audiogram, the commenter agrees with FRA's proposal to grandfather certain pre-existing baseline audiograms.

There is Working Group consensus to reject this recommendation. FRA should leave the language as it is, because the present language addresses the commenter's concern. Also, FRA should include some preamble language to note that pre-employment tests can be used as baseline tests; some Working Group members noted that it is already common practice to use pre-employment tests as baseline tests.

E) Allow the use of HP in lieu of a 14-hour quiet period but with stipulations

A commenter agreed that FRA should allow the use of HPs in lieu of a 14-hour quiet period but put stipulations on the requirement: Within 5 days prior to the test 1) the employee whose hearing is to be evaluated receives individual refresher training in the use of his or her HPs, 2) the condition of the HP to be worn is checked and found satisfactory, and 3) the HP selected is either an earmuff or a foam earplug or a device that has been fit tested and shown to provide adequate protection to reduce exposure to levels equivalent to less than 80 dB(A). See §227.109(e)(3).

There is Working Group consensus to reject this recommendation.

F) FRA should not use the OSHA age correction charts found in Appendix F to Part 227

A few commenters noted that FRA should not use the OSHA method for permitting use of age corrections when computing STS. Commenters noted that OSHA's Appendix F tables are racially biased and are discriminatory against persons older than 60 years old. In addition, one commenter stated that if FRA elected to use age correction charts to compute STS, then FRA should make some adjustments to its provisions, such as applying age correction values based on the 84th or 98th percentiles, using tables that have representative age-related changes for both genders and all major ethnic groups, and

using tables that accurately represent age-related hearing changes for workers older than 60.

There is Working Group consensus to reject this recommendation and leave the current language as is. The Working Group felt that FRA should continue to follow OSHA's lead on this matter – OSHA continues to use age correction charts, so FRA should continue to use age correction charts. When, and if, OSHA changes its method, then FRA should consider changing its method.

VII. Training

A) Require annual hearing conservation training

A few commenters recommended that railroads conduct hearing conservation training annually instead of at the proposed interval of once every three years. See §227.119(a)(2). Some explained that motivation and education of employees is a key element to hearing conservation success. Another noted that due to the acquisition, retention, and application of new knowledge and skills, training would be more effective if presented annually.

There is Working Group consensus to revise the proposed rule the same way that the Working Group revised the periodic audiometric testing requirement.

B) Require interactive and face-to-face training

One commenter advocated for interactive training, explaining that it is the most effective way to communicate a message. In addition, the commenter believes it is imperative that initial training is face-to-face. The commenter acknowledged that face-to-face training would not always be possible given cost constraints, however, he stated that training other than face-to-face could be effective as long as there is an opportunity (e.g. either on site or by phone) by which employees could get their questions answered.

There is Working Group Consensus to reject this commenter's recommendation.

The Working Group discussed the following points related to this issue:

- *Some Working Group members felt that face-to-face training is the best and preferred method for training.*
- *Other Working Group members pointed out that there are other training methods available that provide a level of interaction with "content experts" similar to the kind available in face-to-face sessions.*
- *FRA enforcement activities will evaluate the efficacy of the railroad's training programs through, among other things, interviews with employees. The purpose of the interviews is to discern the employee's understanding of occupational noise issues.*

C) Require initial training to occur prior to an employee's exposure to hazardous noise

One commenter noted that FRA should require employees to receive training prior to exposure to hazardous noise. This commenter explained that depending on the noise exposure, permanent hearing loss can occur within 6 months. See §227.119(b)(1).

There is Working Group consensus to reject this recommendation. The Working Group felt that this initial training was not necessary, because employees are otherwise protected during this initial, interim period. Note: OSHA is silent on this issue and one could argue that FRA is stricter on training for new employees. The Working Group noted that new employees typically receive initial training when they begin their job and before they are exposed. Also, new employees that are covered by the regulation and are included in the railroad's Hearing Conservation Program will receive HP training when the railroad issues HP to them.

D) Amend requirement for new employee training to “within 6 months of” tour of duty
The proposed rule provides that the railroad shall provide training “for new employees, within six months after the employee’s first tour of duty...” See §227.119(b)(1). A commenter requested that FRA change the “after” to “of,” which would permit an employer to provide the training before or after the employee’s first tour of duty.

There is Working Group consensus to accept this recommendation.

E) Base the training requirements on the calendar year

A commenter requested that FRA base the hearing conservation training requirement on a calendar year and not 365 days from the last training. See §227.119(a)(1) & (2).

There is Working Group consensus to use the same approach and language that the Working Group recommended for the periodic audiometric testing section.

VIII. Part 227 Recordkeeping

A) Strong opposition to records retention provision for exposure measurement records

Several commenters expressed strong opposition to FRA’s proposal that railroads retain exposure measurement records for 3 years and employee audiometric test records for the duration of an employee’s employment. The commenters recommended that FRA retain both sets of records for the duration of the affected employee’s employment plus 30 years. These commenters noted that this would be consistent with other health record maintenance standards.

There is Working Group consensus to accept this recommendation. FRA will modify the rule text and preamble accordingly.

B) Additional Recordkeeping Requirements

With respect to audiometric testing, a commenter recommended that railroads also include the following information in audiometric test records: 1) model & serial number

of the audiometer used, 2) measurements of background sound pressure levels in the test room, and 3) name of individual supervising the hearing conservation program.

With respect to training records, a commenter recommended that in lieu of maintaining copies of training materials, FRA should require railroads to document the date, content, attendees, and faculty for each training program.

There is Working Group consensus to accept issue #1 and reject issues #2 and #3.

The Working Group discussed the following points related to this issue:

- *The regulation already requires some of this information to be recorded, though in other locations.*
- *For example: 1) Model and serial number is already printing out on the audiogram. 2) While not specifically addressed, calibration is done and if it falls outside the programming, the test is stopped. 3) Tests are already signed by the supervisor – that is the equivalent to requiring an employer to include an individual’s name on a record.*

There is Working Group consensus to reject issue #4 (second paragraph – regarding training). The Working Group noted that the intention of this recommendation is accomplished by other requirements in the regulation.

C) Potential compliance problems with the positions & persons recordkeeping reqs

The proposed rule requires railroads to “maintain a record of all positions or persons or both designated by the railroad to be placed in a HCP.” One commuter railroad noted that the bidding and bumping process employed at their railroad would make compliance with this requirement administratively burdensome and costly.

There is Working Group consensus to reject this recommendation. The Working Group noted that a railroad would be compliant if they simply listed the positions OR the names. Note: The preamble is missing one word related to this it should say “and/or.” That may be what generated this comment.

IX. Part 229 Performance & Maintenance Standards for Locomotives

A) Static noise testing for “new” locomotives

One commenter recommended that FRA require manufacturers to conduct static noise tests on *all* new locomotives in a fleet, not just a percentage of the locomotives. See §229.121(a)(1).

Another commenter suggested that 85 dB(A) requirement for “new” locomotives serve as a minimum requirement. See §229.121(a)(1). The commenter explained that locomotives that had already tested to lower levels should be required to maintain those lower levels. The commenter pointed out that “it is well known that locomotives with an isolated cab achieve noise levels well below 85 dB(A)” and so these locomotives should be required to maintain that low level.

There is Working Group consensus to reject the first recommendation (paragraph 1). The Working Group recommended that FRA provide additional explanation of what, in statistical terms, a confidence level is, and how the sampling process works.

There is Working Group consensus to reject the second recommendation (paragraph 2). The Working Group is satisfied with the previous consensus that was achieved for the NPRM.

B) Records retention requirements for “excessive noise reports”

The proposed rule requires railroads to keep excessive noise reports for 92 days if they are made pursuant to §229.21 and 1 year if they are made pursuant to §229.23. See §229.121(b)(1)(i) & (ii). One commenter suggested that FRA should require railroads to keep these records for longer periods. The commenter noted that the current requirement is inadequate, especially given the current computer technology. The commenter recommended that railroads keep these records with the general records of the locomotive and keep them for the life of the unit. With those records, railroads could identify locomotives that have chronic noise problems.

There is Working Group consensus is to reject this recommendation.

Action Item: FRA will add a discussion regarding its need to account for additional and total paperwork burdens, per the Paperwork Reduction Act.

The Working Group discussed the following points related to this issue:

- *The Working Group does not want to treat repair items related to excessive noise reports any differently than other issues in Part 229. Some items identified here are already required to be repaired and documented under 229.*
- *Some members of the industry noted that they do retain repair records for extended periods of time.*

By contrast, another commenter (a commuter railroad) noted that the proposed retention requirement for excessive noise reports would result in an administrative burden and significant cost for its railroad. This commenter also raised the issue of recreating reports and noted that recreating some of the reports of crew members might be impossible during static testing, thereby resulting in an additional maintenance burden.

There is Working Group consensus to reject this recommendation. The Working Group noted that the commenter needs to review the preamble discussion related to this issue. The Working Group agreed to retain the language that was developed during the RSAC process. The Working Group noted that the equipment maintenance requirements, found in 229.121(b), do not require a static test.

C) Set the same standard for maintaining locomotives as for building new locomotives

The proposed rule requires “new” locomotives to average less than or equal to 85 dB(A) when tested for static noise and prohibits alterations that cause the average sound level to

exceed 82 dB(A). See §229.121(a)(1) & (2). One commenter suggested that FRA set the limit for maintenance alterations at the same level as for new equipment, i.e., 85 dB(A).

There is Working Group consensus to reject this recommendation. The Working Group agreed to retain existing language as presented in 229.121 (a)(1) - (2).

D) Identify what triggers an excessive noise report

The proposed rule requires railroads to train employees on how to determine what can trigger an excessive noise report. See §227.119(c)(10). One commenter is seeking clarification on what will be adequate to satisfy this requirement.

Working Group consensus is not necessary, because the commenter withdrew the comment. The AAR made this comment on pg 6, Section E (Training Program) of their comments. At the meeting, the AAR noted that the NPRM (pg 35190) sufficiently defines excessive noise report.

E) Regular and routine maintenance of locomotives is important

A few commenters noted that regular and routine locomotive maintenance (e.g., window seals, minor insulation) can reduce the noise level in locomotive cabs.

There is Working Group consensus to reject this recommendation. The Working Group stated that they want to keep the existing language in 229.121 (b). The Working Group suggested that FRA should add some more explanation to the preamble about the current 229 requirements.

F) NEW: Correction Regarding Appendix H Procedures

Harvey Boyd, EMD, raised an issue regarding Part III of Appendix H. See Federal Register, page 35191. The NPRM requires sound meters to measure the L_{av} . Most sound meters do not have that capability; they instead measure the L_{eq} . In order to comply with the NPRM, railroads would have to purchase new equipment. The Working Group determined that the L_{eq} was a more appropriate metric than the L_{av} .

There is Working Group consensus to replace L_{av} with L_{eq} in Appendix H of Part 229.

X. Miscellaneous

A) Train Horn Location

A few commenters raised the issue of the train horn (and bell) noise. They noted that train horn noise can be particularly harmful to on-board personnel. One commenter suggested that FRA mandate the relocation of cab roof-mounted horns to the back of the cab on the engine compartment hood.

There is Working Group consensus to reject this recommendation.

B) Headsets as HP

Several commenters asked why FRA does not require the railroad industry to use noise canceling headsets with built-in communication microphones, similar to that used on airplanes. Employee commenters wrote of the benefits of these headsets, noting that the headsets keep out locomotive noise and make it easier to hear the dispatcher. By contrast, the AAR noted that they did not object to the use of radio headsets but would object to FRA encouraging use of this technology. The AAR wrote that headsets have been poorly received by most crews.

There is Working Group consensus to reject this recommendation. The Working Group does not want to mandate the use of headsets, however, the Working Group acknowledged that headsets should be permitted if the railroad offers them as part of the railroad's HCP.

C) Hierarchy of Noise Controls

Several commenters noted that FRA's proposed rule departed from the "traditional" hierarchy of noise controls, which is used by OSHA and MSHA. These commenters noted that FRA should base its rule on the widely accepted concept of a hierarchy of controls. The preferred methods of lowering exposure to hazardous noise are: engineering controls, administrative controls, and hearing protection.

As a related matter, one commenter expressed concern that FRA had not mandated engineering controls as the primary strategy to combat workplace noise. The commenter explained that low-frequency noise is prevalent in the railroad industry and that the traditional noise reduction techniques used in the rule (e.g., HP) do not adequately combat low-frequency noise. The commenter recommended that FRA embrace engineering controls and that FRA require the use of the latest, most advanced commercially and economically viable engineering controls. The commenter noted that this would be consistent with OSHA and MSHA. The commenter explained that there are current, off-the-shelf technology that would adequately address low-frequency locomotive noise. The commenter is of the belief that engineering controls could be implemented at a modest cost to railroads with a significant benefit to the health and safety of railroad workers.

There is Working Group consensus is to reject this recommendation. The Working Group recommended that FRA provide additional discussion on how FRA is requiring the use of engineering controls, i.e., the NPRM's 229.121 requirements. Arguably, FRA's approach could be viewed as being more strict than OSHA for engineering controls.

D) Revise the NPRM to be based on 1998 NIOSH Criteria Document

One commenter strongly encouraged FRA to rewrite the proposed rule based on the 1998 NIOSH Revised Criteria for a Recommended Standard. The commenter believes that by choosing the OSHA model, FRA has proposed what amounts to a watered down hearing loss documentation program.

There is Working Group consensus to reject this recommendation. The Working Group noted that the commenter did not provide any data to justify the suggested NIOSH approach.

E) Employee Noise Exposure when Deadheading

One commenter noted some concern with the practice of deadheading a crew to or from a point at which they will be operating a train using transportation in a different train. Considering that the crew may ride in a locomotive (rather than a van or taxi) to access their train, they may have more than the 12 hour limit of time for noise exposure (because they may have been exposed to extra time at relatively high noise levels).

There is Working Group consensus that this comment should be addressed in the preamble. The Working Group noted that deadheading time should be included in an employee's noise dose.

The Working Group discussed the following points related to this issue:

- *When an employee is “off the clock” i.e. deadheading, he or she is still being exposed to noise.*
- *Industry representatives noted these conditions are outside normal operations.*