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CP2-HS-2002 FRev. 1A	TITLE: OCCUPATIONAL NOISE EXPOSURE AND HEARING CONSERVATION PROGRAM	Page 1 of 10

DOCUMENT CATEGORY: ☒ Administrative ☐ Technical

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REVISION/CHANGE LOG

Revision/Change Letter	Description of Changes	Pages Affected	Date of Revision/Change
FR0	Bluesheet issued	ALL	10/20/2017
FR1	Non intent revision to incorporate bluesheeting changes and to update to current format.	ALL	12/18/2017
FR1A	Process intent change to evaluate new equipment for noise.	4, 7	8/28/19

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure has been developed to provide instructions for developing, implementing, and maintaining the Four Rivers Nuclear Partnership, LLC, Paducah Deactivation & Remediation Project (FRNP) Occupational Noise Exposure and Hearing Conservation Program, and to implement applicable requirements from Scope and Application.

- 29 Code of Federal Regulations (CFR) 1910.95, *Occupational Noise Exposure*
- 29 CFR 1910.145, *Specifications for accident prevention signs and tags*
- 29 CFR 1926.52, *Occupational Noise Exposure*
- 29 CFR 1926.101, *Hearing Protection*

1.2 Scope

This procedure applies to FRNP workers at the Paducah Gaseous Diffusion Plant (PGDP).

2.0 REFERENCES

2.1 Use References

- 29 CFR 1910.95, *Occupational Noise Exposure*
- 29 CFR 1926.52, *Occupational Noise Exposure*
- 29 CFR 1926.101, *Hearing Protection*

2.2 Source References

- 29 CFR 1910.145, *Specifications for Accident Prevention Signs and Tags*
- American Conference of Governmental Industrial Hygienists, *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*
- CP2-HS-1000, *Integrated Safety Management System Description*
- CP2-HS-2000, *Worker Safety and Health Program*
- CP3-RD-0010, *Records Management Process*
- CP2-ES-0101, *Environmental Management System Description*

3.0 COMMITMENTS

None

4.0 RESPONSIBILITIES

4.1 Employee

- Notify supervision of any modifications in equipment, processes, or procedures that change the sound level.
- Notify supervision and Occupational Physician of any ear problems.

4.2 Supervisor

- Ensure Safety and Health/Industrial Hygiene (SH/IH) is notified of areas where conditions have changed that might affect the noise exposure of employees
- Ensure Safety and Health/Industrial Hygiene (SH/IH) is notified of new equipment or processes that will require baseline noise surveys. Ensure that employees under his/her supervision are informed of hazardous noise areas and equipment Chg A
- Implement and/or enforce the use of engineering and administrative controls, including procurement of equipment that does not generate hazardous noise, when feasible

4.3 Safety and Health/Industrial Hygiene Professional

- Provide technical guidance and regulatory interpretations to ensure consistent implementation of the Hearing Conservation Program
- Serve as a liaison between FRNP management and DOE on company-wide matters relating to occupational noise exposure and hearing conservation
- Assist line management with implementation of the Hearing Conservation Program.

4.4 Occupational Physician

- Maintain and implement an audiometric testing program
- Ensure medical qualifications required by 29 CFR 1910.95, *Occupational Noise Exposure*, are met

4.5 Training Professional

Work with SH/IH to develop, implement, and maintain training

5.0 GENERAL INFORMATION

None

6.0 PROCEDURE

6.1 Hearing Conservation Activities

Employee

6.1.1 **When** required, wear approved hearing protection,

6.1.2 Notify supervision of any modifications in equipment, process or procedures that change the sound level

6.1.3 Report ear problems (e.g., infections, soreness, etc.) to supervision and Occupational Physician

Supervisor

6.1.4 Ensure employees with an 8-hour time-weighted average exposure of 85 dBA or greater are included in the FPDP Hearing Conservation Program

6.1.5 Obtain Safety and Health/Industrial Hygiene (SH/IH) approval of all requisitions for Hearing Protection Devices (HPDs)

6.1.6 Implement and/or enforce the use of engineering and administrative controls, including procurement of equipment that does not generate noise, when feasible

6.1.7 Provide affected employees or their representatives with an opportunity to observe any noise measurements

Safety and Health/Industrial Hygiene (SH/IH) Professional

6.1.8 Develop and maintain the command media (program description, requirements, training, etc.) for the FRNP Hearing Conservation Program

6.1.9 Recommend engineering or administrative controls to reduce exposures to below 85 dBA for an 8-hour time-weighted average

6.1.10 Review specifications for new equipment to implement requirements for noise levels to be less than 85 dBA, when feasible

Occupational Physician

6.1.11 Perform baseline audiograms, annual audiometric tests, and Standard Threshold Shift audiometric retests (as required) of all individuals included in the FRNP Hearing Conservation Program

6.1.12 Fit employees with HPDs and provide training in their use

6.1.13 Ensure that physical examinations and Standard Threshold Shift (STS) investigations include the following steps:

A. Medically evaluate the hearing status of the employee, including whether a medical pathology of the ear is caused or aggravated by the wearing of hearing protection

B. Inform the employee in writing of initial systems of a STS and schedule a retest within 30 days, if necessary. Within 21 days of confirmed STS, provide written notification to the employee, responsible supervisor, and Safety and Health (S&H)

C. Request noise exposure evaluations by S&H for an employee exhibiting the symptoms of a STS

D. Determine if confirmed STS is occupationally related

E. Notify S&H when occupationally related STS occurs according to OSHA requirements for recording of injuries and illnesses

F. Refer employees suspected of having medical pathology of the ear to an audiological specialist for further evaluation, as appropriate

G. Ensure that acoustical audiometric calibrations and daily/ calibration checks are conducted in accordance with 29 CFR 1910.95, *Occupational Noise Exposure* and records are maintained by the occupational medical facility

H. Medically evaluate the hearing status of the employee, including whether a medical pathology of the ear is caused or aggravated by the wearing of hearing protection

6.1.14 Inform employee of requirement to wear HPDs

6.1.15 Refit and retrain employee in the use of HPDs and provide employee with HPDs offering greater attenuation, if necessary

6.1.16 Maintain and update the following:

- Audiometric examination records, according to 29 CFR 1910.95, Occupational Noise Exposure
- Baseline audiograms
- Audiometer calibration records
- Personal health data

6.2 Noise Monitoring and Sampling Activities Performer

Employee

6.2.1 Notify supervision of any modifications in equipment, process or procedures that change the sound level

NOTE: Avoid high levels of non-occupational noise exposure during the 14-hour period immediately prior to audiometric examinations.

6.2.2 Report to Occupational Physician for audiometric examinations

Safety and Health Professional

6.2.3 Ensure that noise dosimeters and sound level measuring instruments are properly calibrated and maintained, both prior to use and after use, according to equipment

manufacturer's specifications

6.2.4 Provide affected employees or their representatives with an opportunity to observe any noise measurements

6.2.5 Conduct sound level measurements to identify areas with high noise levels

6.2.6 **When** any of the following occur, conduct noise surveys and/or personal monitoring:

- Introduction of new equipment or processes with noise exposure potential
- A change in production process, equipment, or controls increases or decreases noise exposure potential
- Additional employees may be exposed at or above hazardous noise levels
- The attenuation provided by approved HPDs may be inadequate
- Notified by the Occupational Physician of STSs that require workplace noise exposure evaluation

Chg A

6.2.7 **When** a noise survey indicates that an employee's exposure may equal or exceed an 8-hour time-weighted average of 85 dBA, on a sound level meter, then conduct integrated monitoring on the employee and/or a representative sample of workers.

6.2.8 Integrate into noise measurements all continuous, intermittent, and impulsive/impact noise levels from 80 dBA to 130 dBA

6.2.9 Ensure each participant is notified in writing of his/her monitoring results

6.2.10 Ensure accurate records of noise and exposure measurements are maintained

6.3 Posting Signs and Labels

Supervisor

6.3.1 Notify S&H of areas/equipment with potential noise levels equal to or greater than *85 decibels* A-weighted (dBA)

6.3.2 Post high noise areas and equipment with **CAUTION** signs or labels, according to 29 CFR 1910.145, *Specifications for Accident Prevention Signs and Tags*, with wording similar to one of the following:

- Hearing Protection Required Within (Specify Distance) Feet When Operating
- Operator Must Wear Hearing Protection
- Hearing Protection Required In This Area
- Hearing Protection Required In This Area When Operating (Specify Equipment)

6.3.3 Notify the Facility Manager when the use of HPDs is required based on high noise potential in Radiation Criticality Accident Alarm System or Immediate Evacuation Zone areas

6.3.4 Ensure that approved HPDs are provided for and utilized by individuals working in a posted noise area, and replaced, as necessary

6.4 Training Activities

Safety and Health/Industrial Hygiene Professional

6.4.1 Develop and maintain the command media (program description, requirements, training, etc.) for the FRNP Hearing Conservation Program

6.4.2 Update information in the training program and provide input to the Training Organization for any modification to be consistent with changes in protective equipment, work process, and applicable regulations

Training

6.4.3 Coordinate any modifications of the Hearing Conservation training module (provided by the Occupational Medical Provider), with input from SH/IH

6.4.4 Document initial and annual training to employees included in the FRNP Hearing Conservation Program

6.4.5 Review the Hearing Conservation training program to ensure workers are provided information on the following:

- How noise affects hearing
- Approved HPDs, including:
  - Purposes
  - Fitting
  - Use
  - Care
  - Selection
  - Advantages
  - Disadvantages
- Attenuations
- Audiometric examination purpose and procedure

Supervisor

6.4.6 Ensure that employees under your supervision are informed of hazardous noise areas and equipment

Employee

6.4.7 **If** included in the FRNP Hearing Conservation Program, **then** complete initial and annual training

7.0 RECORDS

7.1 Records Generated

The following records may be generated by this procedure:

SH/IH Survey Reports

7.2 Records Disposition

Records are to be maintained in accordance with CP3-RD-0010, *Records Management Process*

ATTACHMENT A – ACRONYMS/DEFINITIONS

ACROYNMS

ACGIH	American Conference of Governmental Industrial Hygienists
CFR	Code of Federal Regulations
dBA	Decibels A-weighted
FRNP	Four Rivers Nuclear Partnership
HPDs	Hearing Protection Devices
S&H	Safety and Health
OSHA	Occupational Safety and Health Administration
SH/IH	Safety and Health/Industrial Hygiene
PGDP	Paducah Gaseous Diffusion Plant
STS	Standard Threshold Shift
USQ	Unreviewed Safety Questions

DEFINITIONS

Audiogram – A chart, graph or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Audiometer – An instrument for measuring hearing sensitivity.

Baseline audiogram – The audiogram performed within 6 months of employment compared against any future audiograms.

Decibel – A unit of measurement of sound.

Impulsive/Impact Noise – Single noises with short time constants less than 0.2 second in duration.

Noise dosimeter – An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

Sound level – A-weighted sound pressure levels measured in units called decibels (dBA).

Sound level meter – An instrument for the measurement of sound level. The meter should be set to use the A-weighted network with slow meter response.

Standard Threshold Shift (STS) – A change in hearing threshold relative to the baseline audiogram of an average of 10 decibels or more at 2000, 3000, and 4000 hertz in either ear.

Time-weighted average sound level – That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.