# CENTRAL ARIZONA PROJECT

# HEARING CONSERVATION PROGRAM

**REVISED MAY 29, 2025**

## 1.0 PURPOSE

To reduce noise exposures, Central Arizona Project (CAP) is establishing a Hearing Conservation Program (HCP) to preserve workers' hearing and eliminate the adverse effects of high noise levels at CAP worksites. In addition, this HCP will help reduce Workers' Compensation claims and protect the company's assets.

## 2.0 SCOPE

CAP will provide a safe and healthful working environment. This is achieved by utilizing facilities and equipment that have all feasible safeguards incorporated into their design. When engineering controls are not feasible, or when they are being initiated, administrative controls will be used where possible, followed by personal protective equipment.

The primary goal of this CAP HCP is to reduce and eliminate hearing loss due to workplace noise exposures at all facilities. This program includes the following elements:

1. Work environments will be monitored to identify potentially hazardous noise levels and personnel at risk of hearing impairment.
2. Environments that contain equipment that produces potentially hazardous noise must, where feasible, be modified to reduce the noise level to acceptable levels.
3. Where engineering controls are not feasible, administrative controls and/or the use of hearing protective devices will be employed.
4. Annual and periodic hearing testing will be conducted to monitor the effectiveness of this HCP. Early detection of temporary threshold shifts will allow further protective actions to be taken before permanent hearing loss occurs.
5. Initial and annual refresher training on the HCP.

The Environmental, Health & Safety (EH&S) Department is establishing a HCP that is more conservative than that required by the Occupational Safety and Health Administration (OSHA). CAP has adopted the American Conference of Governmental Industrial Hygienists (ACGIH) noise exposure limit referred to as the Threshold Limit Value® (TLV®). The current Occupational Exposure Limit at CAP is based on the most recent TLV® which is shown in table 1-1 on the following page.

**Table 1-1**

| Duration per day | CAP's Occupational Exposure Limit | CAP's Action Level |
|---|---|---|
| 12 hours | 83 dBA | 80 dBA |
| 10 hours | 84 dBA | 81 dBA |
| 8 hours | 85 dBA | 82 dBA |
| 4 hours | 88 dBA | 85 dBA |
| 2 hours | 91 dBA | 88 dBA |
| 1 hour | 94 dBA | 91 dBA |
| 0.5 hour | 97 dBA | 94 dBA |
| 0.25 hour | 100 dBA | 97 dBA |

When sound levels exceed the Occupational Exposure Limit (OEL) in Table 1-1, feasible administrative or engineering controls will be instituted. If the controls fail to reduce the sound levels to within the OEL, hearing protection will be provided and used to reduce the noise to an acceptable level. CAP employees with noise exposures equal to or exceeding the Action Level in Table 1-1 will be covered by this HCP.

## 3.0 RESPONSIBILITIES

**3.1 ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT**: The EH&S Department is responsible for developing and assisting all departments in the implementation of this HCP, including:

1. Assisting departments in acquiring engineering guidance on noise control and providing a liaison, as necessary, with noise engineers and consultants, and health and safety consultants.
2. Providing initial and periodic training for all affected employees.
3. Conducting periodic noise surveys of CAP facilities to identify areas of high noise levels.
4. Assisting in procuring noise reduction material for current and future equipment.
5. Conducting studies to determine effectiveness of hearing protection in use, noise abatement actions, and this HCP.
6. Approving hearing protective devices.
7. Scheduling and coordinating audiometric testing (pre-employment and annual as applicable).
8. Maintaining audiometric test records.
9. Notifying employees of the results of their audiogram.

**3.1.1 Audiometric screening/audiograms (Shoebox)**: The EH&S team is responsible for conducting all audiograms for employees in the Hearing Conservation Program. To do this, CAP utilizes Shoebox, a contract service that provides us with the necessary hardware and software for conducting audiograms on site. Audiogram results are then reviewed by a certified audiologist employed by Shoebox.

**3.1.2 Training:** The EH&S Department is responsible for coordinating and scheduling health and safety training courses. The Centralized Learning and Development (CLD) department maintains documentation of the training courses. All training programs for hearing conservation will be prepared in accordance with this HCP.

**3.2 Managers and Supervisors:** It is the responsibility of CAP Managers and Supervisors to ensure that all employees exposed to noise have access to appropriate hearing protective devices in the work area. Managers and Supervisors are responsible for enforcing the use of hearing protective devices and engineering and administrative controls in designated hazardous noise areas. In addition, Managers and/or Supervisors should request noise surveys to be completed by EH&S whenever they have reason to believe that an area may be noisy or a change in the noise level has occurred.

**3.3 Engineering and Planning Departments:** Purchases of equipment must consider noise controls as a feature of the purchase agreement. Specifics on noise control technologies can be obtained through the EH&S department and noise consultation services.

**3.4 Employees:** Employees are responsible for wearing and maintaining hearing protective devices as instructed. Employees exposed to noise levels in excess of those in Table 1-1 must also participate in annual education and training programs and the medical surveillance program which includes audiometric testing.

**3.5 Audiology Consultant:** Through the Shoebox contracted service, all audiograms are reviewed by a Board-Certified physician to determine whether any identified hearing loss is work-related.

CAP employees with noted hearing shifts will be referred to the Audiology Consultant to identify the cause of the hearing shift and receive any recommended actions for further evaluation and/or treatment.

## 4.0 NOISE EVALUATIONS AND SURVEILLANCE PROCEDURES

**4.1 Identification of Hazardous Noise Areas**: The EH&S Senior Industrial Hygienist will identify work areas within CAP facilities where noise levels equal or exceed 80 dBA. Records will be maintained by the EH&S Department and updated as necessary to

determine if any change in noise levels has occurred. Those areas where the noise levels are below 80 dBA will not be routinely monitored.

Signs and ear plug dispensers will be posted at the entrance to any work area where noise levels exceed 80 dBA. Personnel working in these areas will have hearing protection supplied to them, be instructed in its proper use, and be required to wear hearing protection.

**4.2** **Re-monitoring for Noise**: All areas where noise levels equal or exceed 80 dBA will be re-monitored if there is a significant change in equipment that could impact noise levels.

Any area with noise levels that equal or exceed 84 dBA will be re-monitored whenever there is a change in production process, equipment, or controls. This re-monitoring will evaluate the effects of the changes to determine if noise levels have increased or decreased since the last monitoring. Areas where the noise levels have dropped below 80 dBA due to alterations in equipment, controls, or process changes will be eliminated from the monitoring program.

## 5.0 NOISE CONTROL METHODS

**5.1** **Engineering and Administrative Controls**: The primary means of reducing or eliminating worker exposures to hazardous noise is through engineering controls. Noise surveys conducted by the EH&S Department identify areas where hazardous noise levels occur within CAP operations. Written reports on the noise surveys will provide recommendations on various engineering controls that will reduce the noise levels.

Administrative controls are defined as changes in the work schedule or operations which reduce noise exposure. If engineering solutions cannot reduce the noise to acceptable levels, administrative controls such as increasing the distance between the noise source and the worker, or rotation of jobs between workers in the high noise area should be used.

**5.2** **Personal Protective Equipment**: Hearing protective devices (ear plugs, muffs, etc.) will be the permanent solution only when engineering or administrative controls are not considered feasible.

**5.2.1** **Types of Hearing Protective Devices:** Hearing protective devices include the following:

1. **Insert Type Earplugs**: A device designed to provide an air-tight seal within the ear canal. There are three types of insert earplugs: pre-molded, formable, and custom earplugs.

2. **Earmuffs:** Earmuffs are devices which surround the ear to reduce the level of noise that reaches the ear canal. Special earmuffs can be provided that attach to hardhats and other pieces of protective equipment and still maintain their effectiveness.

**5.2.2 Selection of Hearing Protective Devices:** Employees will be given the opportunity to select hearing protective devices from a variety of suitable ones provided by the EH&S Department. Combinations of ear plugs and earmuffs may be needed in certain high noise environments. Employees enrolled in the HCP will undergo earplug fit testing during new employee orientation to ensure a proper fit and insertion technique.

**5.2.3 Fitting and Issuing of Hearing Protective Devices:** The key issue in an effective HCP is the fitting and issuing of Hearing Protection Devices (HPDs). The issuance of HPDs is handled through the Supervisors at each work site. The EH&S Department has evaluated the noise environments at each facility and is responsible for selecting hearing protective devices (foam inserts, disposables) based on the noise type, level, and worker preference. Instruction on proper use and care of earplugs and earmuffs will be provided whenever HPDs are dispensed.

**5.2.4 Maintenance of Hearing Protective Devices:** The effectiveness of HPDs can only be maintained if the devices are maintained in a clean, sanitary condition. Preformed PVC plastic plugs and earmuffs are designed to be washed and reused. Keep HPDs clean to maintain their ability to reduce noise.

1. Reusable earplugs, such as the triple flange devices can be washed in lukewarm water using hand soap, rinsed in clean water, and dried thoroughly before use. Cleaning should be done as needed. Replace any plugs that do not look new.
2. Earmuff cushions should be kept clean. Many earmuffs have detachable cushions on the ear cup which can be removed, cleaned in mild soapy water and returned to the muff. Use caution not to get water inside of the cup.

## 6.0 MEDICAL SURVEILLANCE

Employees in CAP's HCP will undergo regular hearing exams.

**6.1** **Audiometric Testing**: The EH&S team has the responsibility for administering the audiometric testing portion of CAP's Hearing Conservation Program. Annual retesting will be performed for all personnel enrolled in the program.

**6.1.1** **Baseline Audiogram:** The baseline audiogram must be obtained within the first 30 days of employment at CAP, ideally, within the first week of employment. To prepare for this audiogram, the employee should have no noise exposures for at least 14 hours prior to testing. Workers should avoid any loud activities that could shift their hearing prior to the audiogram.

**6.1.2** **Annual Audiogram:** Annual audiograms will be conducted at the beginning of the regular work shift prior to employees receiving workplace noise exposure. Employees showing a standard threshold shift (STS) will be evaluated with respect to noise exposure patterns on and off the job; use of HPDs; and workplace noise exposures. Efforts to reduce noise exposure will also be discussed and implemented if necessary. Employees showing an STS on their annual audiogram will be scheduled for a confirmation audiogram.

**6.2** **Confirmation Audiogram:** When the annual audiogram indicates an OSHA STS (with age correction), a confirmation audiogram will be conducted. This confirmation audiogram must be conducted within 30 days of the posting of the annual audiogram results. The confirmation audiogram will be conducted by the CAP EH&S group and should be preceded by at least 14 hours of "quiet" time before testing.

**6.2.1** If the confirmation audiogram does not show an STS, no further action is necessary, and no hearing loss is recorded on the OSHA 300 log.

**6.2.2** If the confirmation audiogram confirms an STS, the shift will be recorded on the OSHA 300 log. The confirmation audiogram results will also be reviewed by the SHOEBOX audiological medical team.

**6.3** **Review by Shoebox audiologist:** All confirmation audiograms confirming an STS will be reviewed by the Shoebox certified audiologist to determine whether the STS is the result of workplace noise exposure.

**6.3.1** If the SHOEBOX audiologist determines that the hearing loss (STS) is caused by exposure to workplace noise, the employee's name will be left on the OSHA 300 log. The baseline audiogram will be reset according to the direction of the Shoebox report, and Risk Management will be notified of a possible Workers' Compensation case.

**6.3.2** If the Shoebox audiologist states that the STS is not caused by workplace noise the employee's name will be lined out on the OSHA 300 log. The employee will be advised to follow up with competent medical care at his/her own expense (and through CAP's medical insurance program, if applicable). The employee's baseline will be reset.

**6.3.3** If the SHOEBOX audiologist cannot make a conclusive determination as to whether the STS is due to workplace noise exposures, then the following will guide further evaluations (in all cases the employee's baseline will be reset):

**6.3.3.1** If the audiologist indicates that the STS may be due to workplace noise *or* that he cannot decide as to the cause of the STS, then EH&S will arrange for an MRI and pay for the procedure and any follow up.

**A**. If a review of the MRI indicates the hearing loss was due to workplace noise, the illness will be left on the OSHA 300 log.

**B**. If a review of the MRI indicates a medical cause for the hearing loss, the illness will be lined out on the OSHA 300 log. The MRI and the doctor's report will be turned over to the employee for further follow up with a specialist of the employee's choice. The employee will not have to reimburse CAP for the cost of the MRI/evaluation but will be responsible for any further evaluations or medical treatments.

**6.3.3.2** If the audiologist indicates that the STS may not be due to workplace noise then the employee will be instructed to make their own arrangements for the MRI (if the employee desires).

**A**. If a review of the MRI finds no medical indication for the hearing loss and the consulting otolaryngologist determines that the loss is due to workplace noise, then the illness will be left on the OSHA 300 log. CAP will assume responsibility for the STS as an occupational illness and reimburse the employee for any out-of-pocket medical expenses related to the MRI. EH&S will notify Risk Management of a possible Workers' Compensation case.

**B**. If a review of the MRI indicates a medical cause for the hearing loss, the illness will be lined out on the OSHA 300 log and the employee will continue to be responsible for any costs associated with the MRI and any further evaluation or treatment.

**6.4** **Exit Audiogram:** Employees enrolled in the HCP will be offered an exit audiogram upon reassignment to a non-noise hazard area or upon termination from CAP, including retirement. The exit audiogram will be scheduled by the EH&S Department prior to the last date of service to the company. The employee should have at least 14 hours of quite time prior to this exit audiogram to ensure accurate results. The exit audiogram results will be provided immediately by email to the employee.

**6.5** **Information to employees**: Employees will be provided with a copy of the results of all audiograms and other appropriate information.

## 7.0 EMPLOYEE INFORMATION AND TRAINING

The information and training program will provide information about the adverse effects of noise and how to prevent noise-induced hearing loss. At a minimum, all new employee and annual refresher training will cover the following topics:

1. Recognizing hazardous noise.
2. Effects of noise-induced hearing loss.
3. Symptoms of overexposure to hazardous noise.
4. Hearing protection devices - advantages and limitations.
5. Selection, fitting, use, and maintenance of HPDs.
6. Purposes of the Medical Surveillance Monitoring and explanation of how audiograms are recorded and maintained.
7. Explanation of noise measurement procedures.
8. Hearing Conservation Program requirements.

All personnel identified for inclusion in the Hearing Conservation Program should receive a minimum of one hour of initial instruction in the requirements of the program during New Employee Orientation with the EH&S Department. Annual refresher training will be provided.

## 8.0 PROGRAM EVALUATION

Periodic program evaluations will be conducted to ensure compliance with federal and state regulations and to review the effectiveness of CAP's Hearing Conservation Program.

## 9.0 RECORDKEEPING

Records of noise surveys, noise dosimetry, training, and audiometry are required to be kept for specific periods of time. Table 9-1 lists the location of the required records and the time period that CAP will maintain the records. At the expiration of the allowed time period, the records

will be destroyed by secured shredding or will be archived by scanning and storage on Content Server.

**Table 9-1 – CAP Recordkeeping Requirements**

| Record | Location | Retention Period |
|---|---|---|
| Medical Evaluations and Audiograms | SHOEBOX, Content Server, and Cority Computer Software | Duration of the employee's employment and 30 years thereafter. |
| Training Records | CAP Learning Center | 30 years after completion of training class. |
| Hearing Conservation Program Manual, SOPs, etc. | Safety & Health Department – Content Server | For 5 years after a revision or modification to the current document. |
| Hazard Evaluations, Noise Surveys, Dosimeter Data | Safety & Health Department – Content Server | For 30 years after completion of the field survey. |
| Program Evaluations and Audits | Safety & Health Department | For 5 years after completion of the evaluation or audit. |
| Documentation of Audiometric Calibrations and Background Noise Levels | Safety & Health Department – Content Server | For 30 years after the completion of the calibration or noise measurement. |