



## **2600SEG215 HEARING PROTECTION STANDARD**

### **1.0 PURPOSE**

Permanent hearing loss may result from exposure to industrial noise. To prevent hearing injuries, the Panama Canal Authority (ACP) implemented a Hearing Protection Program to monitor the noise level at the workplace, evaluate the exposure that employees are subject to, and reduce noise levels or provide adequate protection.

### **2.0 BACKGROUND**

This Standard replaces the safety policy and procedures contained in Appendix K of the Personnel Manual of the former Panama Canal Commission (*PCPM*), Chapter 790.

### **3.0 SCOPE**

This Standard applies to all ACP personnel, floating equipment, contractors, and third parties located within the facilities, industrial shops, and areas under ACP responsibility.

### **4.0 LEGAL FOUNDATION**

This Standard is established pursuant to Agreement No. 12 of the Board of Directors of the Panama Canal Authority, Risk Control and Occupational Health Regulations, Chapter I, Articles 8 and 16.

### **5.0 DEFINITIONS**

**5.1** dBA: *decibel A weighted*: Noise level in decibels on the A scale.

**5.2** Time Weighted Average Noise: The average noise level over a specific period -- eight hours during a work day -- for fluctuating or intermittent noise is equivalent to the average of the different noise levels in their respective durations for the total exposure period; and for continuous or stationary noise, it is equivalent to the noise level that remains constant. It is reported in dBA (TWA).

### **6.0 GENERAL**

#### **6.1 ELEMENTS OF THE HEARING PROTECTION PROGRAM**

##### **6.1.1 Noise Measurement and Exposure Analysis**

Work areas and personnel will be periodically monitored to identify noise sources and exposure analysis in ACP facilities and locations where noise levels exceed 85 dBA.

##### **6.1.2 Engineering Control of Hazardous Noises**

The most effective control method is reducing noise at its source and/or deviating and absorbing noise in the work area. Generally, design control is less expensive than the subsequent modification of the equipment that generates noise. For architectural design of new work areas and for acquisition of new equipment, noise reduction must be one of the targets of the specifications.

##### **6.1.3 Audiometric Test**

The Health, Wellness and Labor Welfare Unit (RHSS) performs annual audiometric tests for employees exposed to a time weighted average noise greater than 85 dBA during the workday.

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**6.1.4 Personal Protective Equipment (PPE)**

The use of hearing protection is mandatory for employees exposed to a time weighted average noise level greater than 85 dBA during the workday. For noise levels greater than 105 dBA or when working with pneumatic tools, workers shall wear earplugs and earmuffs for adequate protection.

**6.1.5 PERMISSIBLE NOISE EXPOSURE LEVELS WITHOUT HEARING PROTECTION EQUIPMENT (PPE)**

<b>MAXIMUM TIME ALLOWED WITHOUT HPE (8-hour workday)</b>	<b>NOISE LEVEL (in dBA)</b>
<b>8 Hours</b>	<b>85</b>
<b>7 Hours</b>	<b>86</b>
<b>6 Hours</b>	<b>87</b>
<b>5 Hours</b>	<b>88</b>
<b>4 Hours</b>	<b>90</b>
<b>3 Hours</b>	<b>92</b>
<b>2 Hours</b>	<b>95</b>
<b>1 Hour</b>	<b>100</b>
<b>45 Minutes</b>	<b>102</b>
<b>30 Minutes</b>	<b>105</b>
<b>15 Minutes</b>	<b>110</b>
<b>7 Minutes</b>	<b>115</b>

**Note:** Notwithstanding the values established in the above table for noise exposure without hearing protection equipment, the hearing protection criteria must prevail and comply with the provisions of item 6.1.4

**6.2 FILE MAINTENANCE AND DATA ACCESS**

**6.2.1** RHSS shall maintain records of hearing tests and audiogram analysis.

**6.2.2** The field units must maintain records of training provided to employees.

**6.2.3** The Safety and Industrial Hygiene Unit (RHSH) shall maintain noise level monitoring records.

**6.2.4** Records may be made available to employees in accordance with ACP regulations.

**6.3 ASSISTANCE FROM INDUSTRIAL HYGIENE**

Questions on the application of these standards must be referred to RHSH.

**7.0 RESPONSIBILITIES**

The responsibility to ensure compliance with these standards is described in the Occupational Health and Safety Management Standard 2600SEG101. Some additional responsibilities are listed below.



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### **7.1 HEALTH, WELLNESS AND LABOR WELFARE UNIT**

RHSS is responsible for administering the audiometric test and medical examinations.

### **7.2 SAFETY AND INDUSTRIAL HYGIENE UNIT**

RHSH is responsible for managing the program and assessing its effectiveness. This includes hazard evaluation, monitoring, and exposure analysis. Industrial hygienists, floating equipment inspectors, and safety and occupational health specialists provide compliance services at the workplace.

### **7.3 ENGINEERING UNITS**

The engineers must coordinate with the industrial hygienists all projects that require noise controls or other projects with potential have hazardous noise sources, such as all commercial internal combustion engines.

### **7.4 MOTOR TRANSPORTATION AND WAREHOUSES DIVISION**

The Procurement, Warehousing and Inventory Division (FAA) staff shall coordinate with the industrial hygienists when processing requests for new equipment that could generate hazardous noise levels, such as commercial internal combustion engines. At least two types of hearing protection materials (earplugs and earmuffs), with their accessories, cleaning and sanitation products, and spare parts, as approved by RSHS, shall be kept in stock.

### **7.5 ALL MANAGERS AND SUPERVISORS**

Management is responsible for ensuring that noise levels are reduced to at least the permissible exposure levels whenever possible (**see Table in 6.1.5**); they shall also report to RSHS all changes in working conditions that increase noise exposure. Supervisors are responsible for ensuring that employees wear the correct protective equipment.

### **7.6 TRAINING**

Divisions shall provide, with the assistance of the Supervisor of Industrial and Safety Training Unit (RHSI), annual training to those employees exposed to time weighted average noise of 85 dBA or more. This training shall include the effects of noise on hearing, the purpose and use of hearing protection, and the reasons for audiometric testing. The divisions shall identify with warning signs all workplaces with noise levels above the permissible level of 85 dBA. Contractor shall provide training for their own employees.

### **7.7 EMPLOYEE RESPONSIBILITIES**

All employees that work in hazardous noise environments shall wear the protective devices provided and maintain and store them appropriately. They must undergo all scheduled medical examinations and attend hearing protection training sessions. Employees are responsible for reporting to their supervisors any change in working conditions which increase noise exposure.

## **8.0 INQUIRIES**

Any information or clarifications about the content or application of these standards must be requested in writing to RSHS.



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**9.0 EXCEPTIONS**

Deviations or temporary exceptions regarding compliance with this Standard must be requested in writing to RSHS.

**10.0 TERM**

This Standard shall remain in force until revised or amended.

**11.0 REFERENCES**

**11.1** File Retention Tables, File Management Section, ACP.

**11.2** Technical Regulation DGNTI – COPANIT 44-2000 Safety and Hygiene Conditions in Noisy Working Environments.