February 5, 2026

The 50th Annual NHCA Annual Conference

The 2026 NIOSH-NHCA-CAOHC Award Presentation

2026 Safe-In-Sound Excellence Award

ExxonMobil

Corporate - Wide

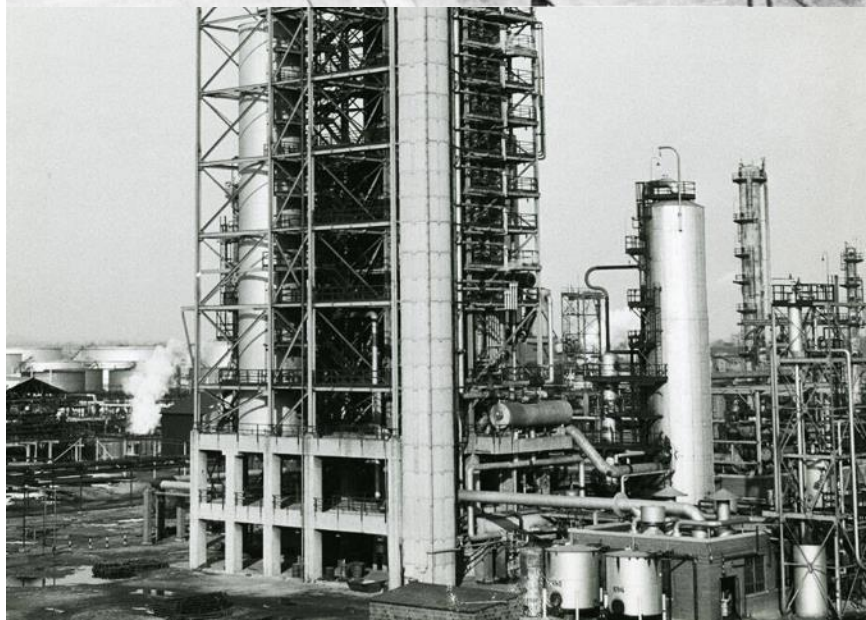
SAFE·IN·SOUND
EXCELLENCE IN HEARING LOSS PREVENTION AWARD

ExxonMobil History

- Over the past 140 years we have evolved from a regional marketer of kerosene in the U.S. to one of the largest publicly traded petroleum and petrochemical enterprises in the world.

- Today, we operate in most of the world's countries and are best-known by our familiar brand names: Exxon, Esso, and Mobil.

- We make the products that drive modern transportation, power cities, lubricate industry and provide petrochemical building blocks that lead to thousands of consumer goods.



About ExxonMobil

Creating sustainable solutions that improve quality of life and meet society's evolving needs

- Operates in more than **56 countries globally**
- **~61,000 employees** globally
- **~$349.58B in revenue** for 2024

Solving the **"and"** equation

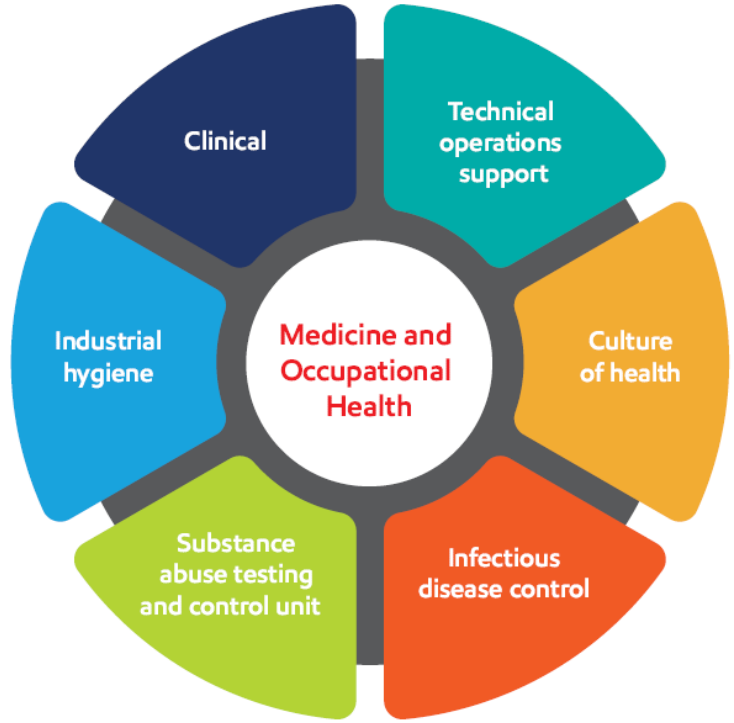
- Meeting demand and reducing emissions

Delivering solutions through three businesses:

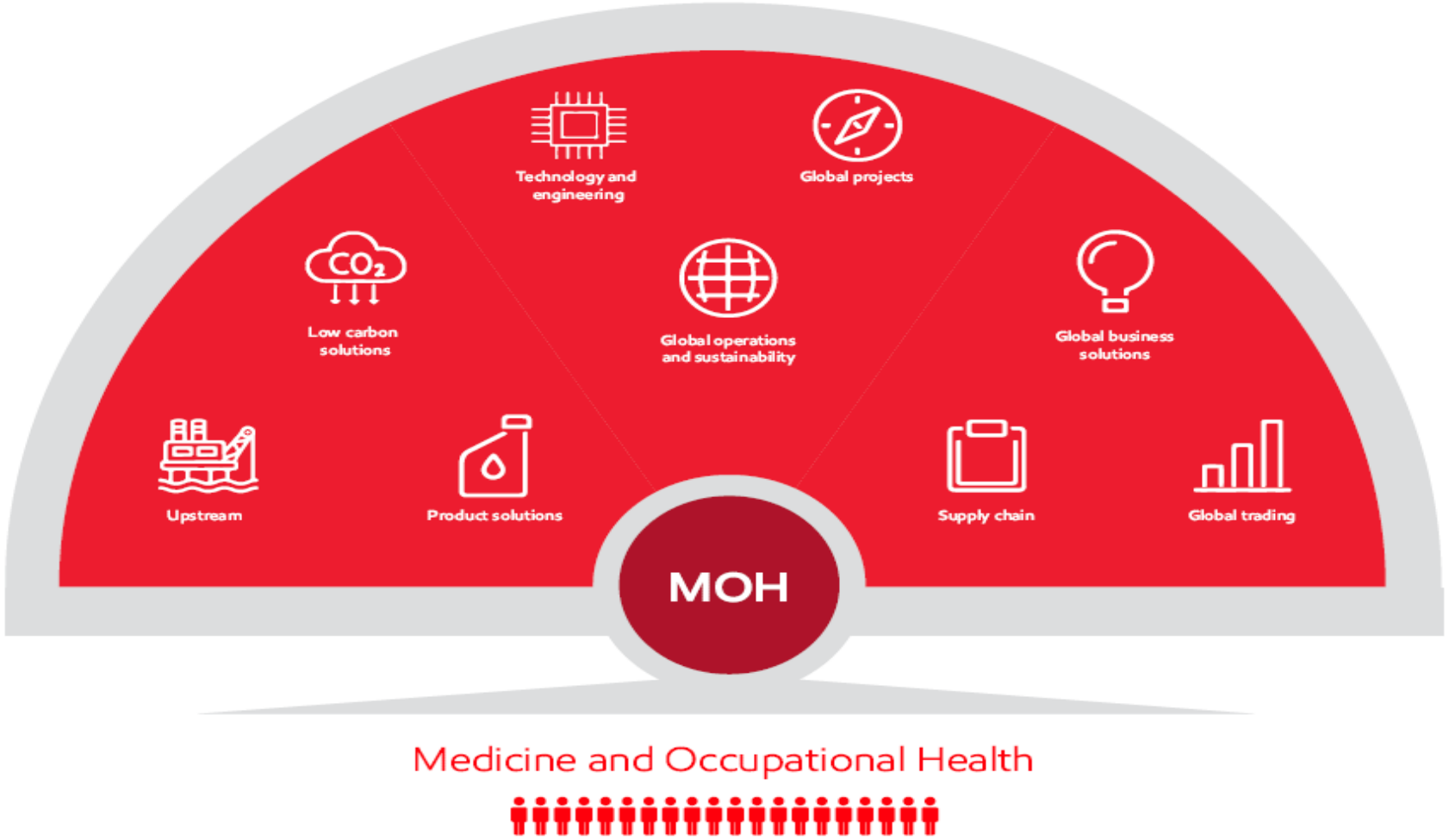
Team Members

- Organization: Medicine and Occupational Health (MOH)
  - Staff of 286 personnel

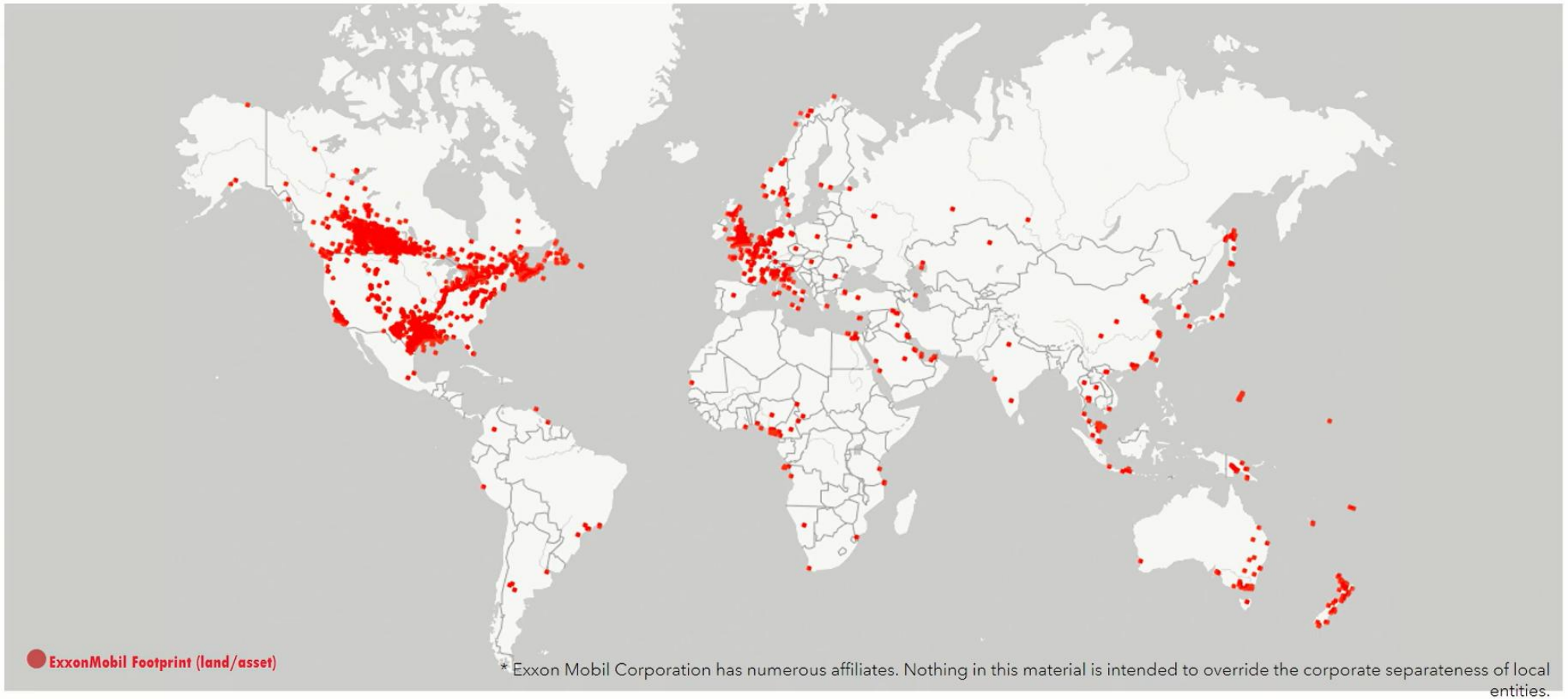
- Dr. Roger McKechnie – Global Medical Director
- Mr. Ulysses Orozco – Global Industrial Hygiene Manager
- Dr. Ashiq Zaman – Global Occupational Health Mgr. – Global Product Solutions.
- Mr. Colin McDaniel – Industrial Hygiene Manager - Global Product Solutions
- Dr. Eric J. Ward – Americas Product Solutions Industrial Hygiene Advisor
- Dr. Susan Craig – Occupational Health Manager – United States and Mexico



MOH Supports All of ExxonMobil



Global Support from Centralized Organization



Upstream | Product Solutions | Low Carbon Solutions | Technology and Engineering | Global Projects | Global Operations & Sustainability | Global Business Solutions | Supply Chain | Global Trading

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Occupational Health Program Overview

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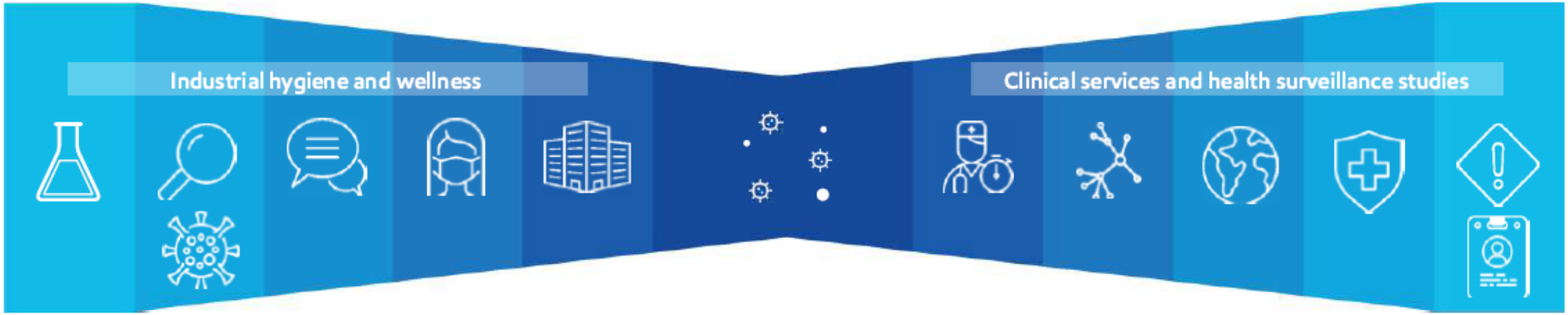

Hazards	Prevention safeguards				Workplace scenario	Mitigation safeguards				Consequences
Health hazards in the workplace	Hazard assessment and identification	Health risk assessment Hazard communication and promotion	Exposure Controls Technical Administrative PPE	Site preparedness Drills Screening Monitoring	**Potential Occupational Exposure in the Workplace**	Occupational exam enrollment	Early detection presymptomatic Response and recovery measures A&D programs	Clinical diagnosis and treatment Aftercare	Workforce health studies Epidemiology	**Health, safety, operations, cost and reputation**

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Hearing Conservation Program (HCP) Overview

Hearing Conservation Program Scope

- About **15,000 employees**
- About **550 Worker Groups** (Similar Exposure Groups)

Key Components

- Global program meets or exceeds local regulatory requirements
- Comprehensive Exposure Assessment and Monitoring Strategy
- Engineering integration into exposure controls
- Established standardized hearing conservation program
- Clinical expertise for audiometric and hearing protection fit testing

DATA DRIVEN

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Global Health Practices (GHP)

Global Standards

- Minimum requirements to be followed
  - Protects workers globally especially if there is a lack of local regulations
- Scope
  - Biological, Chemical, and Physical Health Hazards
- Noise GHP
  - Establishment of Hearing Protection Levels by Noise Level
  - Establishment of Global Design Practices for operations
  - Establishment of Medical Surveillance, Audiometry, and Fit Testing
  - Inclusion of tool kits for professionals
    - Control technologies
    - Hearing protection guidance
    - Noise Calculators
    - FAQs

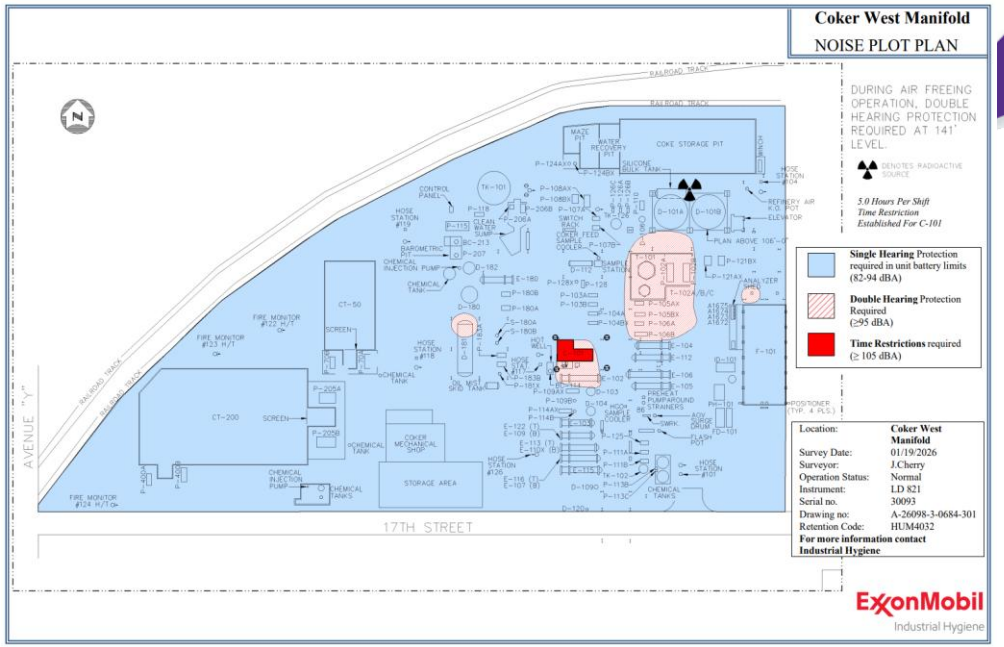
ExxonMobil	Global Health Practice	Medicine and Occupational Health - Global

Title	**Noise And Hearing Conservation**
Purpose	To consistently identify, assess and control worker exposure to potential health risks associated with high noise.
Scope	This practice applies to facilities where facility noise levels or job activities may result in noise exposure above 85 decibels A-weighted scale (dBA) in the work area. Note: Apply more stringent of either the following requirements or local regulation.
Awareness Requirements	• Workers are informed of high noise areas and activities, the potential health effects of high noise exposure, and the control measures needed to mitigate exposure.
Control Requirements	1. Exposure health risk assessments are conducted to evaluate potential health risk of high noise activities and/or areas 2. Work areas with fixed equipment generating noise levels equal to or greater than 85 decibels or 95 decibels are identified and the use of respectively single or double hearing protection is notified to employees and contractors. Noise signs, labels and maps can be used to meet this requirement. Regulation may require the use of warning signs posted at the entry points to areas where protection is required. 3. High noise tools, portable equipment and tasks requiring exposure control (e.g., hearing protection, time restriction) are identified in site program documentation and/or training materials. These specifications should include areas/tasks requiring single or double hearing protection and also indicate where other administrative controls are to apply (e.g. time restriction for noise levels above 105 decibels). 4. Facility Sound Level Design Criteria shall be used for all new facilities, facility additions and facility modifications consistent with ExxonMobil Engineering Practices. 5. Hearing protection device selection criteria is consistent with the Hearing Conservation Program Resources (toolkit) and detailed in the site written program.
Surveillance Requirements	• Medical evaluations and audiometric testing are offered to employees who meet the Occupational Evaluation Enrollment criteria and consistent with the ExxonMobil Occupational Evaluation Manual for noise exposed workers.

Hazard Identification

Noise Mapping and Signage

- Noise maps and signage are routinely updated reflecting the level of hearing protection required to enter specific areas
- Global utilization of the DGMR NoiseAtWork software for mapping to ensure program consistency



Worker Actions

- Adoption of the NIOSH SLM application
  - Allows workers the ability to establish barricades quickly
  - Effective for non-normal operations (steam leaks)

NIOSH SLM APP

Exposure Assessment Strategy (EAS)

Key Components

- Global Occupational Exposure Limit (OEL)
  - Follow ACGIH TLV Criteria for Noise (85 dBA – TWA)
    - Single Hearing Protection required ≥ 85 dBA
    - Double Hearing Protection (DHP) required at 95 dBA
    - DHP and Time Restrictions starting at 105 dBA
- Strategy follows AIHA Exposure Assessment Guidance
  - Defined and routine frequency for all Worker Groups
  - Strategy includes full-shift and task analysis
- Monitoring Strategy
  - Full-shift & Task - utilizing personal dosimeters and sound level meters
    - IH Best Practices
  - All Monitoring and Exposure Assessment data is stored in Cority
- Employee Communication
  - All monitored employees receive a communication from IH
  - Communication includes exposure levels and recommend actions or controls
- Industrial Hygiene Staff
  - Highly trained and qualified Industrial Hygienist and Technicians
    - Majority hold CIH or equivalent certifications

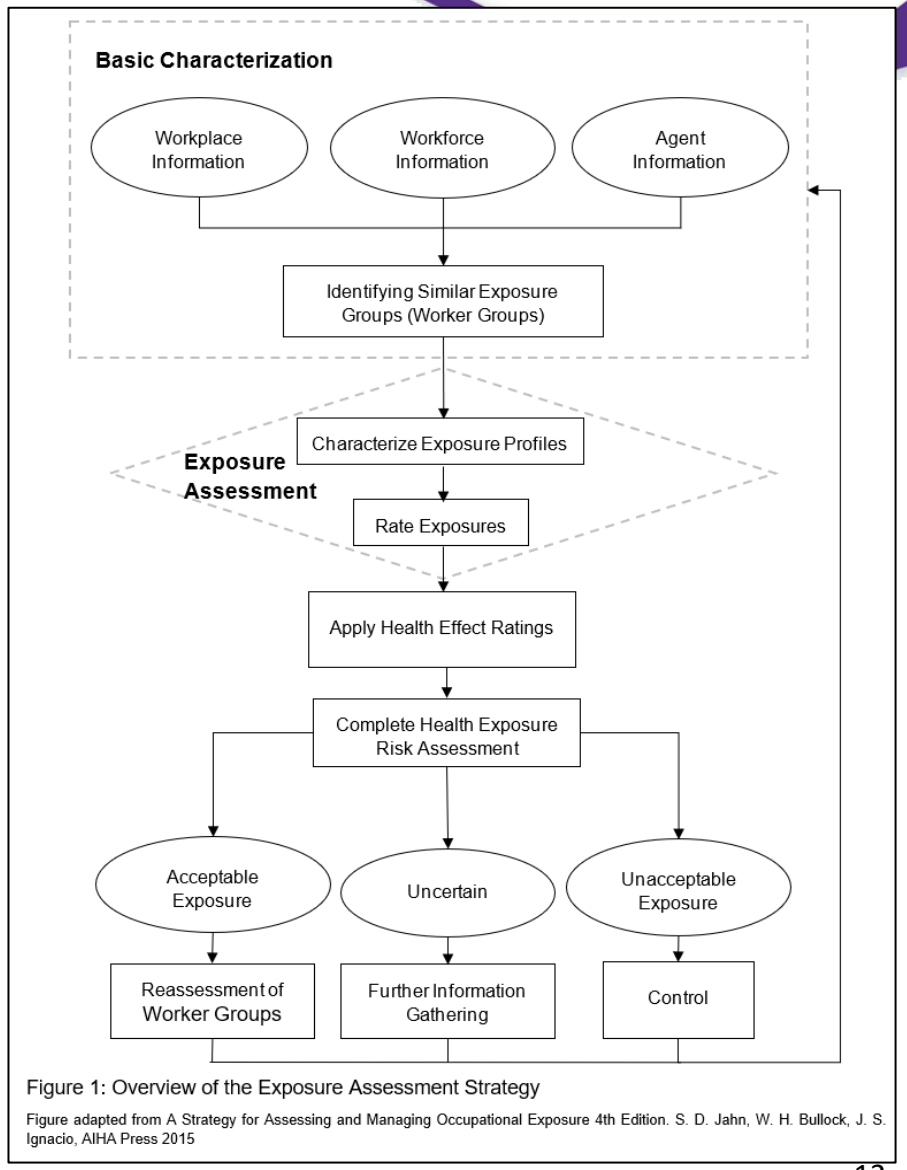


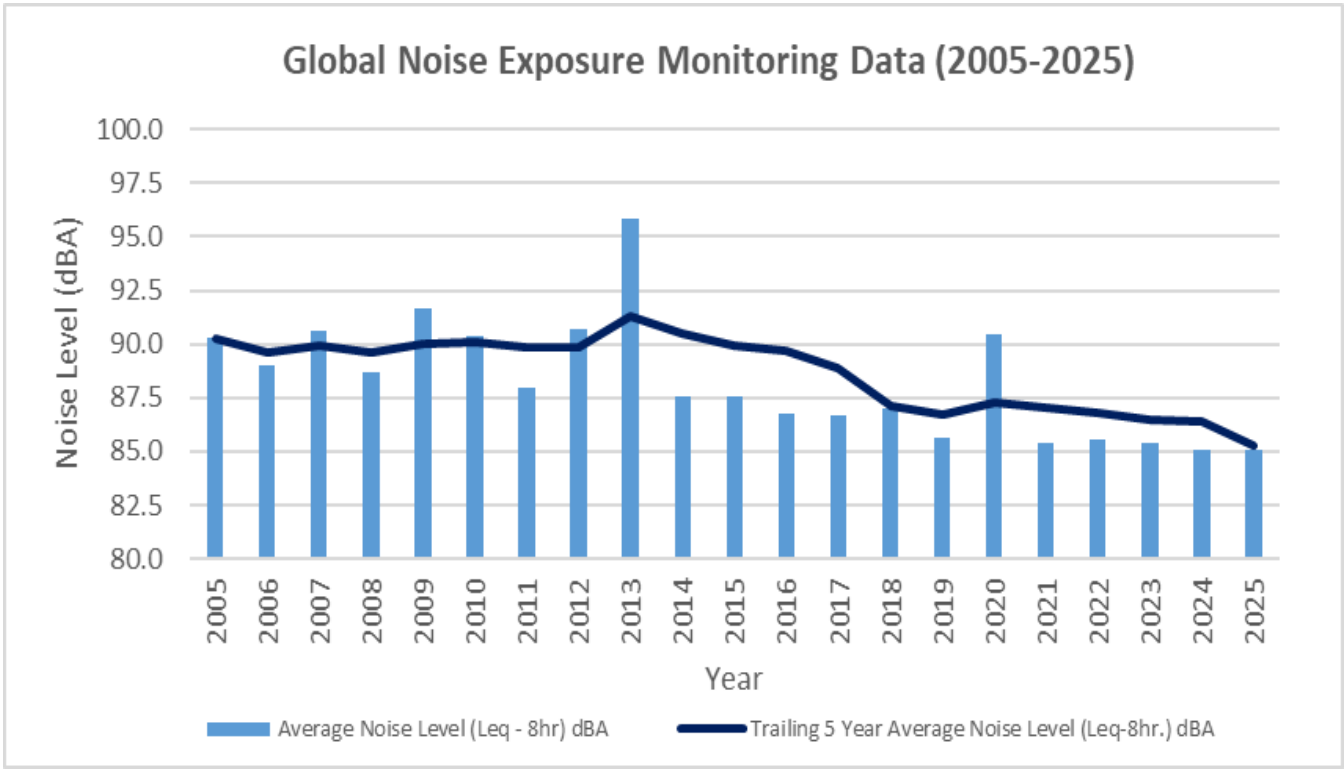
Figure 1: Overview of the Exposure Assessment Strategy

Figure adapted from A Strategy for Assessing and Managing Occupational Exposure 4th Edition. S. D. Jahn, W. H. Bullock, J. S. Ignacio, AIHA Press 2015

Noise Monitoring – Global Averages

- Noise levels have been decreasing steadily in our operations globally
- Since 2005 our average noise exposure has decreased by 215%
  - Implementation of new control technology along with consistent hearing protection remain our strategy for prevention of overexposure.

Years	Average Noise Level (dBA)	Average Noise Dose (%)
2006-2010	90.06	321.91
2011-2015	89.92	311.67
2016-2020	87.30	170.13
2021-2025	85.29	106.93
Current OEL	85.00	100.00



**Total Samples Collected (N) = 26,638

Global Design Practices (GDP)

- Purpose
  - Establishes noise (sound level) design criteria for new facilities, modifications, and equipment purchases to protect workers and communities
- Scope
  - Applies to all ExxonMobil projects globally, covering in-plant and community (fenceline) noise
  - Process is typically limited to major capital projects
- Key Requirements:
  - Sets maximum allowable sound levels for various facility areas and at property boundaries
  - Aligns with international standards (ISO 15664) and supplements with ExxonMobil-specific requirements
  - Requires noise surveys, baseline data, and documentation for compliance
  - Includes provisions for emergency, tonal, and impulse noise
- Practice
  - Design engineers collaborate closely with industrial hygienists to evaluate proposed controls, assess feasibility, and implement modifications that reduce noise exposure and associated health risks prior to construction.
  - Example:
    - Retrofitting low NOx burners has successfully reduced heater noise levels from 98 dBA to 83 dBA

Health Risk Reductions

Overview

- Health Risk Reduction (HRR) are minor capital or operation expense projects with collaboration between IH and business teams to address significant health hazards identified through our EAS program
- HRRs are designed to be shared so that similar hazards can be mitigated across similar operations

Hierarchy of Controls

- Program emphasizes utilizing the hierarchy of controls
  - Substitution of equipment for lower noise equipment (Buy Quiet)
  - Strong focus on using engineering controls to control hazards at the source

Impact

- Program launched in 2015
- To date more than 100 noise-specific HRRs have been implemented in our operations

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Buy Quiet Testing for Grinding Discs

Disc (Carbon Steel Cut)	Leq (dBA)
3M Cubitron II Cutting Disc Disc(12,250rpm)	95.4
PFERD EN 12 413 (12,200rpm)	91.6

Disc (Stainless Steel Grind)	Leq (dBA)
3M Cubitron II Grinding Disc (12,250rpm)	97
PFERD PS-FORTE	90.7

Changing the disc can result in downgrading from double to single hearing protection

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New Technology: Rad Torque System – Buy Quiet

- **Confined Space Activity:** Impact wrench produces an high torque output to install or remove bolts, with minimal exertion by the user.
- **Hazard Mitigation:** Mitigation used will reduce noise level
  - Current noise levels when using a impact wrench measured to be 110 dBA with a time limitation of two hours.
  - Using the Rad Torque System ® reduce noise level 23-30 dBA
- **Cost:** $3k-10k The price will depend on the type that you purchase.
- **Contacts:**
  - Quachel Bazile (Quachel.Bazile@exxonmobil.com)

RAD® Torque System website : https://www.radtorque.com/

Battery Operated Impact Wrench Noise Reduction – Gear Reduction Wrench Replacement

- **Manufacturing Sites Impacted:** Any manufacturing site with Battery Operated Impact Wrench
- **IH Concern:** Task Rating is A,80-110 dBA using impact Leq A 99 dBA for task, Duration 30 sec to 1 min. DHP during task,1 worker group - 3 people and Face shield and goggles required by tier 1
- **Hazard Mitigation:** Replace battery impact with gear reduction wrench to eliminate all extra PPE. Wrenches from 3 manufacturers reviewed and evaluation done on 1. Purchased wrench and implemented field use
- **Benefits:** Gear reduction wrench cost $ 5-6k.Model selected B-RAD 500-2 .Weight about 5 lb. higher at 13 lbs. Able to loosen tight nuts better, Able to precisely set torque Task Rating = C, 67-81 dBA using wrench, LeqA 76 dBA for task ,Duration longer at 2 min, HP, Face shield, and goggles no longer required with impact
- **Contact:**
  - Cicero Lube

Typical Noise Level Without Control Installed (dBA)	Typical Noise Level With Control Installed (dBA)
99	76

Noise Level Reduction
23 dBA

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Noise Control for Air Blowing Operation

- **Manufacturing Sites Impacted:** Any manfactriung and facilities that uses air blowing activities to clean residual products from operations.
- **IH Concern:** Double Hearing Protection. Noise levels measured at 1 foot from the source.
- **Hazard Mitigation** Installation of Silvent 705L Noise control tip attached to a safety air gun and wand Website: Silvent
- **Cost/Benefits:**
  - Noise Reduction between 10 to 13 dBA dependent on distance from impact of cleaning surface.
  - Eliminated the use of double hearing protection
  - Improve efficiency of cleaning and decreased time to clean
  - Decrease use of air supply
  - Minimize noise exposure to surrounding areas and associated workers
  - Cost: $263
- **Potential Barriers or Control Limitations**
  - Noise control tips have maximum air line pressure of 150 lbs.
  - Wand adapters are required to connect to air supply.

Typical Noise Level Without Control Installed (dBA)	Typical Noise Level With Control Installed (dBA)
101	88

Noise Level Reduction
13 dBA

Contact(s):Baton Rouge Industrial Hygienist:

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Elimination of Hearing Protection- Memphis Terminal

Identify/Assess:

Who:
Third Party drivers double and single hearing protection

Task duration:
20 minutes to load or unload a truck

Site effectiveness data:
Site noise survey: 95 dBA in Ethanol unloading bay

Business Solution/Decision:

Decision:
Worked with Terminal Superintendent and Field Engineer to install the solution

Solution:
Installed enclosure around pump and piping

Control Validation:

No hearing protection required

Site noise survey: 83 dBA in Ethanol unloading bay

Pensacola SEP Boxout Air Blower Noise Reduction – Muffler & Acoustic Lining 105 → 85 dBA

Identify/Assess:

- Worker Group Rating = A
- 3 worker groups - 15 people
- DHP within 25 feet
- 105 dBA by enclosure
- 85 dBA background inside at packaging line 2
- 85 dBA at plant fence line
- Annoying 125-500 Hz noise

Business Solution/Decision:

- Replace deteriorated air exhaust muffler with new acoustically tuned and sized muffler. Reused enclosure with new acoustic lining.
- Implemented by site engineering with IH and vendor support.
- Cost of project $17k
- Endorsed by Plant Manager
- Stewarded by Project Engineering

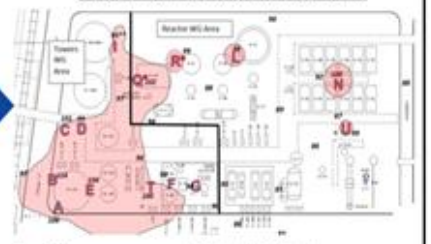
Control Validation:

- < 85 dBA by blower @ 3ft
- 77-79 dBA inside at line 2
- < 73 dBA at fence line
- Workers appreciate no more annoying noise
- HP not required due to noise levels but required by site.
- Rating qualitatively now B

BRCP PALA Unit – Steam leak Noise Reduction

Double Hearing Protection Map - Before

Double Hearing Protection Map - After



Identify/Assess:

Industrial Hygiene partnered with PALA unit to assess steam leaks

Reactor WG - A5 Exposure Rating*
Towers WG - A10 Exposure Rating

BRRF Maintenance Steam Team assisted in scoping leaks and estimated an annual energy loss of $505K

Business Solution/Decision:

Collaboration between PALA and Industrial Hygiene resulted in prioritized leak repair schedule

PALA modified 2017 unit squat/TA work scopes and allocated additional resources to repair leaks

Control Validation:

Reactor WG - A1 Exposure Rating
(WG time exposed to noise > 95 dBA decreased by 67%)
Towers WG - A5 Exposure Rating
(WG time exposed to noise > 95 dBA decreased by 31%)

Estimated **$295K** in annual savings from 2017 steam leak repairs

PALA assembling 2Q 18 temporary steam team to repair prioritized leaks

ExxonMobil A1= 1-<5x noise limit, A5= 5-<10x noise limit, A10= 10-<50x noise limit (does not take into account protection from hearing protection) With hearing protection-both WGs were/are below the noise limit. DHP=double hearing protection; WG=Worker Group
*Exposure ratings for WGs were estimated through the use of EMRSI approved occupational noise exposure worksheet

Noise reduction @ Zafiro Producer, MEGI

- **Manufacturing Sites Impacted:** Any site that uses winches to send and receive items at height
- **IH Concern:** A winch used for sending and receiving bucket containing slugs (Mucking) from the bottom of a tank to the top during maintenance activity generated high intensity, and loud noise
- **Hazard Mitigation:** During this task noise level was 107dB and 5 WG with over 50 personnel were impacted with this high intensity loud noise.
  - Installation of silencer at the exhaust of the winch - and ¼" hose ran overboard.
  - Noise level was cut from 107-87dB after installation
- **Benefits and Cost:** Cost the site less than 50 USD to install the exhaust silencer.
- Saved over 100,000 USD for hiring of additional contractors for implementation of administrative control measure (time restriction)

Typical Noise Level Without Control Installed (107 dBA)	Typical Noise Level With Control Installed (87 dBA)

Noise Level Reduction
20 dBA

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Occupational Health - Clinical Services

Overview

- Occupational health is managed by Medicine and Occupational Health
- Onsite Clinics from major facilities
- Supervision of 3rd party health providers for remote locations.

Key HCP Activities

- Pre-exam questionnaire
- Otoscopic examination
- Pure tone audiometry
- Hearing protection Fit Testing

Image from Getty images

Hearing Protection Fit Testing Overview

Overview

- In 2024 ExxonMobil adopted the use of the 3M Earfit Dual Validation System globally
- Quantitative assessment of personal attenuation rating
  - Intuitive and Easy to implement

Testing Parameters

- Employees are tested against six standard 3M earplugs identified through pilot studies (>5000 fit tests)
- Testing occurs following audiometry testing
- Employees must receive a Personal Attenuation Rating (PAR) ≥ 15 dB
- Employees are provided with a Fit Test card and/or sticker

Employee Feedback

- "As an operator in the field, I am at ease knowing I have been fitted for the best protection possible. Having one less concern to worry about in the field makes a big difference. I know my hearing and health are a top priority to my MOH team". - D. Murphy (Joliet Operator)
- "My own experience with the 3M E-A-Rfit system was eye-opening. Despite years of using earplugs I believed were effective, the system revealed they were inadequate for my ear canals. After trying alternative styles, I achieved significantly better attenuation. This reinforced the importance of personalized fit testing and validated our investment in this technology. It's essential that every worker undergoes this fit testing at least once in their career to ensure optimal protection." – K. Bailey (Global Emergency Management, Principal)

Hearing Protection Selection

Earplugs

- Required to have a NRR ≥ 25
- Most company locations have transitioned to or are transitioning to the use of six standardized 3M earplugs
  - Earplugs were selected based on employee fit test results and user comfort and popularity
  - Employees use the earplugs to which they have been fit tested
- Data is stored within centralized software (Cority)

Earmuffs

- Required to have an NRR ≥ 20
- No brand specific earmuffs are required

Quantitative HPD Fit Testing - Earplug Pocket Card (Do Not Discard)			
Employee Name:			
Site/Location:			
Technician:			
Test Date:			
Test Result (PAR):	**Left:** _____ dB	**Right:** _____ dB	**Overall:** _____ dB
Recommended Ear Plug (i.e. achieved a passing PAR)			
3M No Touch	3M TaperFit 2	3M E-A-R Express Pods	
3M Soft Yellow Neon	3M Foam 1100	3M E-A-R Soft FX	
Recommended Ear Plug Size (i.e. achieved a passing PAR)			
Small	Medium	Large	XL

Significance of the Award

- Marks a significant achievement in the maturity and impact of our noise control program
- Acknowledges the dedication and expertise our teams have invested over many years
- Confirms that our strategy for reducing noise exposure is both effective and industry leading
- Fuels continued progress and strengthens our organizational commitment to worker protection
- Affirmation to leadership that investing in noise controls pays off
- Sends a clear message to employees that noise control is a tangible, high-priority corporate objective

Contact Information

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