2019 USPHS Symposium
Wednesday, May 8
Engineer Category Agenda

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8:30 AM - 9:00 AM Facility Considerations and Best Practices for High Containment Research Laboratories

***CDR Eric Hanssen**, P.E., LEED AP, CEM*

High containment, or Biosafety Level 4 (BSL-4) labs are the workplaces of scientists who conduct research on the world,Äôs most lethal pathogens with the mission of developing vaccines and cures for emerging and exotic diseases. One such lab, operated by the National Institutes of Health, is located at Rocky Mountain Laboratories in Hamilton, Montana where I serve as the Chief Facilities Engineer. Designing, constructing and maintaining high containment research laboratories comes with high costs, unique facility requirements, redundant systems, and strict operational and regulatory requirements. To ensure the safest, highest functioning lab environment, facility engineers and maintenance staff must work hand-in-hand with researchers, biosafety specialists, veterinary staff, regulatory entities and the public on a continuous basis. This presentation will highlight the unique design features of BSL-4 labs, daily facility maintenance and operations practices, critical coordination with other lab constituents, and the engineer's role in maintaining public trust with the lab's surrounding community.

At the conclusion of this session participants will be able to:

1. Describe the importance of facility system redundancy in operating a BSL-4 laboratory and name 3 critical systems that have redundancy built in by design
2. Identify critical life support systems the facilities engineering staff is responsible for maintaining to ensure safety of scientists working in high containment lab space
3. Explain the importance of strong public trust in operating a high containment laboratory, and the facility engineer’s role in ensuring public trust is maintained

9:00 AM - 9:30 AM Assessing Exposure to Airborne Particulate in Industrial Occupations

***LT Timothy Beck**, MPH*

Background: Workers may be exposed to a variety of airborne particulate (i.e. dusts) during the performance of industrial activities, such as mining, construction, and maintenance. Severe cardiovascular and respiratory health impacts, leading to shortened life span and reduced quality of life, can result from overexposures.
Description: In order to identify harmful environments and prevent unhealthy exposures, job activities and work areas must be effectively monitored using the appropriate sampling equipment. The use of size-selective samplers and the collection of various particulate sizes is the basis for evaluating a worker's risk to physical airborne contaminants. Timeliness and accuracy of these samples is likewise essential to allow workers and managers to take corrective action before overexposure. CDC's National Institute for Occupational Safety and Health (NIOSH) plays a key role in researching and developing methods and materials to accomplish these goals.
Lessons Learned: NIOSH has developed tools to provide real-time and near real-time

monitoring of worker exposure. Through Video Exposure Monitoring, NIOSH has combined instantaneous dust monitor data with recorded point-of-view video to inform workers about risks of specific tasks and locations. NIOSH has also advanced techniques to characterize the composition of dusts. These analyses intend to define specific health-relevant particulate properties, e.g. fibrosity or chemical toxicity. Recommendations: Due to the latency of disease, respiratory exposures may receive less consideration than acute injuries in the workplace. Despite this, planners and supervisors can implement these assessment approaches in their own industrial settings to inform work practices and reduce overexposures to harmful airborne particulate.

At the conclusion of this session participants will be able to:

1. Identify the potential health consequences of occupational particulate exposure.
2. Name the categories and associated sizes of occupational particulates.
3. Describe efforts by NIOSH to improve occupational dust monitoring techniques.

9:30 AM - 10:00 AM Sanitary Surveys - The Before, During , & After

***CDR Kris Neset**, PE, MSM*

Drinking Water Sanitary Surveys & NPDES Waste Water Inspections are much more than a check the box exercise IHS, EPA, and the Tribal Utility complete every three or five years. It should be a mindset that we focus on a continual basis; being proactive instead of reactive. We should have the attitude that if we see something not to standard, say or plan something, and follow through with addressing the issue. Addressing the issue can be accomplished in several ways: utility do the work, contractor do the work, IHS TUC and/or USBR do the work

At the conclusion of this session participants will be able to:

1. State the tasks and coordination that needs to be completed before the Sanitary Survey or NPDES Inspection to ensure an efficient and productive sanitary survey.
2. State the items that need to be documented during the official sanitary survey and how to utilize the time during the survey as a learning/training event for the operators.
3. Explain the follow-up after the Sanitary Survey or NPDES Inspection needed to ensure remaining/outstanding items are addressed in a timely manner; preferably before the Sanitary Survey is published.

10:15 AM - 10:45 AM Exhibit Theater: Thermo Fisher Scientific - Asthma Guidelines and How Systemic Inflammation Can Impact their Differential

11:15 AM - 11:45 AM Exhibit Theater: Arizonans Concerned About Smoking - Health Leadership Award Ceremony

12:00 PM - 1:30 PM Engineer Luncheon and Chief Engineer: Category Status and Strategic Direction

***RADM Edward Dieser**, PE*

RADM Dieser, USPHS Chief Engineer, will discuss the current status of the USPHS Commissioned Corps and Engineering Category. The information will provide perspective on the influences that led to the significant evolution of Corps' mission,

policies, processes, and strategic direction. The information will also focus on the Engineer Category to assist officers with career planning.

At the conclusion of this session participants will be able to:

1. Discuss the current status of the USPHS Commissioned Corps and Engineering Category, including current and projected manning, projected budget, and mission definition.
2. Discuss the strategic direction of the Commissioned Corps, including external influences and evolving mission.
3. Discuss the strategic direction of the Engineering Category as it relates of career progession, assignment opportunities, and response operations.

1:30 PM - 2:00 PM — Federal Budget Cycle: A Direct Order from the Commander in Chief

***LCDR Matthew Palo**, BS*

This presentation will explain the basics of the Federal budget cycle and provide a foundation that is a necessary prerequisite for effective executive leadership in the Federal government. The session will describe those involved in the budget process, the operational consequences of the budget cycle, and the impact on Federal programs and those programs' staffing.

At the conclusion of this session participants will be able to:

1. Identify the overall timeline and the major stakeholders in the Federal budget cycle
2. Identify and define the various budget instruments created during the budget cycle
3. Describe the impact of the President's Budget Proposal on federal programs

2:15 PM - 2:45 PM — Restoring the St. John River International Watershed: Forging Cross-Border Partnerships with Tribes, First Nations, and Federal Agencies in USA and Canada

***CAPT Michael Stover**, PE, RS*

In 1918, USPHS Engineer Earle B. Phelps was assigned by the International Joint Commission to study agricultural waste pollution on the St. John River, an international waterway that defines the northern border between the State of Maine and Canada. Since that time, construction of dams, industrial discharges, and population growth have impacted water quality, aquatic habitat and ecological conditions within the watershed. Nearly 100 years later, USPHS returns to the St. John River by way of the U.S. Environmental Protection Agency to assist the Houlton Band of Maliseet Indians forge a collaboration among tribes, First Nations, US and Canadian federal agencies to restore the St. John River watershed, address fish passage limitations, establish a phylogenetic tree of genetic strains of salmon in the watershed, and establish a long-term plan to prevent future degradation.

At the conclusion of this session participants will be able to:

1. Summarize the history of USPHS presence on the St. John River
2. Describe the environmental issues facing the St. John River watershed indigenous communities
3. List the US and Canadian agencies that have come together to collaborate on the St. John River watershed restoration effort

2:45 PM - 5:00 PM Local Damage Assessment

***CDR Janis McCarroll**, PE*

Engineers by the nature of their training and perspective take a systems approach to execute missions and solve problems. This systems approach to management of mission makes engineers uniquely adept at leading large scale and complex deployment operations. In order to facilitate and coordinate work during deployments the Engineer Category is focused on developing relationships with key personnel in ASPR and the following agencies that have overlap with HHS during federal deployments.

- Federal Emergency Management Agency
- US Environmental Protection Agency
- US Army Corps of Engineers

This session provides participants with information and resources that will enable them, in the event of incidents of natural or human caused disasters, to plan an effective damage assessment program and conduct rapid and effective damage assessments in order to save lives, protect property and the environment, and begin the process of recovery and mitigation.

At the conclusion of this session participants will be able to:

1. Describe how risk and vulnerability assessment information is used for damage assessment planning.
2. Describe how training and exercises are used to enhance the damage assessment program.
3. Describe basic operations of local damage assessment.

5:00 PM - 5:15 PM Engineer Closing Remarks