Protecting Workers and Volunteers Responding On-Shore to Hurricanes from the Gulf of Mexico

The recommendations provided in this interim information focus on issues specific to the Deepwater Horizon Response and do not address issues common to all hurricane responses. For more information on storm/flood and hurricane response, consult the NIOSH website at http://www.cdc.gov/niosh/topics/emres/flood.html.

This interim information is intended to assist employers and workers in preventing work-related injuries and illnesses during hurricane response. Additional information may be found in Tasks 1, 3, 6, 13 and 14 of the OSHA General Personal Protective Equipment Sampling Matrix found at: http://www.osha.gov/oilspills/oil_ppematrix.html

Introduction

Hurricane response activities can present a number of hazards for response workers. The 2010 hurricane season brings concerns about protecting emergency responders, debris removers and others from exposure to oil-contaminated waters as a result of the Deepwater Horizon fire, explosion and continuing oil leak in the Gulf of Mexico.

According to the National Oceanic and Atmospheric Administration (NOAA), high winds and seas associated with a hurricane will mix and "weather" the oil which can help accelerate the biodegradation process. The high winds may distribute oil over a wider area, but it is difficult to determine exactly where the oil may be transported. The movement of oil would depend greatly on the track of the hurricane. Storms' surges may carry oil into the coastline and inland as far as the surge reaches. Debris resulting from the hurricane may be contaminated by oil from the Deepwater Horizon incident, but also from other oil releases that may occur during the storm. See http://www.noaa.gov/factsheets/new%20version/hurricanes_oil.pdf.

This interim information provides recommendations for protecting workers and volunteers during the phases of hurricane responses: (1) pre-storm activities; (2) damage assessment; and (3) debris removal.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
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Pre-Storm Activities

When a threatening hurricane is active in the coastal waters, it is anticipated that workers and residents will evacuate from the area. Public safety workers (e.g., police, fire, and rescue) who remain to manage traffic and mass evacuations are unlikely to be impacted by crude oil/oil dispersants because there will not be oil in the rain related to a hurricane, as stated by NOAA.

Damage Assessment

Storm-damaged properties, particularly those within the storm-surge zones in low lying coastal areas, may be contaminated with weathered oil. Damage assessment teams should assess the degree to which debris is contaminated with weathered oil before debris removal begins. Based on damage assessments and the degree of oil contamination, the use of personal protective equipment (PPE) such as protective clothing may be necessary as a part of a comprehensive health and safety plan, including safety and health training.

Debris Removal

Workers involved with storm surge cleanup should be trained on potential dangers and proper safety precautions. Work-related hazards that could be encountered include: electrical hazards, carbon monoxide, musculoskeletal hazards, heat stress, motor vehicles, hazardous materials, fire, confined spaces and falls. Information about hazards associated with storm and flood cleanup in general can be found at: http://www.cdc.gov/niosh/topics/emres/flood.html.

Where debris is contaminated with oil, workers should avoid direct contact with contaminated surfaces. Crude oil and its components, as well as oil dispersants, can cause skin irritation and inflammation. NIOSH recommends avoiding all unprotected skin and eye contact to crude oil, dispersants and other chemicals used during response activities. PPE to prevent skin contact must be selected carefully for use in a hot, wet environment. Skin damage due to chafing from increased sweating, coupled with the mechanical stress of ill-fitting PPE, can compromise the skin's natural barrier against bacteria. In addition, the use of sunscreen, shaded safety glasses and wide-brimmed hats are recommended.

Since any exposure to oil-contaminated debris will be to weathered crude oil which contains little volatile organic compounds (VOCs), respiratory protection against

organic vapors is not needed. However, respiratory protection may be needed when debris removal operations involve cutting, grinding or other abrasive processes that may generate an oil mist aerosol or dust. In those instances, a respirator equipped with a P-95, 99, or 100 filters should be selected. R-series filter respirators could be used, but should be replaced and discarded after each day's use. N-Series NIOSH certified respirators are not recommended for oil-contaminated debris removal operations as their particulate filtering materials are not oil proof or oil resistant (P-Series = Oil Proof | R-Series = Oil Resistant | N-Series = Not Oil Resistant).

Workers and volunteers may experience stress and fatigue when they respond to environmental disasters. Deepwater Horizon responders are at risk of feeling uncomfortable levels of stress even months after their response work has ended. Specific recommendations for Gulf workers entitled *Managing Traumatic Incident Stress for Deepwater Horizon Response Workers and Volunteers* can be found at: http://www.cdc.gov/niosh/topics/oilspillresponse/traumatic.html and other similar information at the Substance Abuse and Mental Health Services Administration's (SAMHSA) website at http://samhsa.gov/Disaster/ may be helpful.

For More Information

For more NIOSH information and recommendations for Deepwater Horizon response workers, see http://www.cdc.gov/niosh/topics/oilspillresponse/

To receive NIOSH documents or more information about occupational safety and health topics, contact NIOSH at

1–800–CDC–INFO (1–800–232–4636)
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