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In This Issue

Requirements to Promote Rail Transportation Security

By Muhammad Hanif and Abdul Khalid, HTIS

In November 2008, the Pipeline and Hazardous Materials Safety Administration (PHMSA), in coordination with the Federal Railroad Administration (FRA) and the Transportation Security Administration (TSA), published final rules adopting requirements and procedures to promote rail transportation security. The final rule, as published in the Federal Register (FR), Vol 73, pages 72181-72194, adopted the following revisions to the Hazardous Material Regulations (HMR) that became effective December 26, 2008:

- Rail carriers transporting certain explosives, toxic by inhalation, and radioactive materials **must** compile annual data on the commodities transported. The carriers are to use this data to analyze safety and security risks along rail routes where those materials are transported.

- Rail carriers transporting the specified hazardous materials are to use their compiled data and relevant information from state, local, and tribal officials, as appropriate, to analyze the safety and security risks for **each** route used and assess alternative routing options.

- Using these analyses, rail carriers **must** make routing decisions based on these findings.

- In developing security plans required, rail carriers **must** address the issues related to en route storage and delays in transit in their security plans.

- Rail carriers transporting the covered hazardous materials **must** notify consignees of any significant unplanned delays affecting the delivery of the hazardous material.

- Rail carriers **must** work with shippers and consignees to minimize the time a rail car containing one of the specified hazardous materials is placed on track awaiting pick-up, delivery, or transfer.

- Rail carriers **must** inspect placarded hazardous materials rail cars at ground level for signs of tampering or the presence of suspicious items, including improvised explosive devices.

This final rule finalizes the interim final rule effecting the rail carrier regulations at 49 CFR Part 174 as published at 73 FR 20773 on April 16, 2008 (effective as of June 1, 2008) without changes. **This final rule changes the Security Plans requirements in 49 CFR Part 172, Subpart I regarding transportation of hazardous materials by rail.**

For further information regarding specific aspects of the final rule, you may contact William Schoonover, (202) 493-6229, Office of Safety Assurance and Compliance, FRA; or Susan Gorsky or Ben Supko, (202) 366-8553, Office of Hazardous Materials Standards, PHMSA.

Reference: Federal Register (FR) volume 73, pages 72181 - 72194 (73FR72181), Wednesday, November 26, 2008.

New Planning Guidance for Response to a Nuclear Detonation

By Ariel Rosa, Environmental Protection Specialist, HTIS

On January 16, 2009, the Homeland Security Council released the first edition of its "*Planning Guidance for Response to a Nuclear Detonation*".

This guidance was developed by a Federal interagency committee with representation from the Executive Office of the President (Homeland Security Council and Office of Science and Technology Policy), the Departments of Defense, Energy, Health and Human Services, Homeland Security, Transportation, Veteran's Affairs, the Environmental Protection Agency, the National Aeronautics and Space Administration, and the Nuclear Regulatory Commission.

"The purpose of this guidance is to provide emergency planners with nuclear detonation-specific response recommendations to maximize the preservation of life in the event of an urban nuclear detonation. This guidance

addresses the unique effects and impacts of a nuclear detonation such as scale of destruction, shelter and evacuation strategies, unparalleled medical demands, management of nuclear casualties, and radiation dose management concepts.

The guidance is aimed at response activities in an environment with a severely compromised infrastructure for the first few days when it is likely that many Federal resources will still be en route to the incident. The target audiences for the guidance are state and local response planners and their leadership. Emergency responders should also benefit in understanding and applying this guidance. The plan facilitates coordination between state and local planners and the Federal government.

The planning guidance recommendations are focused on providing express consideration of the following topics relevant to emergency planners within the first few days of a nuclear detonation,

- shelter and evacuation,
- medical care, and
- population monitoring and decontamination.

Worker safety and health are also discussed. The planning guidance summarizes recommendations based on what is currently known about the consequences of a nuclear detonation in an urban environment. It provides recommendations based on existing knowledge and existing techniques. The Federal government is supporting continuing studies that will inevitably provide more robust and comprehensive recommendations.

The planning guidance may be reviewed and referenced by local and state emergency response planners. It is complementary to ongoing national preparedness activities, and will help to increase local and state emergency response planners' knowledge of the expected effects and impacts of a nuclear detonation.

The White House nuclear detonation guidance will not be incorporated into the EPA's Protective Action Guides (PAGs) Manual. The PAGs Manual is a science-based guideline developed by the EPA to provide guidance on emergency action levels for radiation exposure to protect the public.

The EPA's PAGs Manual can be applied outside the areas and timeframes covered in the nuclear detonation guidance.

Reference:
http://www.epa.gov/rpdweb00/docs/er/planning-guidance-response-nuclear-detonation-FINAL.pdf

Federal Agencies Required to Procure EPEAT Registered Products

Moraima Lugo-Millán, Chemist, HTIS

Electronic products are a part of everyday life and continued and expanded use of electronic information and communication technologies is a likely key to achieving global sustainability. However, with current industrial technology and infrastructure, electronic products also have unacceptably high social and environmental impacts. These products often contain significant amounts of toxic and environmentally sensitive materials, use electricity inefficiently, have a relatively short useable

lifespan, and are inefficiently and/or ineffectively recovered and recycled. To help alleviate these problems, many organizations are striving to purchase environmentally preferable products and are using their purchasing power to make products greener. However, until recently it has been very difficult for most purchasers to determine what products are better, environmentally, than others.

To help purchasers determine which products to purchase, a tool has been designed to deal with the technical complexities of determining which products are actually preferable. The Electronic Product Environmental Assessment Tool (EPEAT) is a procurement system designed to help purchasers evaluate, compare and select personal electronic devices, such as computers, based on their environmental attributes. This tool also provides a clear and consistent set of performance criteria for the design of products, and provides an opportunity for manufacturers to secure market recognition for efforts to reduce the environmental impact of their products.

EPEAT evaluates electronic products in relation to 51 total environmental criteria, contained in the IEEE (Institute of Electrical and Electronics Engineers) 1680 Standard. The EPEAT rating system includes 23 required criteria and 28 optional criteria for desktop personal computers, notebook personal computers, and personal computer monitors. The optional criteria are used to determine if the equipment receives EPEAT Bronze (meets all 23 required criteria), Silver (meets all 23 required criteria plus at least 50% of the optional criteria) or Gold recognition (meets all 23 required criteria plus at least 75% of the optional criteria). Manufacturers declare their products conformance based on the following comprehensive set of environmental criteria in eight environmental performance categories:

- Reduction/elimination of environmentally sensitive materials
- Materials selection
- Design for end of life
- Product longevity/life cycle extension
- Energy conservation
- End of life management
- Corporate performance
- Packaging

Some participating manufacturers with EPEAT registered products are: Apple, Dell, Fujitsu, Hewlett-Packard, Hyundai, LG, Panasonic, Samsung, Sony, and Toshiba, among others.

At the beginning of this year, the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council, agreed to adopt a final rule which requires federal agencies to procure EPEAT registered products. This rule amended the Federal Acquisition Regulation (FAR) to provide regulations for purchasing environmentally preferable products and services when acquiring personal computer products such as desktops, notebooks (also known as laptops), and monitors in pursuant to the Energy Policy Act of 2005 and Executive Order 13423, ``Strengthening Federal Environmental, Energy, and Transportation Management." This final rule became effective on **February 17, 2009**, and it states that the head of each agency shall “ensure that

when acquiring an electronic product to meet its requirements, the agency meets at least 95 percent of those requirements with an EPEAT-registered electronic product, unless there is no EPEAT standard for such product". This new requirement is now part of the Federal Acquisition Regulation, meeting green purchasing requirements in all solicitations and contracts for personal computer products.

Compared to traditional computer equipment, all EPEAT-registered computers have reduced levels of cadmium, lead, and mercury to better protect human health and the environment. They are more energy efficient, which reduces emissions of climate changing greenhouse gases, and are also easier to upgrade and recycle.

References: 1. http://www.epeat.net/ 2. http://edocket.access.gpo.gov/2009/E9-549.htm

Army News

US Army to Lease Electric Vehicles

By Ariel Rosa, Environmental Protection Specialist, HTIS

In what is the single largest acquisition of its kind ever, Secretary of the Army, Pete Geren, announced January 12, 2009 that the Army plans to lease thousands of neighborhood electric vehicles (NEVs).

"The Army is committed to substantially reducing the greenhouse gas emissions through our acquisition of Neighborhood Electric Vehicles," Geren said. "This historic acquisition will constitute the largest acquisition of electric vehicles not just in the military, but in the entire country."

The announcement was made during an acceptance ceremony at Ft. Myer, Virginia where six of the new vehicles will be incorporated into base operations. The NEVs are part of a more comprehensive and far reaching energy security strategy designed to save energy, money, and to wean the Army from fossil fuels. The Army is focused on harnessing renewable and alternative energy sources like geothermal, solar and biomass conversion.

The 4,000 non-tactical electric vehicles will be used on Army bases for passenger transport, security patrol, and maintenance and delivery services.

In addition to the vehicles delivered to Fort Myer, the Army will lease 794 more NEVs this year; 1,600 will be leased in 2010, and 1,600 leased in 2011. A General Services Administration announcement in *FedBizOpps.Gov* solicits NEV manufacturers to help provide the vehicles to meet the Army's goal of 4,000 NEVs in three years.

These first six electric vehicles delivered are manufactured by the Global Electric Motorcars division of Chrysler Corporation. But dozens of other companies that manufacture electric vehicles can compete to meet Army vehicular requirements in the future.

Compared to leasing gasoline or hybrid-powered vehicles the savings from leasing electric vehicles and the environmental benefits are impressive. The Army estimates that money will be saved and its fossil fuel consumption reduced by 11.5 million gallons over a six-year period. This translates into 115,000 fewer tons of CO2 emissions during that same period.

"The Army will continue to leverage new and

emerging technologies to ease its dependence on fossil fuels," said Deputy Assistant Secretary for Energy and Partnerships and Senior Energy Executive for the Army Paul Bollinger.

Reference: http://www.army.mil/-newsreleases/2009/01/12/15707-army-announces-historic-electric-vehicle-lease/

DOE News

DOE's Contracts for Energy Efficiency, Renewable Energy, and Water Conservation Projects at Federal Facilities

Reprinted submitted by Moraima Lugo-Millán, HTIS

In December 2008, the Department of Energy (DOE) awarded 16 new Indefinite Delivery Indefinite Quantity (IDIQ) Energy Savings Performance Contracts (ESPCs) that could result in up to $80 billion in energy efficiency, renewable energy, and water conservation projects at federally-owned buildings and facilities. ESPCs help to meet the federal government's energy efficiency, water conservation, and renewable energy goals. The federal government is the largest single user of energy in the United States and these awards demonstrate a commitment to sound government stewardship by recognizing efforts to save energy, reduce federal energy costs, cut greenhouse gas emissions, bring more cutting-edge technologies to use, strengthen national security, and create a stronger economy.

"This set of awards will ensure that federal agencies have access to powerful tools for alternative financing at a scale that is needed to meet our challenge of reducing energy intensity, increasing the use of renewable energy, and decreasing water consumption", said DOE Secretary Samuel W. Bodman.

In August 2007, Secretary Bodman launched the Transformational Energy Action Management (TEAM) Initiative, a Department-wide effort aimed at reducing energy intensity across the nationwide DOE complex by 30 percent. The TEAM Initiative aims to meet or exceed the aggressive goals for increasing energy efficiency throughout the federal government already laid out by President Bush through Executive Order 13423, which directed federal agencies to reduce energy intensity and greenhouse gas emissions; substantially increase use and efficiency of renewable energy technologies; adopt sustainable design practices; and reduce petroleum use in federal fleets.

The new contracts were awarded to the following Energy Service Companies (ESCOs):

- Ameresco, Inc. (Framingham, Mass.);
- Chevron Energy Solutions (Eagan, Minn.);
- Clark Realty Builders (Arlington, Va.);
- Consolidated Edison Solutions, Inc. (White Plains, N.Y.);
- Constellation Energy Projects & Services Group, Inc. (Baltimore, Md.);
- FPL Energy Service, Inc. (North Palm Beach, Fla.);
- Honeywell International, Inc. (Golden Valley, Minn.);

- Johnson Controls Government Systems, LLC (Milwaukee, Wis.);
- Lockheed Martin Services, Inc. (Cherry Hill, N.J.);
- McKinstry Essention, Inc. (Seattle, Wash.);
- NORESCO, LLC (Westborough, Mass.);
- Pepco Energy Services (Arlington, Va.);
- Siemens Government Services, Inc. (Reston, Va.);
- TAC Energy Solutions (Seattle, Wash.);
- The Benham Companies, LLC (Oklahoma City, Okla.); and,
- Trane U.S., Inc. (McEwen, Tenn.).

The goals set forth in Executive Order 13423 and the requirements established by Congress in the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 include a 30 percent reduction in energy intensity and a 16 percent reduction in water use by 2015, and an increase of renewable energy to 7.5 percent of electricity needs by 2013 for Federal facilities. ESPCs enable agencies to undertake energy savings projects without paying up-front capital costs. ESPC task orders typically are placed competitively and can be used for energy and water efficiency and renewable energy projects.

Under an ESPC, the contractor designs, constructs, and obtains the necessary financing for an energy savings project and the agency makes payments over time to the contractor from the savings reduction in the utility bills which are paid by the agency's appropriated funds over time. The contractor guarantees the energy improvements will generate savings. Moreover, the aggregate annual amount of payments to the contractor and payments for utilities cannot exceed the amount that the agency would have paid for utilities without an ESPC. After the contract ends, all continuing cost savings accrue to the agency.

The new contracts provide for a maximum individual contract value of $5 billion over the life of the contract, eliminate technology specific restrictions, and allow federal agencies to use these contracts in federal buildings, nationally and internationally. In addition, ESPCs now include a greater emphasis on renewable energy and water conservation projects.

Reference:
http://www.energy.gov/news/6804.htm

DOT News

Revisions to Batteries and Battery-powered Devices Requirements

By Muhammad Hanif and Abdul Khalid, HTIS

In a final rule published in the Federal Register (FR) on January 14, 2009, the Pipeline and Hazardous Materials Safety Administration (PHMSA) authorized a January 1, 2009 voluntary compliance with the most recent amendments to the International Maritime Dangerous Goods (IMDG) Code, the International Civil Aviation Organization's (ICAO) Technical Instructions (TI) for the Safe Transport of Dangerous Goods by Air, the United Nations (UN) Recommendations on the Transport of Dangerous Goods, and new subsection 4.18(5) of Amendment 6 to Transport Canada's Transportation of Dangerous Goods (TDG) Regulations, pertaining to placarding of anhydrous ammonia. This

harmonization is part of an ongoing effort to increase the uniformity and efficiency of domestic regulations with the international standards for shipping hazardous materials.

The final rule, issued under Dockets Nos. PHMSA-2007-0065 (HM-224D) and PHMSA-2008-0005 (HM-215J), updates the incorporations by reference in the Hazardous Materials Regulations (HMR) to authorize use of the most current versions of international standards to facilitate the continued safe and efficient transport of hazardous materials in international commerce. This final rule also revises the HMR to maintain alignment with international standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations, and vessel stowage requirements. These revisions are necessary to harmonize the HMR with recent changes to the Fifteenth revised edition of the UN Recommendations, Amendment 34 to the IMDG Code, and the 2009–2010 ICAO TI, all of which became effective January 1, 2009.

In addition, specific amendments and clarifications concerning batteries and battery-powered devices are included in the final rule published on January 14, 2009. Directly related to the ICAO's TI, the final rule clarifies the prohibition against transporting electrical devices, including batteries and battery-powered devices that are likely to create sparks or generate a dangerous amount of heat. The final rule also includes enhanced requirements for the packaging and handling of batteries and battery-powered devices. PHMSA developed these revisions in conjunction with the Federal Aviation Administration by focusing on the more stringent safety precautions needed in shipping batteries and battery powered devices, especially in air commerce to enhance the safe transportation of batteries and battery-powered devices.

To harmonize the HMR (49 CFR parts 171-180) with the international standards applicable to the transport of batteries and battery-powered devices, PHMSA incorporated two separate rulemaking dockets--HM-224D addressing battery safety issues and HM-215J addressing more general harmonization issues. The most noteworthy proposed amendments adopted in this final are:

- Requirement to report incidents involving batteries and battery-powered devices
- Clarification of the requirement that batteries and battery-powered devices and vehicles be offered for transportation and transported in a manner that prevents short-circuiting, the potential of a dangerous evolution of heat, damage to terminals, and, in the case of transportation by aircraft, unintentional activation.
- Clarification of the requirements for determining whether a battery is considered non-spillable.
- Requirement for a shipper of dry, sealed batteries to mark each package with the words ``not restricted" or, include notation

"not restricted" on the transport document such as air waybill if accompanies a shipment.

- Elimination of the requirement to disconnect the terminals when a battery-powered wheelchair or mobility aid is transported as checked baggage, provided the wheelchair or mobility aid design provides an effective means of preventing unintentional activation.

- Clarification of the requirements for the transport of dry batteries including a revision of the proper shipping name (Batteries, dry, sealed, n.o.s) used to describe dry batteries and a provision to limit the applicability of transport requirements to a certain size of battery.

In addition to the battery-related amendments noted above, the following amendments are also adopted to harmonize the HMR with the most recent revisions to the UN Recommendations, ICAO TI, and IMDG Code:

Hazardous Material Table (HMT): Amendments to the HMT at 49 CFR 172.101 to add, revise, and/or remove certain proper shipping names entries in the HMT.

Fuel Cells: Amendments to the HMT to add four new proper shipping names to describe the range of fuel used in fuel cell cartridges:

Small Quantity Exceptions: Amendments maintaining current allowances for small quantities and incorporating the UN and ICAO excepted quantity provisions for transportation by aircraft or vessel.

Incident Reporting: Amendments to provisions that except certain hazardous materials or commodities from the requirements of the HMR, including incident reporting requirements.

Organic Peroxide Tables: Amendments to the Organic Peroxide Tables to add, revise, or remove certain hazardous materials and provisions.

Incorporation by Reference: Amendments to incorporate by reference the updated ICAO TI, IMDG Code, TDG, UN Recommendations, and the addition of two new International Organizations for Standardization (ISO) standards.

Petitions for Rulemaking: In this final rule, PHMSA is addressing several petitions for rulemaking.

Requirements for Marine Pollutants: Amendments adopting a new marking for marine pollutants consistent with the marking adopted within the IMDG Code. The new classification criteria for marine pollutants adopted in the IMDG Code is not incorporated in the HMR.

The final rule became effective February 13, 2009. PHMSA is authorizing voluntary compliance beginning January 1, 2009. Except as specified in Sections 171.14, 171.25, 172.102, 172.448, and 178.703 as amended in the final rule, compliance with the amendments adopted in this final rule is delayed and required beginning January 1, 2010.

For further information regarding specific aspects of the final rule, you may contact T. Glenn Foster or Charles Betts, Office of Hazardous Materials Standards, telephone

(202) 366-8553, or Shane Kelley, International Standards, telephone (202) 366-0656, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, 1200 New Jersey Avenue, SE., 2nd Floor, Washington, DC 20590-0001.

References: 1. Federal Register (FR) volume 74, pages 2199 - 2270 (74FR2199), January 14, 2009. 2. Federal Register (FR) volume 73, page 44804 (73 FR 44804), July 31, 2008.

IATA Guidance Document on the Transport of Lithium Metal and Lithium Ion Batteries

By Abdul H. Khalid, Chemical Engineer, HTIS

On December 16, 2008, the International Air Transport Association (IATA) issued a guidance document titled, "Transport of Lithium Metal and Lithium Ion Batteries" that is based on the provisions set forth in the 2009/2010 Edition of the International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods (DG) by Air and the 50th Edition (2009) of the IATA Dangerous Goods Regulations (DGR). It is available online at: http://www.iata.org/NR/rdonlyres/31C08011-1A1E-49D6-A2D8-3D21A9DE887B/0/GuidanceDocumentonthetransportofLiBatt_2009V1.pdf.

As mentioned above, this document provides guidance for complying with provisions that are applicable to the transport of lithium batteries by air. The requirements, as described in the DGR, became **effective on January 1, 2009**. This document specifically explains and provides information on:

- Definitions
- Classification
- Exceptions
- Special Provisions
- Packaging provisions for lithium batteries
- Prohibitions
- Passengers Provisions

The regulations imposed on these commodities by the United States competent authorities (Department of Transportation (DOT) and Federal Aviation Administration (FAA) match the ICAO/IATA regulations addressed in this document. Also see related information at: http://www.iata.org/whatwedo/cargo/dangerous_goods/index.htm and http://safetravel.dot.gov.

For further information or questions on lithium metal or lithium ion batteries, you can contact the airline of your interest directly or the IATA Dangerous Goods Support team at: http://www.iata.org/whatwedo/.

Reference: IATA Guidance Document "Transport of Lithium Metal and Lithium Ion Batteries-December 16, 2008.

EPA News

Remember I Can B

By Beverly J Howell, Industrial Hygienist, HTIS

The Environmental Protection Agency's (EPA) Aging Initiative Website was created to assist with protecting the environmental health of older people. Due to the normal aging process, even older people in good health may experience increased health risks from

exposures to environmental pollutants. As we age, our bodies are more susceptible to hazards from the environment which may worsen chronic or life threatening conditions. Older people also have accumulated a lifetime of environmental and occupational contaminants which are capable of remaining in their bodies.

In order to prevent carbon monoxide poisoning, the EPA has released a new fact sheet on "Preventing Carbon Monoxide Poisoning", *Information for Older Adults and their Caregivers"*. The **Remember I CAN B** translates to:

- **I**nstall CO alarms near sleeping areas.
- **C**heck heating systems and fuel-burning appliances annually.
- **A**void the use of non-vented combustion appliance.
- **N**ever burn fuels indoors except in devices such as stoves or furnaces that are made for safe use.
- **B**e attentive to possible symptoms of CO poisoning.

Carbon monoxide has long been labeled the silent killer, because you can't see or smell carbon monoxide, but at high levels it can kill a person in minutes. Carbon monoxide (CO) is produced whenever any fuel such as gas, oil, kerosene, wood, or charcoal is burned. If appliances that burn fuel are maintained and used properly, the amount of CO produced is usually not hazardous. However, if appliances are not working properly or are used incorrectly, dangerous levels of CO can result. Hundreds of people die accidentally every year from CO poisoning caused by malfunctioning or improperly used fuel-burning appliances. Even more die from CO produced by idling cars. Fetuses, infants, elderly people, and people with anemia or with a history of heart or respiratory disease can be especially susceptible.

It is estimated that, annually, approximately 500 deaths and 15,000 visits to emergency rooms are a result of unintentional CO poisoning. Additionally, it is sometimes difficult to distinguish between CO poisoning and the flu. It is most likely CO poisoning if:

- You feel better when you are away from your home;
- Several people in the home get sick at the same time (the flu is usually passed from person to person);
- The family members who are most affected spend the most time in the home;
- Symptoms occur or get worse shortly after turning on a fuel-burning device (furnace, oven, fireplace) or running a vehicle in attached garage;
- Indoor pets also appear ill (pets may experience symptoms first);

- You don't have a fever or generalized aching and swollen lymph nodes typical with a cold or virus or flu; or

- Symptoms appear at the same time as signs of inappropriate ventilation, maintenance, or operation of fuel-burning devices.

Using the following measures can help in preventing CO poisoning:

- Do have your heating system, water heater and any other gas, oil, or coal burning appliances serviced by a qualified technician every year.

- Do install a battery-operated CO detector in your home and check or replace the battery when you change the time on your clocks each spring and fall.

- Do seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed or nauseous.

- Don't use a generator, charcoal grill, camp stove, or other gasoline or charcoal-burning device inside your home, basement or garage or near a window.

- Don't run a car or truck inside a garage attached to your house, even if you leave the door open.

- Don't burn anything in a stove or fireplace that isn't vented.

- Don't heat your house with a gas oven.

Reference: 1. Department of Health and Human Services, Center for Disease Control and Prevention, "Carbon Monoxide Poisoning Program" http://www.cdc.gov/co/default.htm
2. Environmental Protection Agency, Aging Initiative, Preventing Carbon Monoxide Poisoning- Fact Sheet, January, 2009 http://www.cdc.gov/co/default.htm

FDA and EPA Programs on GAO High Risk List

By Ariel Rosa, Environmental Protection Specialist, HTIS

In a January 22, 2009 press release, the Government Accountability Office (GAO) reported that the Food and Drug Administration's oversight of medical products and the Environmental Protection Agency's (EPA) assessment and control of toxic chemicals are among the federal programs in greatest need of reform.

The GAO added these two programs along with the regulatory system governing U.S. financial institutions to its list of

thirty government programs at high risk for waste, fraud, abuse, and mismanagement. "The three areas added to this year's High-Risk List are all vital to the public's well being. I am hopeful that the inclusion of these issues will lead to greater scrutiny and spur needed reforms ", said Gene L. Dodaro, acting comptroller general of the U.S. and head of GAO.
The list is updated every two years and released at the start of each new Congress to help in setting oversight agendas.

The combination of new laws, complexity of items submitted to the FDA for approval and the globalization of the medical products industry are challenging the FDA's ability to guarantee the safety and effectiveness of drugs, biologics, and medical devices. As a result the American consumer may not be adequately protected from unsafe and ineffective medical products. GAO recommends that the FDA improve the data it uses to manage the foreign drug inspection program, do more inspections of foreign establishments that manufacture drugs or medical devices, review more systemically the claims made in drug advertising and promotional material, and ensure that drug sponsors accurately report clinical trial results.

The GAO says that the EPA's Integrated Risk Information System, which contains assessments of more than 500 toxic chemicals, is at serious risk of becoming obsolete because the agency has been unable to keep its existing assessments current or to complete assessments of important chemicals of concern. According to the report, the EPA has finished only nine assessments in the past three years and at the end of 2007 most of the 70 ongoing assessments had been underway for more than five years.

The GAO recommends that the EPA streamline and increase the transparency of the assessment process. The agency also requires more authority than currently provided in the Toxics Substance Control Act to obtain health and safety information from the chemical industry and to shift more of the burden to chemical companies to demonstrate the safety of their products.

Recent Congresses and administrations have been particularly alert to the GAO's High-Risk List and have used its findings to help tailor agency-specific solutions as well as broader initiatives across the government.

"The Department of Defense continues to dominate the High-Risk List. The military's lack of progress is of growing concern to the GAO. According to Dodaro, the DOD owns eight areas on the High-Risk List outright and it shares government wide responsibility for an additional seven areas.

Reference:
www.gao.gov/new.items/d09271.pdf.

EPA Revises its Definition of VOCs Excluding Propylene Carbonate and Dimethyl Carbonate

By Abdul H. Khalid, Chemical Engineer, HTIS

On January 13, 2009, the US Environmental Protection Agency (EPA) issued a final rule which revised its definition of volatile organic compounds (VOCs) used by states in preparing state implementation plans (SIPs) to attain the national ambient air quality standard for ozone under Title I of the Clean Air Act (CAA). This

revision also adds two compounds, namely propylene carbonate and dimethyl carbonate, to the list of compounds that are excluded from the definition of VOC on the basis that these compounds make a negligible contribution to tropospheric ozone formation. The full text of this final rule is available online at: http://www.epa.gov/ttn/oarpg/t1/fr_notices/voc_exemp_fr_011309.pdf

Volatile organic compounds react with other substances in the presence of sunlight to create ozone, which contributes to health problems such as heart and lung disease. It has been a policy of the EPA that organic compounds with a negligible level of reactivity should be excluded from the regulatory definition of VOC and the agency must concentrate on VOCs compounds that do significantly increase ozone concentration. The agency uses ethane as a baseline for measuring reactivity. Compounds that are less reactive than ethane are considered to have a negligible impact on ozone formation according to the EPA.

Propylene carbonate (CAS registry number 108-32-7) is an odorless non-viscous clear liquid with a low vapor pressure (0.023 mmHg at 20 deg C) and low evaporation rate compared to many other commonly used organic solvents. It has been used in cosmetics, as an adhesive component in food packaging, as a solvent for plasticizers and synthetic fibers and polymers including as a solvent for aerial pesticide application. Dimethyl carbonate (CAS registry number 616-38-6) may be used as a solvent in paints and coatings and can also be used as a fuel additive. According to the EPA, the two compounds are less reactive than ethane and therefore, excluded from the definition of VOC.

States are not obligated to exclude either compound from their required volatile organic compound control measures for purposes of meeting air quality standards**. However, once the rule takes effect neither propylene carbonate nor dimethyl carbonate can be included in inventories for volatile organic compound emissions to demonstrate reasonable further progress toward attaining air quality standards.**

For more information on this final rule, contact William L. Johnson, Office of Air Quality Planning, Air Quality Division, Research Triangle Park, NC 277711. Phone: 919-541-5245; FAX: 919-541-0842 or e-mail at: Johnson.WlliamL@epa..mil

Reference: 1. EPA's final rule excluding propylene carbonate and dimethyl carbonate from the definition of volatile organic compounds is available at http://www.epa.gov/ttn/oarpg/t1pfpr.html
2. Proposed rule Revision to Definition of Volatile Organic Compounds--Exclusion of Compounds http://www.epa.gov/EPA-AIR/2007/October/Day-01/a19324.htm

New Assessment Highlights Effective Mercury-Free Alternatives

Reprint submitted by Ariel Rosa, HTIS

On November 6, 2008 the Environmental Protection Agency announced that according to a just-released preliminary assessment of the uses of elemental mercury in a number of products there are alternatives to mercury. The EPA concluded that switches, relays, button cell batteries, non-fever

thermometers, and measuring devices, such as thermostats, don't have to contain mercury.

Under the Chemical Assessment and Management Program, the EPA evaluated the use of elemental mercury in certain products and the availability of effective, economical mercury-free alternatives. The assessment determined that the use of mercury in certain products poses a "high-priority, special concern." The agency plans to take prompt regulatory and voluntary action to encourage the use of mercury-free alternatives and reduce the use of mercury in products.

The EPA has also developed a searchable database that pulls together publicly available information from various sources to help identify consumer and commercial products that contain mercury and their possible non-mercury alternatives. The EPA encourages people to use non-mercury alternatives whenever possible as an important way to prevent exposure to mercury, including exposure due to breakage.

Reference: 1. http://www.epa.gov/chemrtk/hpvis/index.html 2. http://www.epa.gov/mercury/database.htm

Unified Group Ration-Express

By Abdul H. Khalid, Chemical Engineer, HTIS

In a recent environmental update, the U.S. Army Environmental Command (USAEC) published an article, titled, "Unified Group Ration-Express Heater Taken off Hazardous Waste List", in the Army Environmental News, Vol. 20, No.1, winter 2008. The full text of this article is available online at: http://aec.army.mil/usaec/publicaffairs/update/win08/win0807.html

The Army requested the EPA's guidance on the applicability of Resource Conservation and Recovery Act (RCRA) hazardous waste regulations to dispose of Unified Group Ration-Express (UGR-E). The Army provided the Material Safety Data Sheet (MSDS) on the flameless heaters contained in UGR-E (Truetech, Inc.) and the data by the Research, Development, and Engineering command (RDECOM). The EPA reviewed the MSDS and the results of army testing and determined that the heaters react in a controlled way, providing enough heat for preparing food, but not enough to offer a risk of explosion or fire. Since saline water activates the heaters, the chance of explosion through exposure to fresh water, such as in a landfill, is even more remote. **The EPA guidance may also apply to any expired UGR-Es that might be in storage**.

Where possible, soldiers should remove unused UGR-E heaters sealed in their original packaging from the UGR-E box and return them for recycling or reuse to the Defense Resource Management Office or the heater manufacturer.

In March 2007, the EPA issued a guidance letter that provided guidance on the proper Disposal of UGR-E as applicable under RCRA hazardous waste regulations. For further information on this document, visit the EPA's RCRA website at: http://yosemite.epa.gov/osw/rcra.nsf/ea6e50dc6214725285256bf00063269d/0bb584e09a9a71958525731000331ceb!OpenDocument.

This article is based on the EPA's views pertaining to the disposal of UGR-E. The EPA authorizes states to implement their own RCRA hazardous waste

programs. **States have their own regulations and they may be more stringent than the Federal Regulations.** DOD environmental specialists or the hazardous waste mangers should check facility environmental offices and with the appropriate state agencies or the EPA regional offices if the state is not authorized to confirm the requirements as applicable to the UGR-E ready for disposal at the DOD facilities.

Reference: U.S. Army Environmental Command, Army Environmental News. Vol. 20, No.1, winter 2008 "Unified Group Ration-Express Heater Taken off Hazardous Waste List".

NIOSH News

Diacetyl Flavoring in Cooking Products a Potential Health Ricks to Food Workers

By Abdul H. Khalid, Chemical Engineer, HTIS

Professional cooks and food workers are concerned about exposures to diacetyl used in food flavorings additives. Previous studies conducted by different agencies, particularly by the National Institute for Occupational Safety and Health (NIOSH), show that exposure to diacetyl used in butter flavoring agent may contribute to the development of a serious lung disease called bronchiolitis obliterans.

The main respiratory symptoms experienced by workers affected by bronchiolitis obliterans include cough (usually without phlegm), wheezing, and worsening shortness of breath on exertion. The severity of the lung symptoms can range from only a mild cough to severe cough and shortness of breath on exertion. These symptoms typically do not improve when the worker goes home at the end of the workday or on weekends or vacations. Usually these symptoms are gradual in onset and progressive, but severe symptoms can occur suddenly. Some workers may experience fever, night sweats, and weight loss. Before arriving at a final diagnosis, doctors of affected workers initially thought that the symptoms might be due to asthma, chronic bronchitis, emphysema, pneumonia, or smoking.

Some members of the U.S. Congress have called for a federal investigation into the use of diacetyl in flavoring in commercial and home cooking products. NIOSH is the lead agency to investigate the uses of the additive in flavorings and cooking oils in workplaces where potential risks are anticipated among food workers. NIOSH is continuing to evaluate new information pertaining to the risk of bronchiolitis obliterans from occupational exposures to flavorings, in order to determine appropriate further steps to help safeguard workers' health. NIOSH wants to hear from workers who have a lung problem they suspect might be related to their work with flavorings. Workers, labor union representatives, and company management at workplaces where workers may be exposed to flavoring-related chemicals can request a NIOSH health hazard evaluation of their facility (www.cdc.gov/niosh/hhe/). NIOSH also wants to hear from health-care providers who suspect flavorings-induced occupational or non-occupational bronchiolitis obliterans in a patient. NIOSH contact information can be found at the following link (www.cdc.gov/niosh/topics/flavorings/contact.html) and can be used to inquire about or provide

information regarding lung disease that may be related to exposures to flavoring chemicals. Cases should also be reported to local and state public health departments.

The Occupational Safety and Health Administration (OSHA) is concerned with and has held discussions on how to protect employees from the adverse health effects of diacetyl. Exposure to high levels of diacetyl has been linked to lung disease among workers in factories where microwave popcorns are made. Currently, OSHA does not regulate the use of diacetyl in the food industry but conducts its own investigations as more people continue to come forward with similar claims and conditions.

There is a need for testing exposure to diacetyl used in flavoring under actual working conditions to determine exposures to professional cooks and other food workers. Many physicians, industrial hygienists and other occupational health specialists from NIOSH are interested in methods of research that can be used in the identification of the additives that are causing lung disease.

Some states are also involved in reducing exposure to diacetyl in the work place and may require new safety and health standard. California may issue some regulations to control diacetyl exposure in flavoring at the workplaces. Identification and evaluation of potential risks from diacetyl in flavorings additives are essential before issuing some regulations to control the overexposure to diacetyl.

Reference: 1. California Department of Health services, web site at: http://www.dhs.ca.gov/ohb/flavorings.htm. 2. NIOSH Safety and Health Topics: Flavorings-Related Lung Disease, web site at: http://www.cdc.gov/niosh/topics/flavorings/.

OSHA News

OSHA Revises Field Operations Manual

By Ariel Rosa, Environmental Protection Specialist, HTIS

On January 9, 2009 the Occupational Safety and Health Administration (OSHA) released its revised Field Operations Manual (FOM) replacing the September 26, 1994 Instruction that implemented the OSHA Field Inspection Reference Manual (FIRM).

The FOM is a revision of OSHA's enforcement policies and procedures that provides OSHA Compliance Officers with a single source of updated information and guidance to more effectively protect employees from occupational injuries, illnesses, and fatalities.

The manual assists Compliance Officers in scheduling and conducting inspections, enforcing regulations, issuing citations, proposing penalties, and encouraging continual improvement in workplace safety and health. The manual also guides Compliance Officers on how to inform employers about cooperative programs such as On-Site Consultation, Strategic Partnerships, and the Voluntary Protection Program to help them eliminate potential or existing hazards from the workplace.

"The new Field Operations Manual is a comprehensive resource of existing OSHA policy and procedural documents," said Acting Assistant Secretary of Labor for OSHA Thomas M. Stohler. "It gives Compliance Officers important guidance in implementing OSHA's

balanced approach to workplace safety and health: enforcement, education and training, and cooperative programs. The Field Operations Manual will also be a resource for employees and employers, giving them a consolidated reference on how OSHA expects workplaces to be made safe and healthy. This is part of OSHA's continuing commitment to make its standards and enforcement activities transparent and understandable to all parties."

Reference:
http://www.osha.gov/OshDoc/Directive_pdf/CPL_02-00-148.pdf

Other News

Nanocoatings for a Greener Future

By Moraima Lugo-Millán, Chemist, HTIS

Nanotechnology is already offering intelligent solutions to almost all sectors of engineering, manufacturing, research and development. Nanocoatings and ultra thin films are a leading example of nanotechnology making a difference in a wide variety of applications from improving safety in cars, aviation, marine and military applications to bacteria resistant coatings.

A nanocoating is synthesized using molecular engineering techniques to create a nano-structured polymer/coating. Recently, nanocoatings have been extensively used as self-heating coatings, nanofilms for optics, displays and photonics, soil-resistant nanofilms for architectural glass, anti-corrosion, anti-scratching and anti-fogging agents, but more important as energy efficiency tools in industrial applications.

Industrial energy efficiency is directly linked to the wear and degradation of materials used in processing applications. When moving parts are subject to friction, they require more energy to move, they are less efficient and tend to wear out over time. The idea is to manufacture parts with tough slippery surfaces, minimizing friction and energy. In this aspect parts will last longer and therefore reduce industrial costs. The preferred route to minimizing wear is through application of protective, hard coating to contacting surfaces so these surfaces generate less friction and resist wear. With lower friction between contacting surfaces, less energy is required to overcome frictional forces during start up and operation, thereby increasing energy efficiency. This has a significant effect in boosting the efficiency of hydraulic pumps that are used in all kinds of industrial and commercial applications, optimizing cutting performance in machine tooling, and increasing system reliability. Government calculations show that using nanocoatings in industrial machinery could reduce U.S. industrial energy usage by 31 trillion BTUs annually by 2030 and an associated energy cost savings of $187 million per year.

Researchers in England have developed a new anti-reflective nanocoating that boosts the efficiency of solar panels and allows sunlight to be absorbed from almost any angle. A typical untreated silicon solar cell absorbs just over two thirds of the sunlight it receives, with the nanoengineered coating that figures rises to 96.21 percent. Researchers report that gains in absorption were consistent across the entire spectrum of sunlight - ultraviolet, visible light and infrared. Solar nanocoatings are made of silicon dioxide and titanium dioxide

nanorods positioned at an oblique angle to get maximum efficiency when converting solar power into electricity. This new coating could be applied to just about any photovoltaic material and it is cost effective.

Nanocoatings possess unique characteristics that are important in military, aviation and auto applications. These tiny particles are extremely flexible, adhere easily, and are highly resistant to corrosion and microbial growth. Nanocoatings for marine purposes have been specifically designed to reduce barnacle adhesion and water drag resistance, while increasing the life of important marine paint surfaces. Nanocoatings in aviation and military applications have been designed to significantly reduce ice adhesion, de-icing maintenance costs, and reduce the coefficient of wind and water drag resistance, thereby decreasing the cost of jet fuel. Also aviation coatings have extreme scratch, chemical and UV resistance. Some manufacturers are working on producing nano paint that seals and protects automotive components. This reduces the environmental impact of producing cars by slashing the amount of energy and materials needed. Because nanocoatings eliminate the need for hazardous chemicals currently in use, they could reduce the cost of tracking emissions and disposing of solvents.

Government, industries and academia are using their expertise, unique capabilities and interdisciplinary collaborations to solve global challenges. Nanocoatings play a very important role in reaching this goal, because of their great variety of applications. Coatings and paints are almost in every consumer product. Nanocoatings are cheaper, easier to apply and more environmentally friendly than substances currently in use. For these reasons nanotechnology based coatings could replace many of today's industrial paints and coatings, thereby promising a greener future.

Reference:

1. http://www1.eere.energy.gov/industry/imf/pdfs/15101_nanocoatings.pdf
2. http://www.external.ameslab.gov/final/News/2008rel/Nanocoatings.html
3. http://www.cnn.com/2008/TECH/science/11/12/solar.coating/

On The WEB

OSHA's Combustible Dust Safety & Health Topics Website: The Occupational Safety and Health Administration (OSHA) introduced the Combustible Dust Safety and Health Topics at: http://www.osha.gov/dsg/combustibledust/index.html to help understand the potential safety and health hazards of combustible dust including recommendations to prevent and control these hazards. (AK)

EPA's Environmental Indicators Gateway Website: The U. S. Environmental Protection Agency (EPA) has a website at http://www.epa.gov/indicators/ that provides better public access to EPA generated environmental indicators and health information. (AK)

OSHA's Website on Preventing Falls in Construction: The Occupational Safety and Health Administration (OSHA), has a website designed to help prevent falls associated with construction work. The preventing falls in construction is available at: http://www.osha.gov/doc/falls/preventingfalls.html (AK)

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