UNH Media Relations

UNHCEMS Offers Colleges A Solution To New DHS Chemical Standard

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DURHAM, N.H. - Universities and colleges throughout the U.S. are scrambling to meet the government's latest edict on campus security. To comply with the Department of Homeland Security's Chemical Facility Anti-Terrorism Standards, campus safety officials must file an exhaustive report on the quantity and location of approximately 300 "chemicals of interest."

A web-deployed chemical inventory management system developed by the University of New Hampshire, UNHCEMS®, can help campus safety officials prepare the preliminary "Top-Screen" report which federal officials will use to assess the level of risk of a terrorist attack.

The Top-Screen questionnaire is 111 pages long and takes an estimated 30 hours to complete, according to the DHS website. Critical information includes the concentration and amount of certain chemicals under various danger scenarios (release, theft or attack), location of storage or use, or under transport.

Without an automated inventory system, campus staff must assess each chemical in every laboratory and manually record and tabulate the data according to DHS standards, which vary according to the chemical and how it could be used.

"While some (academics) adhere to broad security strategies, others admitted having an incomplete or non-existent inventory of the contents and quantities of chemicals and no affordable or timely means of compiling an inventory," reads a statement by DHS in the Nov. 20, 2007 Federal Register (vol. 72, no. 223). Law requires compliance within 60 days of that issue of the Federal Register; however, extensions could be requested.

A new module for UNHCEMS (UNH Chemical Environmental Management System) software automatically tabulates data, converts liquid units to pounds, and indicates to safety officials whether the DHS quantity threshold has been met, or whether there is a problem with data logic. "The UNHCEMS report greatly reduces the time and effort to complete the Top-Screen report and assures us that we are in compliance," said Brad Manning, director of UNH Office of Environmental Health and Safety.

Designed for the academic environment with a low annual subscription fee, UNHCEMS is cited in the 2006 Best Management Practices for Colleges and Universities publication of the federal Environmental Protection Agency. It is in use at the College of the Holy Cross, Brown University, University of Massachusetts at Amherst, University of Alabama, throughout the University System of New Hampshire, and at two large high schools.

UNHCEMS is a barcode-based system to record and manage information about the quantity, location and properties of chemical stock, biological agents, radioactive materials and hazardous waste. It automates record-keeping and waste removal requests, allows campus labs to share materials, and can broadcast messages.

Campus safety officials can use UNHCEMS to provide periodic reports to emergency service providers. Equipped with this information, a dispatcher can tell firefighters or hazmat teams en route to the scene of a spill or fire whether the chemicals in a lab are flammable, water reactive, corrosive or explosive, and furthermore, what chemicals are in surrounding rooms, allowing them to prepare a response before they arrive.

With UNHCEMS, lab staff can print door signs with symbols required by the National Fire Protection Association and search a Material Safety Data Sheets archive of more than 23,000 documents, updated regularly. Other features are a radioactive usage log and custom reports for compliance and alert conditions.

Inventory updates can be performed quickly with a hand-held PC and HandyCEMS software. UNHCEMS is not a purchasing system but it can be modified by self-hosted licensees to add a procurement module, customize categories and add reporting functions.

The system runs on Windows 2000/XP or Linux and all software requirements can be met with free, open-source software. Specific hardware is not required although most sites run UNHCEMS on a dedicated server.

At UNH, all incoming shipments are delivered to a central receiving station for barcoding and data entry, with delivery to the lab within hours. A key factor in the rollout and effective use of UNHCEMS is the appointment of a database administrator to manage implementation and maintenance.

"Each user needs a 'champion' who can oversee the integration of UNHCEMS, provide on-site user support and training, and act as primary contact for that campus," said Patrick Messer, associate director of the UNH Research Computing Center, which developed and administers the program.

More information is on the UNHCEMS website, www.cems-info.sr.unh.edu. For licensing inquiries, contact Maria Emanuel, licensing manager, UNH Office for Research Partnerships and Commercialization, 603-862-4377, maria.emanuel@unh.edu.

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Logo available to download:

http://www.unh.edu//news/img/unhCemsLogo.gif

Additional resources:

DHS Chemical Security Assessment Tool

http://www.dhs.gov/xprevprot/programs/gc_1169501486197.shtm

DHS Chemicals of Interest (Federal Register)
http://www.dhs.gov/xlibrary/assets/chemsec_appendixa-chemicalofinterestlist.pdf

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