

Securing Chemical Facilities

Chemical Facility Anti-Terrorism Standards Establish Requirements Based on Risk Levels

By Tom Dean, PE, and Jason Turner, PE

As the nation marked the sixth anniversary of the tragedies of Sept. 11, 2001, the U.S. government took additional steps to safeguard and secure chemical and covered facilities against potential terrorist actions.

The Department of Homeland Security (DHS) developed Chemical Facility Anti-Terrorism Standards (CFATS), which establish risk-based performance standards for the security of the nation's chemical and covered facilities labeled "high-risk."

Effective June 8, 2007, facilities covered under the standards are required to prepare specific assessments that identify security vulnerabilities and subsequent plans to protect those facilities. Some facilities are exempt. (See Table 1.) The assessments are called Security Vulnerability Assessments (SVAs), and the plans are known as Site Security Plans (SSPs).

In addition to SVAs and SSPs, this regulation mandates audits and inspections to determine compliance, allows for civil penalties for any violations and empowers the Secretary of Homeland Security to cease operations if the facility is not in compliance with the regulation's requirements.

The CFATS regulations are being implemented in phases, working with those chemical facilities presenting the highest security risks first.

Risk-Based Performance Standards

DHS has identified 19 areas of concern, or Risk-Based Performance Standards (RBPS), that chemical and covered facilities must satisfy in their assessments and security plans.

These standards allow facilities to select the most cost-effective combination of measures to achieve the appropriate level of security for their facility. The RBPS that a facility must meet will depend upon its tier and the security concerns surrounding its assets. (See Table 2.)

Exempt Facilities

- Facilities regulated pursuant to the Maritime Transportation Security Act
- Public water systems, as defined in the Safe Drinking Water Act
- Water treatment facilities, as defined in the federal Water Pollution Control Act
- Facilities owned or operated by the Department of Defense or the Department of Energy
- Facilities subject to regulation by the Nuclear Regulatory Commission

Table 1: Facilities exempt from the CFATS regulations.

Chemical Security Assessment Tool

DHS developed the Chemical Security Assessment Tool (CSAT) to identify chemical or covered facilities that meet its criteria for "high risk." CSAT is a secure, Web-based system located on the DHS Web site that includes four tools:

- Facility registration
- Top-Screen questionnaire
- Security Vulnerability Assessments tool
- Site Security Plans template

Upon registration, any chemical or covered facility that manufactures, uses, stores or distributes chemicals identified as "chemicals of interest" at or above the screening threshold quantity (STQ) was mandated to complete and submit a CSAT Top-Screen questionnaire by Aug. 7, 2007.

The Top-Screen questionnaires allow DHS officials to preliminarily place facilities within a risk-based tier structure. Facilities are placed in one of four tiers, with tier 1 reserved for those facilities posing the highest risk and tier 4 reserved for those posing the lowest risk.

Once ranked, DHS requires facilities preliminarily placed into tiers 1-3 to complete a CSAT SVA within 90 calendar days of notification from DHS.

Once a facility has been grouped into tiers 1-3 and designated "high-risk," those facilities must develop a CSAT SSP for DHS to review and



Tom Dean, PE, is the department manager of the instrument, electrical and controls department in the Burns & McDonnell Process & Industrial Division. He received bachelor's degrees in electrical engineering and computer engineering from the University of Missouri-Columbia in 1990 and is a registered professional engineer in Virginia and Pennsylvania.



Jason Turner, PE, is a project engineer in the Burns & McDonnell Process & Industrial Group. He received his bachelor's degree in electrical engineering from the University of Texas in 1996 and is a registered professional engineer in Kansas.

For more information, please e-mail: tdean@burnsmcd.com or jturner@burnsmcd.com

approve within 120 calendar days of notification from DHS. To assist facilities with this task, DHS has placed site plan templates on its Web site. An SSP describes security measures (physical and procedural) already in place at a facility as well as future security measures that the facility plans to implement. The SSP also serves to address the security vulnerabilities identified in the SVA. Once the plan is approved by DHS, officials will conduct inspections to verify that the facility is successfully implementing the approved SSP. Facilities ranked as tiers 1 or 2 are required to update SSPs every two years, while facilities ranked as tiers 3 and 4 are required to update SSPs every three years.

The information submitted by facilities in relation to CFATS, including SVAs and SSPs, is designated as Chemical-terrorism Vulnerability Information (CVI), which specifies information as classified and safeguards certain information and records from being publicly and widely distributed. In addition to SVAs and SSPs, documents related to the review and approval of these reports, alternate security plans, and documents related to inspections and audits are also deemed CVI. Only eligible people are able to obtain access to these records, including facility employees; federal employees, contractors and grantees; and state/local government employees.

Ongoing Communication

A key element for both DHS and those facilities being monitored is to maintain constant and consistent communication about the security assessments, site plans and all related information. Chemical facilities are required to designate a person responsible for the information submitted into the CSAT system. This designee is responsible for submitting the Top-Screen, SVA and SSP for a particular facility. The submitter must be an officer of the corporation or be designated by an officer of the corporation and reside in the United States.

To ensure responsive communication, DHS designated a coordinating official who is available to consult and provide technical assistance to facilities. Consultations are available to all facilities, though facilities must initiate the process with DHS. If a facility modifies its processes or the types/quantities of materials it possesses, consultation must

RBPS at Chemical/Covered Facilities

- Restricted area perimeter
- Securing site assets
- Screening and access controls
- Deter, detect and delay
- Shipping, receipt and storage
- Theft and diversion
- Sabotage
- Cyber
- Response
- Monitoring
- Training
- Personnel surety
- Elevated threats
- Specific threats, vulnerabilities or risks
- Reporting of significant security incidents
- Significant security incidents and suspicious activities
- Officials and organizations
- Records
- Others as determined by DHS

Table 2: The 19 Risk-Based Performance Standards identified by the Department of Homeland Security.

be requested. In addition, if an SVA or SSP has been deemed unsatisfactory, the facility will be notified in writing and DHS consultations will follow.

DHS will inspect high-risk chemical facilities at regular intervals with higher tier facilities being inspected first and more frequently. The department may also inspect a facility at any time based on new information or security concerns. DHS will provide facilities a minimum of 24 hours notice for compliance inspections unless specific security concerns demand immediate attention.

Summary

The CFATS regulation is estimated to cost the industry \$3.6 billion over the course of the first three years of implementation, though it will greatly aid in the improved security of the nation's chemical and covered facilities. There is a significant amount of work to be done by the industry in order to adhere to these new standards, but the benefits outweigh the potential consequences with better protection of our nation's chemical facilities, securing both the industry and its surrounding communities.