



Department of Homeland Security Chemical Facility Anti-Terrorism Standard (6 CFR 27)

*Preparing to Meet the New Chemical
Facility Anti-Terrorism Standard*

September 19, 2007





Introduction of Speaker



- Over 20 years experience providing environmental compliance and environmental management systems support
- Developed chemical management and inventory tools and systems that enable clients to fully understand the impact of new regulations on their operations





Agenda



- New regulatory program description
- What is this regulation?
- Where did it come from?
- Does it apply to my facility?
- What am I required to do?
 - Applicability Analysis
 - Top-Screen
 - Security Vulnerability Assessment
 - Site Security Plan
- Notes about CVI





EHS Leadership & Management System Building Blocks



Internal Communications

Organizational Leadership



Chemical Inventory



Operational & Material Changes

Tracking Regulatory Changes





Recent News



Alleged 2007 bomb plot in Germany

Following an extensive nine-month investigation, involving some 300 people, three men were arrested on 5 September 2007 while leaving a rented cottage in the Oberschledorn district of Medebach, Germany where they were alleged to have stored 700 kg (1,542 lb) of a hydrogen peroxide-based mixture and military-grade detonators and were attempting to build car bombs.





Chicken Farms as Terror Threats?



The Associated Press Reported That The CFAT Rule Could Affect 40,000 Farms



"By industry counts, up to 40,000 farms could be affected by the new security proposal." ("Chicken Farms as Terror Threats?" AP, August 22, 2007)





Chemical Facility Anti-Terrorism Standard (CFAT)





Key Elements of this Regulation



- Determine if you are a *Covered Chemical Facility*

- Based on Materials *Possessed*



- DHS will Determine High Risk vs. Low Risk

- High Risk Facilities will Complete *Security Vulnerability Assessment (SVA)*



- DHS will assign tier ranking to *High Risk* facilities



- Complete and submit a *Site Security Plan*





Where is this Regulation From?



Dept. of Homeland Security
Appropriations Act, 2007
Section 550 (a)

- Initial Notice – Dec 28, 2006
Federal Register Notice
- April Federal Register *Interim Final Regulations*
- Final Appendix A (To be issued)
- Expiration (Section 550 (b))
 - Expires three years from promulgation of the Act (October 2010), or
 - When specifically superseded





How Does this Regulation Relate to Other Rules?



- It is new
- It is additional
- It replaces nothing



- Data necessary to satisfy other rules are the backbone of the *Applicability Determination Phase*





Non-Compliance Consequences

- What are the consequences?
 - Designation by DHS as a *Presumptively High Risk Facility* (for failure to submit)
 - Orders to comply (6 CFR 27.300)
 - Financial penalties (6 CFR 27.305)
 - Up to \$25,000 / day
 - Facility closure until compliance (6 CFR 27.310)
- How are consequences triggered?
 - Authority to inspect *Chemical Facilities*





What Do You Need to Do?



- Gather the data
- Perform an internal applicability review
- DHS applicability through *Top-Screen* tool
- Prepare to Respond to DHS Request for a *Security Vulnerability Assessment (SVA)*
- Prepare and implement a system to review chemicals entering the facility to capture future applicability
 - New chemicals / changes in amounts can require first time applicability or redo of *Top-Screen*





Chemical Facility as defined by this rule includes:

- Chemical manufacturing
- Chemical distribution
- Other manufacturing that uses chemicals
- Power plants with water treatment / air emission control chemicals
- Warehousing operations





How DHS will assign a Level of Security Risk -- Consequence



Risk = f (consequence; vulnerability; threat)



Where:

- Consequence = Criticality
- Vulnerability = likelihood of success if launched
- Threat = likelihood of being launched



Risk characterization decisions will be made by the DHS





What Will This Cost?



That Depends...

- *Covered Chemical Facility*
- What are the specific security risks?
 - Consequence Based
 - Nature of hazards
 - Location of facility
 - Existing controls
- Current level of security maintained
- Biggest cost likely to be *Security Infrastructure* for inadequately protected assets





Applicability Determination



- Two Step Process

- Step 1 - Self-Assessment
- Step 2 – DSH review – *Top-Screen*



- Frequency of Determination

- Initial (60 days after final Appendix A)
- On-going / Programmatic (Whenever chemicals exceed STQ; new chemicals are possessed; whenever Appendix A is revised)





Step 1 –Chemical Facility Determination



- Appendix A list (Still Draft as of 9/18/2007)

- *Possess*

- *Any amount*

- *At any time during the year*



- Compare to chemical inventory

- Location of materials on-site





Draft Appendix A



- List of 344 chemicals
 - By Name and By CAS Number
- Screening Threshold Quantities (STQ)
 - Exceeding means that you need to complete the Top-Screen Tool
 - Not Necessarily a *Covered Chemical Facility*
- *Any Amount* – Means any amount
- Mixtures – Not exempt and not clear
- Waste – Do we count chemicals in waste?





Chemicals of Concern -- Categories



- Not in the regulation – in *Top-Screen*
 - *Toxic*
 - *Flammable*
 - *Explosive*



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- *Explosive/IED Precursor*
 - *Weapons of Mass Effect (WME)*
 - *Chemical Weapon / Chemical Weapon Precursors*



- *Sabotage/Contamination Chemicals*
- *Mission Critical Chemicals*
- *Economically Critical Chemicals*





Appendix A: DHS Chemicals of Interest (Examples)

Chemical & Screening Threshold Quantity (STQ) (lbs)



Acetone	2,000	Formaldehyde	11,250
Ammonia (anhydrous)	7,500	HCl	11,250
Ammonia	15,000	Hydrogen	7,500
Ammonium nitrate	2,000	Hydrogen peroxide	2,000
Arsine	Any	Hydrogen sulfide	Any
Boron trifluoride	Any	Methane	7,500
Bromine	7,500	Phosphine	Any
Carbon monoxide	Any	Phosphorus	Any
Chlorine	1,875	Propane	7,500
Chlorine dioxide	2,000	Silicon tetrachloride	2,000
Chlorine trifluoride	Any	Urea	2,000
Dimethylamine	7,500	Urea nitrate	2,000
Fluorine	Any	Vinyl acetate	11,250



Man Portable Containers





Bulk Storage





Process Vessels and Piping





Propane including portable bottles





Step 1 - Internal Applicability Assessment



- Data quality standards -- regulation is silent
 - Officer of the company or designee (submitter) must certify accuracy
 - Organizational and personal data quality requirements
- Data sources
 - Manufacturing management systems
 - MSDS / HMIS management services





Data Quality Challenges



- Static Nature of Annual Inventory
- Capability of Systems such as SAP
- Small lot purchasing (i.e. "P cards")
- Customer materials for testing
- Vendor materials for R&D
- Frequency of audits of HMIS
- Extent of audits
- *Legacy* items still on inventory
- No longer used items in stock



Data Sources

Beware of Low Thresholds / *Any Amount*



- Review chemical purchase / inventory management systems
- Review existing Hazardous Material Inventory System (HMIS)
- Review other chemical use regulatory reports (i.e. EPCRA Tier II, TRI, etc.)
- Perform a site walk-through--observe
- Interview select facility personnel





Are you Out?



- Internal Applicability Finding that no Chemicals exceed Screening Threshold Quantities



- Keep Record of your review
- No further action



- System of Ongoing Monitoring of Chemicals Possessed and Appendix A is necessary.





Step 2 – Complete *Top-Screen*



- Top-Screen tool became available on June 8 with a Users Manual
- Due sixty days from finalization of Appendix A (final date soon, but uncertain)
- Link through DHS homepage



<http://www.dhs.gov/chemicalsecurity>





DHS Provided - *Chemical Security Assessment Tool (CSAT)*



- The *CSAT* is the DHS's system for collecting and analyzing key data from chemical facilities.
- *CSAT* is comprised of three secure, web-based tools:
 - Consequence screening questionnaire (Top-Screen);
 - *Security Vulnerability Assessment (SVA)*
 - *Site Security Plan (SSP)* templates





Step 2 – Complete *Top-Screen*



■ *Top-Screen*

- Initial screening tool
- First component of *CSAT*
- Consequence only analysis
- Just because you need to complete *Top-Screen* does not mean that you are a *covered facility* – that will be determined by DHS





Who Should Participate in Top-Screen Process?



- Process Safety Personnel
- Environmental Personnel
- Logistics / Transportation Personnel
- Laboratory / Research Personnel
- Marketing / Sales Personnel
- Engineering Personnel
- Security Personnel





Data Required

- The full set of chemicals that the facility may ***possess***
- Maximum volume of each that the facility may ***possess*** at any one time
- Compare the full set of chemicals that a facility may ***possess*** and maximum amount to the STQ list in *Appendix A*
- Locations of chemicals exceeding STQs
- Container sizes and types



Step 2 – Complete *Top-Screen*



- Register in CSAT of *Top-Screen*
 - Input facility information
 - Designate preparer, submitter, & authorizer
 - Submit information
 - Print registration form
 - Acquire signatures of preparer, submitter, & authorizer
 - Fax/mail in registration form
 - DHS will issue via email usernames and passwords to all users





Top-Screen Content



- Which Chemicals are *possessed* at equal to or above STQ?
- Present at any time or in the course of a year
- Total On-Site Quantity and Quantity in Area of Highest Quantity (AHQ)





Step 3 – Response from DHS



- Low Risk facility – Not a *Covered Chemical Facility*
 - *Not Regulated* – No further current action
 - *Ongoing Obligation regarding Changes*



- High Risk facility -- Required to perform *Security Vulnerability Assessment* in 90 Days
- This Response is Chemical Terrorism Vulnerability Information (CVI)





What is CVI

- Chemical Terrorism Vulnerability Information
- Protected Information
- Controlled Dissemination





Comments on CVI



- (a) the following records:
 - (1) Training.
 - (2) Drills and exercises.
 - (3) Incidents and breaches of security.
 - (4) Maintenance, calibration, and testing of security equipment.
 - (5) Security threats.
 - (6) Audits.
 - (7) Letters of Authorization and Approval.

- (b) A covered facility must retain records of submitted Top-Screens, Security Vulnerability Assessments, Site Security Plans, and all related correspondence with the Department





CVI -- What is Required

- Procedural Manual: Safeguarding Information Designated as Chemical Terror
- Standard of Care
- Paper Records – Marked as follows
 - Marking of Documents-- CHEMICAL-TERRORISM VULNERABILITY INFORMATION
 - Distribution limitation statement.
- Other types of records -- Electronic Records
 - computer systems must be able to limit access
 - Any electronic systems must either comply with Federal standards for storing Sensitive But Unclassified information
- Control Access to Documents and Records
- Destruction When Complete
- Transmitting CVI – Paper, Electronic, Voice
- Record of Sharing





Step 4 – Security Vulnerability Assessment (SVA)



- Asset characterization
- Threat assessment
- Security vulnerability analysis
- Risk assessment
- Countermeasure analysis





SVA Module in CSAT



- Deadline – Within 90 days of Notice by the DHS
- Draft Regulation (Dec 28, 2006) provided an example
 - CSAT SVA is similar to the RAMCAP module
- Designed to *produce* consequences to measure criticality and vulnerability
- Not *Design Basis* threats
- For *Comparative Risk Analysis*





Step 5 – Site Security Plan



- Elevated from a *Good Business Practice* or *Insurance Requirement* to a regulatory requirement
- The SSP will be submitted to DHS
- Must address each vulnerability identified in the vulnerability assessment
- Describe how the security measures selected address applicable risk-based performance standards





Security Planning



- Meet these standards
- Security infrastructure review
- Gap analysis
- Budget for required items
- Why are we using it (the chemical that caused us to be a *Covered Chemical Facility*)? Analysis of materials that put you in the program





Examples of *Risk-Based Performance Standards*



- Secure and monitor perimeter
- Secure and monitor restricted areas
- Control access by screening individuals and vehicles
- Deter vehicles from penetrating the perimeter
- Secure and monitor shipping and receiving of hazardous materials
- Deter theft and diversion of potentially hazardous materials





Examples of Risk-Based Performance Standards cont'd



- Deter insider sabotage
- Deter Cyber-Sabotage
- Develop and exercise an emergency plan with local law enforcement
- Maintain effective monitoring communications and warning systems
- Ensure proper security training and drills





DHS Action on Site Security Plan (SSP)



- Approval
 - Letter of authorization
 - Follow-up inspection



- Disapproval
 - Specific letter of deficiency
 - Consultation with DHS



- Orders for Compliance
 - Action required
 - Fine
 - Order to cease operation until remedied





Ongoing Obligation for High Risk Facilities



- Must do what is in the *SSP*
- Similar to permit conditions
- Commitment to a regulatory agency for action





Ongoing Obligation for Low Risk and Non-Covered Facilities



- Track Chemical Use
- Complete Top-Screen within 60 days of exceeding any STQs
- Track Appendix A for changes in STQs
- New, ongoing obligation
- Compliance success is based on your chemical management system





Summary



- New DHS regulation is a test of:
 - Our role Security / EHS Manager
 - Our management systems
- Quick turn-around – 60 days from Final App. A
- DHS provided tool (CSAT)
 - *Top-Screen*
 - *SVA*
 - *SSP Guidance*
- Key element – Chemicals *possessed*
- DHS interaction – uncertain time table
- What to plan for (performance-based)
- Requires Programmatic tracking of future operations





Questions and Thank You for Listening

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