

CHEMICAL FACILITY ANTI-TERRORISM STANDARDS (CFATS)



Why Chemical Facility Security?

- **We face a persistent and evolving threat**
- A successful attack on a chemical facility could potentially cause a significant number of deaths and injuries
- Certain chemical facilities possess materials that could be stolen or diverted and used for terrorist activities

Ammonium Nitrate – Texas



Death Toll in West, Texas,
Fertilizer Explosion Rises to 15
NPR, April 23, 2013

Petrochemical Plant - Saudi Arabia



New Type of Cyberattack
Targets Factory Safety Systems
The Wall Street Journal, Jan. 19, 2018

Police Block Scene of Attack – France



French Authorities Hold Suspect in
Beheading & Explosion at Chemical Plant
NY Times, June 26, 2015

Subway Bombings – London



Subway and Bus Blasts in
London Kill at Least 37
NY Times, July 8, 2015



Additional Security Threats



Murrah Building April 19, 1995 168 fatalities: ANFO bomb (including nitromethane) (OKC Memorial website)



Najibullah Zazi, Aurora terrorist 2009 plotted to bomb NYC subway thwarted; purchased peroxide & acetone at a Beauty Supply Stores in Aurora (Denver post)



Surveillance footage shows terrorists moving bulk quantities of ammonium nitrate into commercial storage facilities for use in attacks (FBI Private Sector Bulletin)



CCTV captures terrorists purchasing bulk quantities of hydrogen peroxide that was used in London attacks (FBI Private Sector Bulletin)

■ Surveillance

- Vehicles taking pictures at Tiered Facility UT Energy Sector (Jan 2020)
- Drone activity
 - Multiple sightings over a Tiered Chemical Sector facility in KY

■ Cybersecurity Incidents

- New Type of Cyberattack Targets Factory Safety Systems, The Wall Street Journal, Jan. 19, 2018
- Ransomware targeting Industrial Control Systems (ICS): examples include Stuxnet, Megacortex, CrashOverride, Black Energy & EKANS February 2020.



Additional Security Threats

■ Beirut Explosion

- August 4, 2020-large amount of ammonium nitrate stored at the port of the city of Beirut, Lebanon, exploded, causing at least 200 deaths, 3 missing, 6,500 injuries, US\$10–15 billion in property damage, and leaving an estimated 300,000 people homeless. Explosion preceded by a fire; AN stored in a warehouse w/o proper safety measures. The exact cause of the detonation is still under investigation.



Beirut Lebanon Aug 4 2020



■ Honolulu Man Charged In Connection With Planned Chemical Weapons Attacks

- Sept.30, 2020 -A federal grand jury has indicted a Honolulu man for what officials say were planned bomb or chemical weapons attacks on Oahu, including a high-rise apartment building. Ethan Sandomire, 20, has been charged with possessing and attempting to possess a chemical weapon, and possessing an unregistered destructive device. The FBI seized the items including approximately 30 pounds of aluminum powder, approximately 30 pounds of ultra-pure potassium perchlorate, approximately 45 pounds of potassium perchlorate, and multiple ignition systems, wireless firing systems, and victim-initiated tripwire systems, according to a press release. Sandomire planned to blow up or release chlorine gas, at a 40-story, 450-unit residential apartment building in central Honolulu. The building, which was not identified, includes a multi-level grocery store on the lower level.

US Attorney's Office Sept 30,2020

Fran Santagata Oct 7, 2020

Ensuring Chemical Facility Security

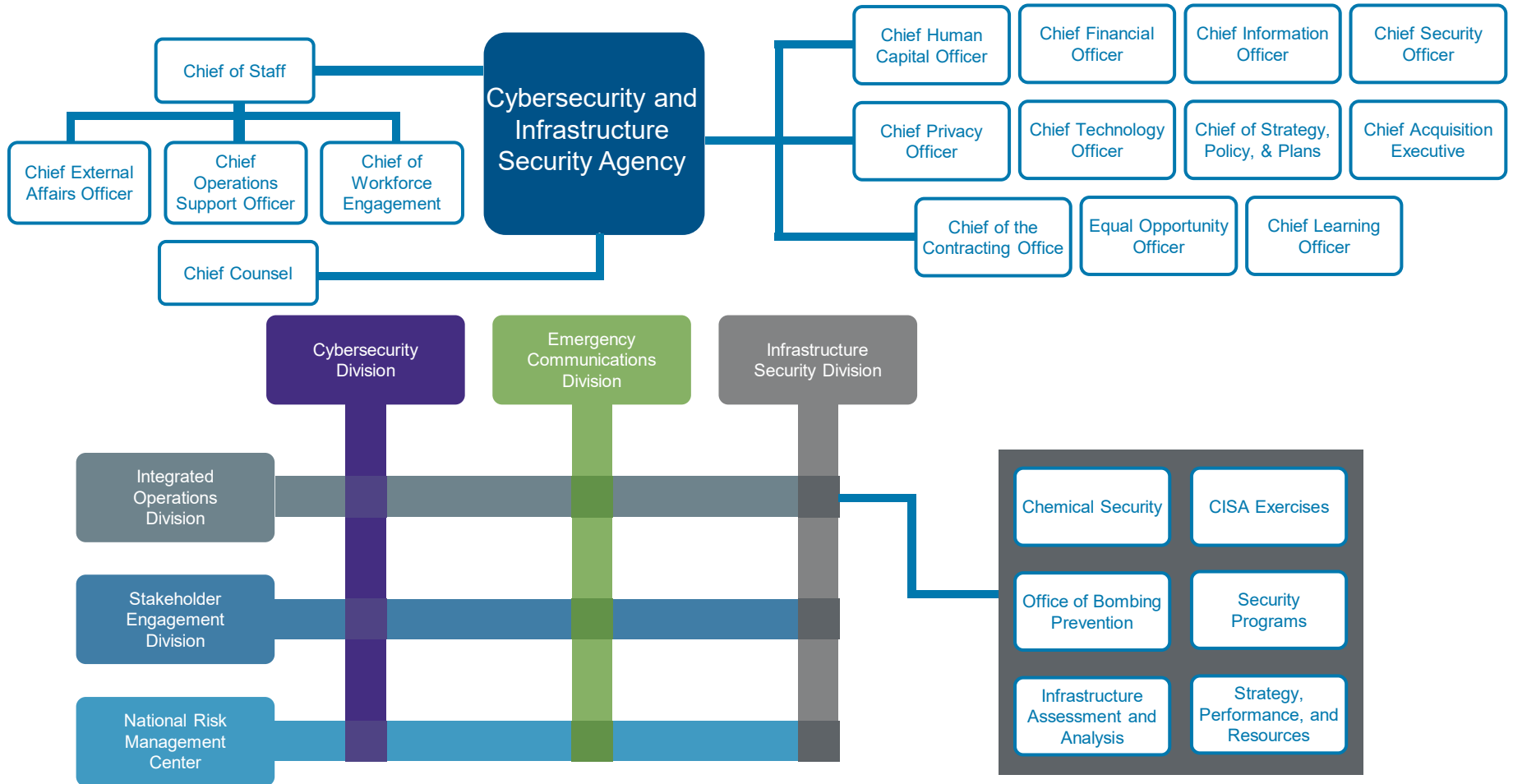


Statutory Authority

- In December 2006, Congress authorized DHS to regulate security at “high-risk” chemical facilities
- The Department developed the Chemical Facility Anti-Terrorism Standards (CFATS), 6 CFR Part 27, to implement this authority
- In December 2014, Congress extended the Department’s authority through the *Protecting and Securing Chemical Facilities from Terrorist Attacks Act of 2014 - 6 U.S. Code Chapter 1, Subchapter XVI: Chemical Facility Anti-Terrorism Standards (CFATS)*
- CFATS authorization has been extended to July 27, 2023



CISA Organization Chart



The CFATS Regulation



The CFATS program identifies and regulates high-risk chemical facilities to ensure they implement appropriate security measures to reduce the risk of a terrorist attack associated with more than 300 chemicals of interest (COI). Facilities that **store, manufacture, or distribute COI at screening threshold quantities and concentrations** must report their holdings to CISA and comply with the CFATS standards.

- **CFATS follows a risk-based approach**, allowing CISA to focus on high-risk chemical facilities in accordance with their specific level of risk



The CFATS Universe

CFATS regulates facilities in various industries

- “Appendix A” – a list of 322 chemicals of interest (COI) at screening threshold quantities (STQ) and concentrations that require reporting to CISA

Appendix A to Part 27. -- DHS Chemicals of Interest ¹

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue								
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination		
Acetaldehyde		75-07-0	1.00	10,000				ACG	APA		X						
Acetylcholine																	X

- Any facility with COI at or above STQ is subject to comply with CFATS

Chemical Facilities Come in All Shapes and Sizes



Chemical Manufacturing



Oil Refineries



Food Processing



Wineries



Colleges and Universities



Farm Cooperatives



Appendix A

Appendix A to Part 27. -- DHS Chemicals of Interest ¹

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue								
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release -- Toxic	Release -- Flammables	Release -- Explosives	Theft -- CW/CWP	Theft -- WME	Theft -- EXP/IEDP	Sabotage/Contamination		
Acetaldehyde		75-07-0	1.00	10,000						X							
...naphthol		...					ACG	APA									X

Definitions:

- **Chemical of Interest:** a chemical on Appendix A
- **Screening threshold quantity and concentration:** the minimum amount (in pounds) and minimum concentration of a chemical of interest that a facility must report to DHS
- **Security issue:** the way that a chemical of interest may be used to do harm
 - **Release:** toxic, flammable, or explosive chemicals that could do harm on-site if released
 - **Theft or diversion:** chemicals that, if stolen or diverted, could be misused as weapons or easily made into weapons to be used off site
 - **Sabotage:** chemicals that could cause harm if mixed with readily available materials prior to shipping (for example, if mixed with water.)



Top CFATS COI

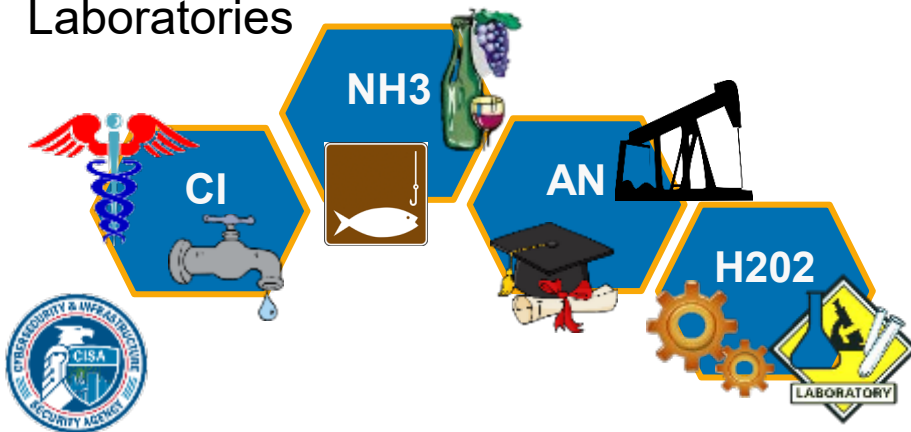
COI	Security Issue	STQ	Minimum Concentration
Chlorine	Release – Toxic	2,500 lbs.	1.00 %
	Theft – WME	500 lbs.	9.77 %
Hydrogen Peroxide (Concentration of 35%+)	Theft – EXP/IEDP	400 lbs.	35.00 %
Aluminum (Powder)	Theft – EXP/IEDP	100 lbs.	A Commercial Grade
Sodium Nitrate	Theft – EXP/IEDP	400 lbs.	A Commercial Grade
Potassium Nitrate	Theft – EXP/IEDP	400 lbs.	A Commercial Grade
Triethanolamine	Theft – CW/CWP	220 lbs.	80.00 %
Sulfur Dioxide (Anhydrous)	Release – Toxic	5,000 lbs.	1.00 %
	Theft – WME	500 lbs.	84.00 %
Potassium Permanganate	Theft – EXP/IEDP	400 lbs.	A Commercial Grade
Nitric Acid	Release - Toxic	15,000 lbs.	80.00 %
	Theft – EXP/IEDP	400 lbs.	68.00 %



Industries with Facilities Regulated by CFATS

CFATS regulates facilities in various industries, including:

- Academia (College & Universities)
- Aerial Sprayers (Non-Fertilizer)
- Breweries
- Cold Chain/Refrigeration
- Energy Utilities
- Fisheries and Hatcheries
- Food Processors and Co-Ops
- Healthcare (Hospitals & Providers)
- Laboratories
- Metal Service and Metal Merchants
- Mining
- Motor Vehicle Parts Manufacturing
- Paints/Coatings
- Petrochemical Manufacturing
- Petroleum Refining/Oil Drilling
- Plastics
- Pulp and Paper
- Race Tracks
- Retail Storage and Distribution
- Semiconductors
- Water Parks, Pools, and Filtration
- Wineries



Am I Exempt?

Statutory Exemptions

- Facilities regulated by the Nuclear Regulatory Commission
- Facilities owned by the Departments of Defense or Energy
- Public water systems and water treatment works regulated under certain Federal water quality laws
- Facilities regulated under the Maritime Transportation Security Act

Agricultural Production Facilities

- In January 2008, DHS indefinitely extended the Top-Screen due date for agricultural production facilities

Agricultural Production Facilities Extension

- **The extension applies to:**
 - Farms (e.g., crop, fruit, nut, and vegetable)
 - Ranches and rangeland
 - Poultry, dairy, and equine facilities
 - Turf grass growers
 - Golf courses
 - Nurseries
 - Floricultural operations
 - Public and private parks
- CISA is considering whether a **modification to the Top-Screen requirement for agricultural production facilities** might be warranted
- In January 2008, DHS **indefinitely extended** the Top-Screen for farmers and other agricultural facilities that use chemicals of interest (COI) for certain agricultural purposes



Fran Santagata Oct 7, 2020



Agricultural Production Facilities Extension

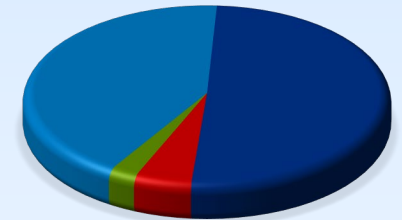
- The extension does **not** apply to chemical distribution facilities or commercial chemical application services.
- It applies only to agricultural production facilities that **use COI *in preparation for the treatment of crops, feed, land, livestock (including poultry) or other areas of an agricultural production facility or during application to or treatment of crops, feed, land, livestock (including poultry) or other areas of the facility.***
 - Therefore, if your facility possesses COI at or above the screening threshold quantity **for any other purpose**, your facility is **not** eligible to claim the CFATS Top-Screen extension and you must comply with the CFATS regulation by submitting a Top-Screen



Essentials of the CFATS Program

- Facilities with **Chemicals of Interest** at or above the screening threshold quantities and concentrations must submit an online risk assessment (**Top-Screen**)
- CISA uses information submitted through the **Top-Screen** to determine if a facility is high-risk / covered
 - The tiering methodology accounts for elements of risk
 - Threat, Vulnerability, Consequence**
 - Covered facilities are placed in one of four tiers
 - Tier one** represents the **highest risk**
- Covered facilities are required to develop and implement security plans that meet applicable risk-based performance standards (**RBPS**)
- Chemical Security Inspectors across the U.S. conduct inspections, assist with compliance, and perform outreach

Current
Population
Distribution



- Tier 1
- Tier 2
- Tier 3
- Tier 4



The CFATS Process

Facility may be tiered in or drop out



- CISA provides compliance assistance upon request at any stage of this process
- More than 150 Chemical Security Inspectors are available for support across the country



Risk-Based Performance Standards

- Risk-Based Performance Standards (**RBPS**) are the foundation of a facility's Site Security Plan and **drive the security** standards at all tiered facilities.
- **RBPS provide facilities with flexibility and allow for the use of existing or planned measures, ideas, and expertise where appropriate.**
- A covered high-risk facility has to satisfy the applicable RBPS by implementing security measures appropriate to the facility's risk tier.
- Security measures appropriate to satisfy the RBPS **will vary** from one facility to another based upon **level of risk and unique facility circumstances.**



Risk-Based Performance Standards

- 1) Restrict Area Perimeter
- 2) Secure Site Assets
- 3) Screen and Control Access
- 4) Deter, Detect, Delay
- 5) Shipping, Receipt, and Storage
- 6) Theft and Diversion
- 7) Sabotage
- 8) Cyber
- 9) Response
- 10) Monitoring
- 11) Training
- 12) Personnel Surety
- 13) Elevated Threats
- 14) Specific Threats, Vulnerabilities, or Risks
- 15) Reporting Significant Security Incidents
- 16) Significant Security Incidents and Suspicious Activities
- 17) Officials and Organization
- 18) Records

- Compliance with the RBPS will be tailored to fit each facility's circumstances, including tier level, security issues, and physical and operating environments
- **Rather than prescribe specific facility security measures, DHS developed 18 Risk-Based Performance Standards (RBPS)**



RBPS-1 Restrict Area Perimeter



RBPS-8 Cyber

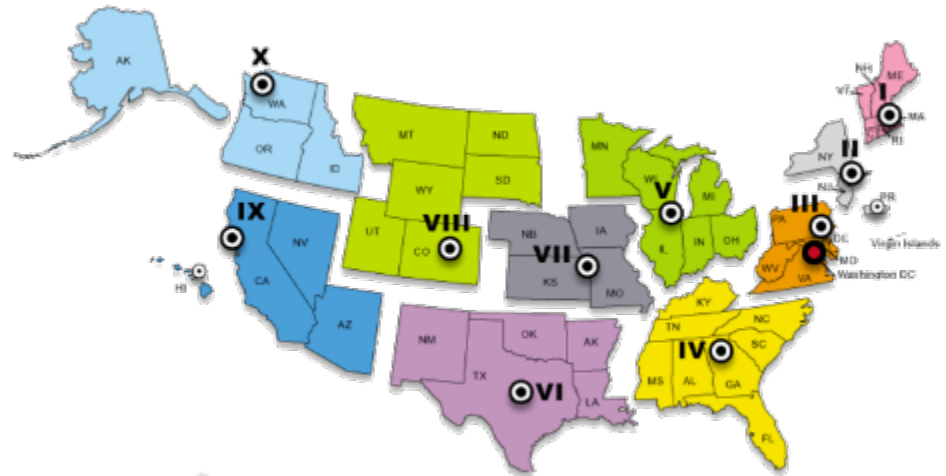


RBPS-10 Monitoring

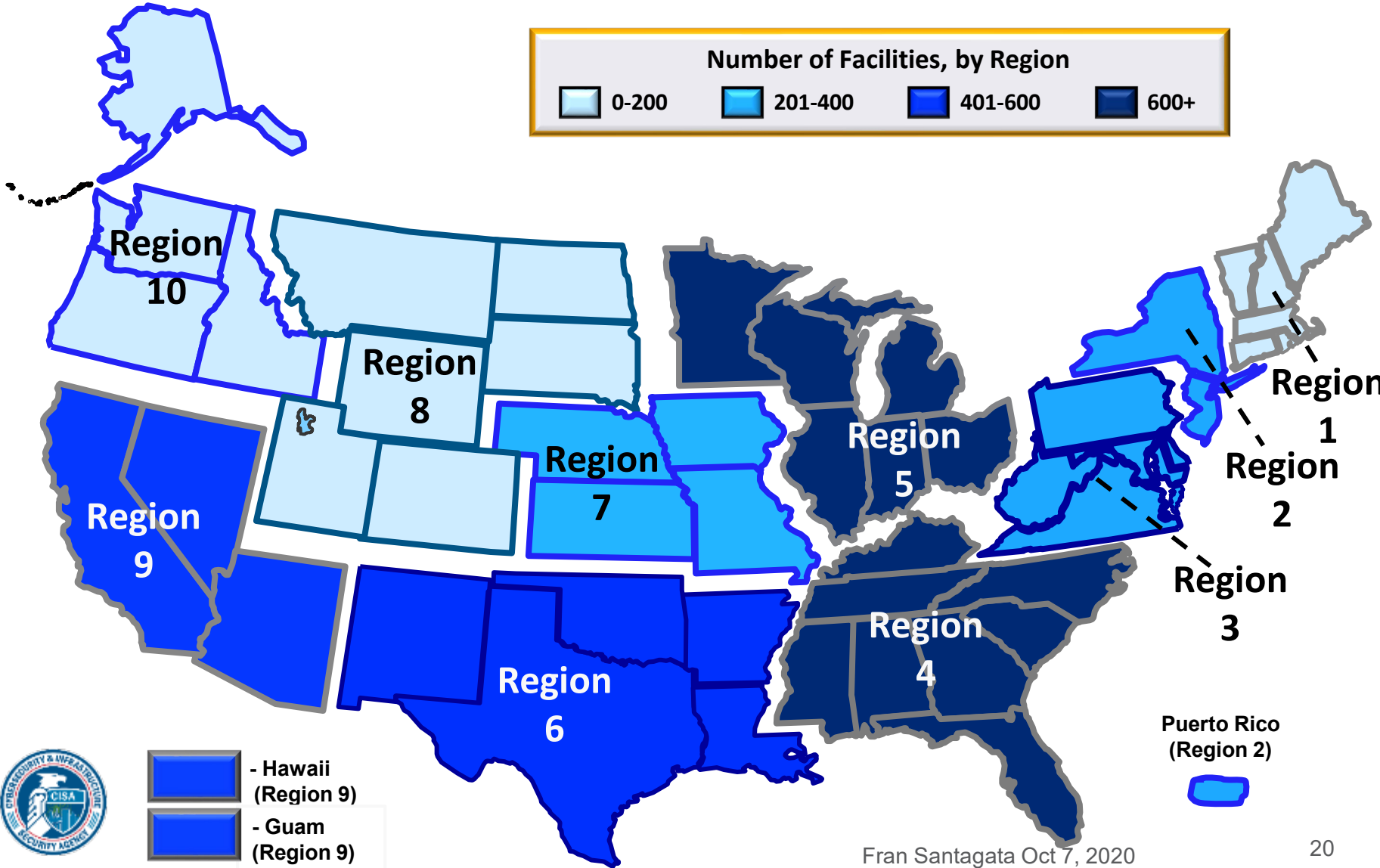


Chemical Security Inspectors

- Chemical Security Inspectors are located in all 50 States
 - More than 150 Chemical Security Inspectors
 - Organized into teams in each of the 10 Federal regions
- Conduct:
 - Authorization Inspections
 - Compliance Assistant Visits
 - Compliance Inspections
 - Stakeholder Outreach
- Chemical Security Inspectors also attend meetings with Federal, State, local, and private industry members



CFATS National Footprint

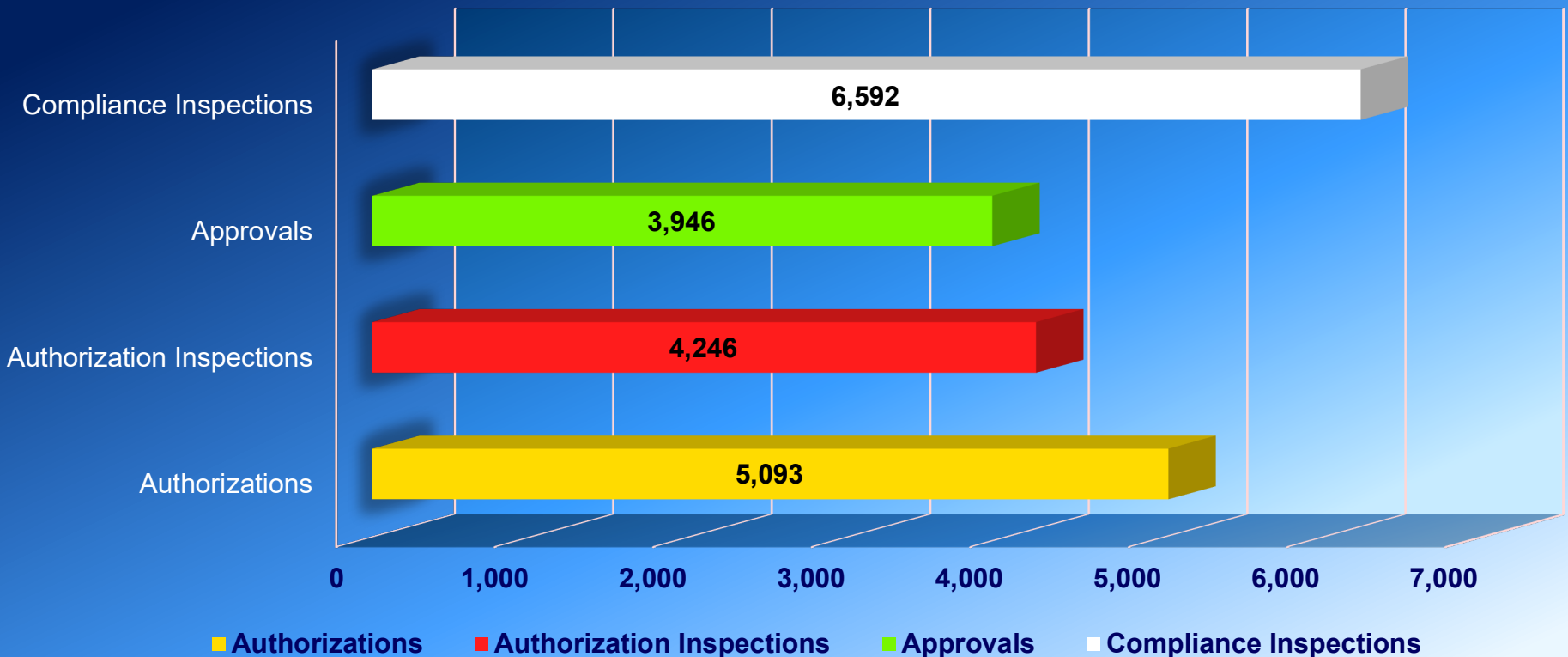


Activities at CFATS Facilities

As of Sept. 28, 2020 – CFATS covers 3,323 facilities

CISA continues to issue new high-risk tiering determinations as Top-Screens are submitted

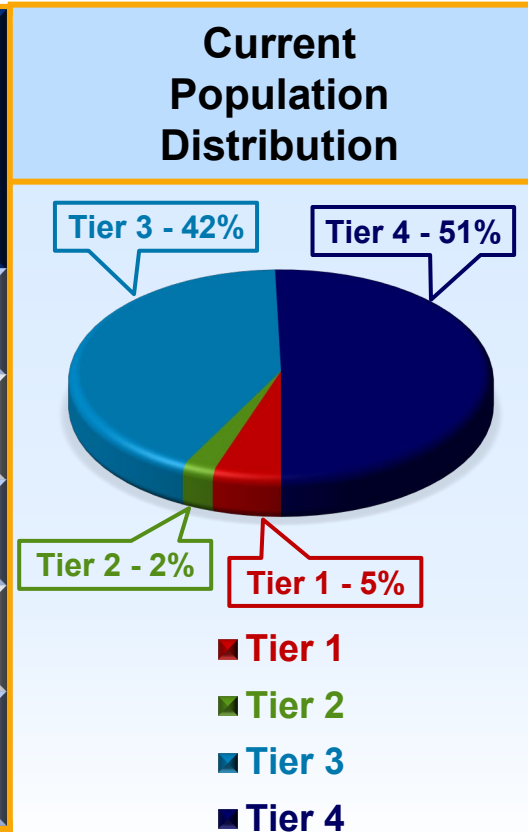
Since Inception of the Program



* “Since Inception of Program” statistics include facilities that were once tiered but no longer high-risk. Typical reasons include removal of a COI, reduction of COI quantity, replacement with lower concentration COI, and facility sale or closure.

Current CFATS Population

Tier	Currently Covered Facilities
1	170
2	83
3	1,399
4	1,671
Total	3,323



* Facilities labeled as Currently Tiered reflect facilities that have received a tier but are awaiting Authorization

All statistics are current as of Sept. 28, 2020



Program Status: Colorado

- Colorado is part of Region 8, which includes:
 - **1 Chief of Chemical Security**
 - **7 Chemical Security Inspectors**
 - **1 Regulatory Analyst**
- Inspectors visit regulated facilities to ensure that they meet the security requirements set by the CFATS program. They are actively involved in local community outreach, local first responder meetings, and annual industry conferences with national and international organizations.



Tier	Facilities Currently Covered in the US	Facilities Currently Covered in Colorado
1	170	0
2	83	1
3	1399	20
4	1671	11
Total	3323	32



Submitting and Protecting Information

Chemical Security Assessment Tool (CSAT)

CSAT is a set of online applications.

These include:

- User Registration
- Top-Screen
- Security Vulnerability Assessment/Site Security Plan
- Personnel Surety Program

Chemical-terrorism Vulnerability Information (CVI)

CVI is the information protection category used to ensure secure handling of certain sensitive CFATS-related information.

To access CVI, an individual must have passed CVI training and have a need-to-know.



Personnel Surety Program (PSP)

Personnel Surety Background Checks

Verify and Validate Identity

Check Criminal History

Validate Legal Authorization to Work in the U.S.

Identify People with Terrorist Ties

- Personnel Surety includes vetting individuals with access to COI and other sensitive parts of high-risk chemical facilities
 - **Risk-Based Performance Standard (RBPS) 12** requires background checks, including recurrent vetting against the *Terrorist Screening Database*

- Facilities have four ways to implement terrorist screening provisions:
 1. **Direct vetting through CISA's online tool**
 2. **Verifying credentials through CISA's online tool**
 3. **Using an electronic credential reader, like a TWIC reader**
 4. **Visual verification of a credential**
- **In May 2019, OMB approved CISA's ICR to implement the CFATS Personnel Surety Program for all covered chemical facilities, to include Tiers 3 and 4.**



CFATS and First Responders

- Collaboration between CFATS covered facilities and first responders is critical to ensuring a secure and resilient community.
- Compliance with the RBPS is beneficial to the facility and the emergency response community, for example:
 - Detect, Deter, and Delay (RBPS 4)
 - Response (RBPS 9)
 - Training (RBPS 11)
 - Reporting of significant security incidents (RBPS 15 & 16)
- Facilities are encouraged to coordinate with the emergency response community as they develop these aspects of their SSPs / ASPs.
- The first time local emergency responders visit a facility should **not** be at the time of an incident.



RBPS 9 – Response



Develop and exercise an emergency plan to respond to security incidents internally and with assistance of local law enforcement and first responders.

- Response focuses on the planning to mitigate, respond, and report incidents in a timely manner between facility personnel, first responders, and law enforcement
- Local Emergency Planning Committees (LEPC) may be contacted by local Chemical Security Inspectors to verify that facilities have developed plans for emergency notification, response, evacuation, etc.
- IP Gateway (EO Portal) – A DHS platform to share and coordinate CFATS information among Federal, State, local, territorial, and tribal (SLTT) agencies partners.



Security Components and Activities

What are some possible facility security components related to RBPS 9?

- Crisis Management Plan
- Communication Systems
- Process Safeguards
- Outreach



What are some activities a facility may want to include in its Crisis Management Plan?

- Contingency Plans
- Continuity of Operations Plan
- Emergency Response
- Post-incident Security
- Evacuation
- Notification Control
- Re-entry
- Security Response



Chemical Facilities of Interest

Efforts to identify non-complying facilities are ongoing

- While most facilities with threshold quantities of CFATS COI are aware of the CFATS program and their reporting requirements, DHS is actively seeking to identify Chemical Facilities of Interest (CFOIs) and industries that may be under-represented and thus need to implement security measures for our National security.
- DHS continues to spread the word on CFATS, raising awareness to reduce the risk of a potential terrorist attack.



Ongoing Interagency Efforts

Improving Chemical Facility Safety and Security

- Sharing data to identify potentially non-compliant facilities
 - The sharing of information and a cross-walk of lists with EPA, ATF, and certain state agencies
 - Enhanced outreach efforts, especially to certain populations
 - Engaging State and local officials
- Rulemaking efforts:
 - Environmental Protection Agency (EPA) Risk Management Plan (RMP)
 - Occupational Safety & Health Administration (OSHA) Process Safety Management
 - CFATS Notice of Proposed Rulemaking (NPRM)
- Gathering and sharing best practices



What Should You Do Next?

1

Visit *CISA.gov* to access Appendix A

www.cisa.gov/publication/cfats-coi-list

2

If your facility manufactures, stores, or distributes any of the chemicals of interest (COI) in Appendix A at or above the minimum concentrations and screening threshold quantities, you are required to submit a Top-Screen

3

- Complete **Chemical-terrorism Vulnerability Information (CVI)** Training
 - Register for **Chemical Security Assessment Tool (CSAT)**
 - Submit a **Top-Screen**

Register for CSAT and submit a Top-Screen: <https://csat-registration.dhs.gov/>

Outreach Resources

CISA is committed to promoting chemical security awareness through outreach and fostering relationships within communities. CFATS continually develops new outreach resources in support of its outreach efforts and commitment to provide stakeholders with informative resources, including:

- **CFATS Overview Fact Sheet**
- **CFATS First Steps Fact Sheet**
- **Top Regulated COI Fact Sheet**
- **Appendix – A Trifold**
- **Shipping and Receiving COI Flyer**
- **RBPS Specific Fact Sheets**
- **Industry Specific Fact Sheets**



The collage features several CISA outreach materials:

- Chemical Facility Anti-Terrorism Standards: Overview** - A fact sheet with the header "DEFEND TODAY. SECURE TOMORROW." and the text "Chemicals are vital to our economy. They are used to develop medicines that maintain our lives and build the infrastructure we need."
- CFATS Risk-Based Performance Standards (RBPS) 8 – Cyber** - A poster with the header "DEFEND TODAY. SECURE TOMORROW." and the text "The Cybersecurity and Infrastructure Security Agency's (CISA) Chemical Facility Anti-Terrorism Standards (CFATS) ensure they have a COI from being a and must have a RBPS unique circumstances."
- RECEIVING CHEMICALS OF INTEREST (COI)** - A blue banner with the CISA logo and the text "The chemicals you are receiving may need to be reported to the Cybersecurity and Infrastructure Security Agency (CISA). To reduce the risk of more than 300 chemicals of interest (COI) from being weaponized, the Cybersecurity and Infrastructure Security Agency's (CISA) Chemical Facility Anti-Terrorism Standards (CFATS) require owners and those appropriate and only measures in place." Below this is a photograph of industrial pipes.
- Chemical Facility Anti-Terrorism Standards (CFATS)** - A blue banner with the text "Securing America's Highest-Risk Chemical Infrastructure".

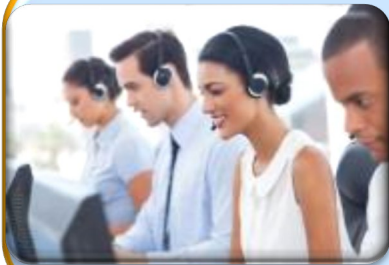
Other visible text includes "NO APPROPRIATE STEPS TO PREVENT UNLAWFUL USE AND HAZARD", "Five screening to control facility risks", "will be provided into", "RBPS materials and other information", "is an advantage a COI is a COI", "of National Security with the measures will not exist in the local regulatory structure.", "is a agricultural production facility that uses the COI on crops", "Methyl bromide agricultural production facilities to learn more.", "any COI in a tank that meet or exceed the RTC, you have 30 days to report your holdings via our online survey or via a Top-Screen Flyer to learn more on how to comply with CFATS.", "responsibility information (CMI) at www.cisa.gov/chemical and use CISA's Chemical Security Assessment Tool (CSAT) at www.cisa.gov/csats at www.cisa.gov/csats to register your CSAT to report COI to CISA.", "via email at 1-888-925-2297 or at csat@cis.gov.", "where applicable. Resources, outside the regulation, list of COI is a prohibited list.", "only by those may not be reporting its COI under the 2014-2017 (EPA) D-151 or 2015-2017 (EPA) D-151-152."

Available Resources



Outreach: DHS outreach for CFATS is a continuous effort to educate stakeholders on the program.

- To request a CFATS presentation or a CAV, submit a request through the program website www.cisa.gov/cfats, or email CISA at CFATS@hq.dhs.gov



CSATS Help Desk: Direct questions about the CFATS program to the CFATS Help Desk.

- Hours of Operation are Mon. – Fri. 8:30 AM – 5:00 PM (ET)
- CFATS Help Desk toll-free number 1-866-323-2957
- CFATS Help Desk email address csat@dhs.gov



CFATS Web Site: For CFATS Frequently Asked Questions (FAQs), CVI training, and other useful CFATS-related information, please go to www.cisa.gov/cfats

Hometown Security

● Homeland Security Starts with Hometown Security



Security starts here.

● connect

● plan

● train

● report

For more information, visit www.dhs.gov/hometown-security



Questions?

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