

## Chemical Facility Anti-Terrorism Roundtable Discussion June 4, 2019

### Key GAO Findings and Recommendations (2012-2019)

Nathan Anderson  
Acting Director, U.S. Government Accountability Office  
[AndersonN@gao.gov](mailto:AndersonN@gao.gov); 206-287-4804

Since 2012, GAO has issued five reports reviewing the Department of Homeland Security's (DHS) Chemical Facility Anti-Terrorism (CFATS) program. GAO's findings and recommendations relate to five areas of CFATS operations:

- 1) Identifying high-risk chemical facilities
- 2) Assessing risk and prioritizing facilities for review
- 3) Reviewing and approving facility site security plans
- 4) Inspecting facilities and ensuring compliance
- 5) Conducting stakeholder and first responder outreach<sup>1</sup>

As of May 2019, GAO has made 10 recommendations to the CFATS program in these five areas and DHS has implemented eight of them while taking action to begin implementation of the remaining two recommendations.

DHS established the CFATS program in 2007 to, among other things, identify high-risk chemical facilities and assess the risk posed by them; place facilities considered to be high-risk into one of four risk-based tiers (with tier 1 being the highest risk tier and 4 being the lowest); assess facility security; approve security plans prepared by facilities; and inspect facilities to ensure compliance with regulatory requirements.<sup>2</sup> DHS's CFATS rule established 18 performance standards that identify the areas for which a facility's security posture is to be examined, such as perimeter security, access control, and cyber security.<sup>3</sup> To meet these standards, facilities are free to choose whatever security programs or processes they deem appropriate so long as DHS determines that the facilities achieve the requisite level of performance in each of the applicable areas.

---

<sup>1</sup>GAO, *Critical Infrastructure Protection: DHS Efforts to Assess Chemical Security Risk and Gather Feedback on Facility Outreach Can Be Strengthened*, GAO-13-353 (Washington, D.C.: Apr. 5, 2013); *Chemical Safety: Actions Needed to Improve Federal Oversight of Facilities with Ammonium Nitrate*, GAO-14-274 (Washington, D.C.: May 19, 2014); *Critical Infrastructure Protection: DHS Action Needed to Verify Some Chemical Facility Information and Manage Compliance Process*, GAO-15-614 (Washington, D.C., July 22, 2015); *Critical Infrastructure Protection: DHS Has Implemented Its Chemical Security Expedited Approval Program and Participation Has Been Limited*, GAO-17-502 (Washington, D.C.: June 29, 2017); and *Critical Infrastructure Protection: DHS Should Take Actions to Measure Reduction in Chemical Facility Vulnerability and Share Information with First Responders*, GAO-18-538 (Washington, D.C.: Aug. 8, 2018).

<sup>2</sup>See 72 Fed. Reg. 17,688 (Apr. 9, 2007) (codified as amended at 6 C.F.R. pt. 27).

<sup>3</sup>DHS has enumerated 18 risk-based performance standards that chemical facilities must meet to comply with CFATS. See 6 C.F.R. § 27.230.

## 1. Identifying high-risk chemical facilities

In May 2014, GAO found that more than 1,300 facilities had reported having ammonium nitrate to DHS. However, based on GAO's review of state data and records, there were more facilities with ammonium nitrate holdings than those that had reported to DHS under the CFATS program.<sup>4</sup> GAO concluded that some facilities were not required to report to DHS and some that were required may have failed to do so.<sup>5</sup> GAO made one recommendation to DHS.

- **Recommendation:** DHS should work with other agencies, including the Environmental Protection Agency (EPA), to develop and implement methods of improving data sharing among agencies and with states as members of a Chemical Facility Safety and Security Working Group.<sup>6</sup>

**Status: Implemented.** DHS compared its data with data from other federal agencies, such as EPA, as well as member states from the Chemical Facility Safety and Security Working Group to identify potentially noncompliant facilities. As a result of this effort, in July 2015, DHS officials reported that they had identified about 1,000 additional facilities that should have reported information to comply with CFATS and subsequently contacted these facilities to ensure compliance. DHS officials told us that they continue to engage with states to identify potentially non-compliant facilities. For example, in June 2018, DHS officials identified 43 lists of potentially noncompliant facilities from 34 state governments, which were in various stages of review by DHS. DHS officials also told us that they had hired an individual to serve as the lead staff member responsible for overseeing this effort.

In July 2015, GAO found that DHS used self-reported and unverified data to determine the risk categorization for facilities that held toxic chemicals that could threaten surrounding communities if released.<sup>7</sup> At the time, DHS required that facilities self-report the Distance of Concern—an area in which exposure to a toxic chemical cloud could cause serious injury or

---

<sup>4</sup>GAO-14-274. GAO reviewed Emergency Planning and Community Right-to-Know Act of 1986 data from Texas and Alabama, which have different reporting criteria than CFATS. Under section 312 of the act and Environmental Protection Agency's regulations, facilities with 10,000 pounds or more of ammonium nitrate generally must submit an annual chemical inventory report to their designated state and local authorities. 42 U.S.C. § 11022, 40 C.F.R. § 370.10(a)(2)(i).

<sup>5</sup>Consistent with law and regulation, certain facilities—including, in general, facilities regulated under the Maritime Transportation Security Act of 2002 (Public Law 107-295, 116 Stat. 2064), public water systems or wastewater treatment facilities, facilities owned and operated by the Department of Defense or the Department of Energy, and facilities subject to regulation by the Nuclear Regulatory Commission or in accordance with the Atomic Energy Act of 1954—are not subject to regulation under CFATS and are referred to as excluded facilities. See 6 U.S.C. § 621(4); 6 C.F.R. § 27.110(b). In addition, pursuant to its authority under 6 C.F.R. § 27.210(c), DHS has extended the deadline for submitting CFATS reports until further notice for certain agricultural production facilities, such as farms, ranches, turfgrass growers, golf courses, nurseries, and public and private parks. See Notice to Agricultural Facilities About Requirement To Complete DHS' Chemical Security Assessment Tool, 73 Fed. Reg. 1640 (Jan. 9, 2008).

<sup>6</sup>Executive Order 13650, *Improving Chemical Facility Safety and Security*, established a Chemical Facility Safety and Security Working Group, composed of representatives from DHS; EPA; and the Departments of Justice, Agriculture, Labor, and Transportation, and directed the working group to identify ways to improve coordination with state and local partners; enhance federal agency coordination and information sharing; modernize policies, regulations and standards; and work with stakeholders to identify best practices. See Exec. Order No. 13,650 (Aug. 1, 2013), 78 Fed. Reg. 48,029 (Aug. 7, 2013).

<sup>7</sup>GAO-15-614.

fatalities from short-term exposure—as part of their Top-Screen.<sup>8</sup> GAO estimated that more than 2,700 facilities with a toxic release threat had misreported the Distance of Concern.<sup>9</sup> GAO made two recommendations to DHS and DHS has fully implemented them.

- **Recommendation:** DHS should provide milestone dates and a timeline for implementation of a new Top-Screen and ensure that changes to this Top-Screen mitigate errors in the Distance of Concern submitted by facilities.  
**Status: Implemented.** DHS implemented an updated Top-Screen survey in October 2016 and now collects data from facilities and conducts more accurate modeling to determine the actual area of impact (formerly called the Distance of Concern), rather than relying on the facilities' calculation.
- **Recommendation:** DHS should (1) develop a plan to implement a new Top-Screen to address errors in the Distance of Concern submitted by facilities, and (2) identify potentially miscategorized facilities that could cause the greatest harm and verify that the Distance of Concern these facilities report is accurate.  
**Status: Implemented.** DHS officials reported in November 2016 that they reassessed all facility Top-Screens that reported threshold quantities of chemicals posing a toxic release threat, and identified 158 facilities with the potential to cause the greatest harm. In April 2018, DHS officials reported that all of these facilities have since been reassessed using updated Top-Screen information and, where appropriate, assigned a risk tier.

## 2. Assessing risk and prioritizing facilities

In April 2013, GAO reported that DHS's risk assessment approach did not consider all of the elements of threat, vulnerability, and consequence associated with a terrorist attack involving certain chemicals. GAO's work showed that DHS's CFATS risk assessment methodology was based primarily on consequences from human casualties, but did not consider economic consequences, as called for by the National Infrastructure Protection Plan (NIPP) and the CFATS regulation. GAO also found that DHS's approach was not consistent with the NIPP because it treated every facility as equally vulnerable to a terrorist attack regardless of location or on-site security. Finally, GAO found that DHS was not using threat data for 90 percent of the high risk, tiered facilities—those tiered for the risk of theft or diversion—and using 5-year-old threat data for the remaining 10 percent of those facilities that were tiered for the risks of toxic chemical release or sabotage. GAO made 2 recommendations to DHS and DHS has fully implemented them.

- **Recommendation:** DHS should enhance its risk assessment approach to incorporate all elements of risk.

---

<sup>8</sup>Any chemical facility that possesses any of the 322 chemicals in the quantities that meet or exceed the threshold quantity or concentration outlined in Appendix A to the DHS CFATS rule is required to complete the Chemical Security Assessment Tool (CSAT) Top Screen—which is the initial screening tool or document whereby the facility is to provide DHS various data, including the name and location of the facility and the chemicals and their quantities at the site. See 6 C.F.R. § 27.200(b); see also 72 Fed. Reg. 65,396 (Nov. 20, 2007) (codified at 6 C.F.R. pt. 27, App. A).

<sup>9</sup>GAO recalculated the Distance of Concern for a generalizable sample of facilities—a simple random sample of 475 facilities from the population of 36,811 facilities that submitted Top-Screens since the inception of the CFATS program in 2007 through January 2, 2015—and compared these results to what facilities reported in their Top-Screen submission. Based upon this sample, GAO estimated that 4,173 facilities with a toxic release chemical misreported the Distance of Concern, with an associated 95 percent confidence interval of 2,798 to 5,822 facilities.

**Status: Implemented.** DHS enhanced its risk assessment approach to incorporate all elements of risk and worked with Sandia National Laboratories to develop a model to estimate the economic consequences of a chemical attack. In addition, DHS worked with Oak Ridge National Laboratory to devise a new tiering methodology, called the Second Generation Risk Engine. In so doing, DHS revised the CFATS threat, vulnerability, and consequence scoring methods to better cover the range of CFATS security issues.

- **Recommendation:** DHS should conduct an independent peer review after DHS completes enhancements to its risk assessment approach.

**Status: Implemented.** DHS conducted peer reviews and technical reviews with government organizations and facility owners and operators, and worked with Sandia National Laboratories to verify and validate the CFATS program's revised risk assessment methodology.

### **3. Reviewing and Approving Facility Site Security Plans**

In April 2013, GAO reported that DHS revised its procedures for reviewing facilities' security plans to address DHS managers' concerns that the original process was slow, overly complicated, and caused a backlog in approving plans.<sup>10</sup> GAO estimated that it could take DHS another 7 to 9 years to review the approximately 3,120 plans in its queue at that time. GAO also estimated that, given the additional time needed to do compliance inspections, the CFATS program would likely be implemented in 8 to 10 years. GAO did not make any recommendations for DHS to improve its procedures for reviewing facilities' security plans because DHS officials reported that they were exploring ways to expedite the process, such as reprioritizing resources and streamlining inspection requirements.

In July 2015, GAO reported that DHS had made substantial progress in addressing the plan backlog—estimating that it could take between 9 and 12 months for DHS to review and approve security plans for the approximately 900 remaining facilities.<sup>11</sup> DHS officials attributed the increased approval rate to efficiencies in DHS's review process, updated guidance, and a new case management system. Subsequently, DHS reported in its December 2016 semi-annual report to Congress that it had eliminated its approval backlog.<sup>12</sup>

In June 2017 GAO reported that DHS took action to implement an Expedited Approval Program (EAP).<sup>13</sup> The CFATS Act of 2014 required that DHS create the EAP as another option that tier 3 and tier 4 chemical facilities may use to develop and submit security plans to DHS.<sup>14</sup> Under the program, these tier 3 and 4 facilities may develop a security plan based on specific standards published by DHS (as opposed to the more flexible performance standards using the standard,

---

<sup>10</sup>GAO-13-353.

<sup>11</sup>GAO-15-614.

<sup>12</sup>Department of Homeland Security, National Protection and Programs Directorate, *Implementation Status of the Chemical Facility Anti-Terrorism Standards: Second Semiannual, Fiscal Year 2016 Report to Congress* (Washington, D.C.: December 9, 2016).

<sup>13</sup>GAO-17-502.

<sup>14</sup>See 6 U.S.C. § 622(c)(4). Under the CFATS rule, once a facility is assigned a final tier, it is to submit a site security plan or participate in an alternative security program in lieu of a site security plan. An alternative security program is a third-party or industry organization program, a local authority, state, or federal government program, or any element or aspect thereof that DHS determines meets the requirements of the regulation and provides an equivalent level of security to that established by the regulation. See 6 C.F.R. § 27.105.

non-expedited process). DHS issued guidance intended to help facilities prepare and submit their EAP security plans to DHS, which includes an example that identifies prescriptive security measures that facilities are to have in place. According to committee report language, the EAP was expected to reduce the regulatory burden on smaller chemical companies, which may lack the compliance infrastructure and the resources of large chemical facilities, and help DHS to process security plans more quickly.<sup>15</sup> If a tier 3 or 4 facility chooses to use the expedited option, DHS is to review the plan to determine if it is facially deficient, pursuant to the requirements of the CFATS Act of 2014.<sup>16</sup> If DHS approves the EAP site security plan, it is to subsequently conduct a compliance inspection.

In June 2017, GAO also reported that DHS had implemented the EAP and had reported to Congress on the program, as required by the CFATS Act of 2014.<sup>17</sup> In addition, as of June 2018, according to DHS officials, only 18 of the 3,152 facilities eligible to use the EAP had opted to use it. DHS officials attributed the low participation to several possible factors including:

- DHS had implemented the expedited program after most eligible facilities already submitted standard (non-expedited) security plans to DHS;
- facilities may consider the expedited program's security measures to be too strict and prescriptive, not providing facilities the flexibility of the standard process; and
- the lack of an authorization inspection may discourage some facilities from using the expedited program because this inspection provides useful information about a facility's security.<sup>18</sup>

GAO also found in June 2017 that recent changes DHS had made to the CFATS program could affect the future use of the expedited program.<sup>19</sup> As discussed below, DHS has revised its methodology for determining the level of each facility's security risk, which could affect a facility's eligibility to participate in the EAP.

#### **4. Inspecting Facilities and Ensuring Compliance**

In July 2015, GAO reported that DHS began conducting compliance inspections in September 2013, and by April 2015, had conducted inspections of 83 of the 1,727 facilities that had approved security plans.<sup>20</sup> GAO's analysis showed that nearly half of the 83 facilities were not

---

<sup>15</sup>S. Rep. No. 113-263, at 9-10 (Sept. 18, 2014).

<sup>16</sup>A facially deficient site security plan is defined as a security plan that does not support a certification that the security measures in the plan address the security vulnerability assessment and risk-based performance standards, based on a review of the facility's site security plan, the facility's Top-Screen, the facility's security vulnerability assessment, or any other information that the facility submits to the Infrastructure Security Compliance Division (ISCD) or ISCD obtains from a public source or other source. 6 U.S.C. § 621(7). Specifically, ISCD determines that an EAP site security plan is deficient if it: does not include existing or planned measures which satisfy the applicable Risk Based Performance Standard; materially deviates from at least one EAP security measure without adequately explaining that the facility has a comparable security measure; or contains a misrepresentation, omission, or inaccurate description of at least one EAP security measure. A facility is to implement any planned security measures within 12 months of the EAP site security plan's approval because ISCD has determined that it is unlikely that all required security measures will be in place when a facility submits its plan to ISCD.

<sup>17</sup>GAO-17-502. See 6 U.S.C. § 622(c)(4)(I)(ii).

<sup>18</sup>An authorization inspection consists of an initial, physical review of the facility by DHS to determine if the Top-Screen, security vulnerability assessment, and site security plan accurately represent and address the risks for the facility.

<sup>19</sup>GAO-17-502.

<sup>20</sup>GAO-15-614.

fully compliant with their approved site security plans and that DHS had not used its authority to issue penalties because DHS officials found it more productive to work with facilities to bring them into compliance. GAO found that DHS did not have documented processes and procedures for managing the compliance of facilities that had not implemented planned measures by the deadlines outlined in their plans. GAO also reported in July 2015 that DHS's performance measure for the CFATS program, which was intended to reflect the overall impact of the CFATS regulation on facility security, did not solely capture security measures that were implemented by facilities and verified by ISCD. Instead, the performance measure reflected both existing security measures and planned security measures that facilities intended to implement within the fiscal year. GAO made 2 recommendations to DHS.

- **Recommendation:** DHS should document processes and procedures for managing compliance to provide more reasonable assurance that facilities implement planned measures and address security gaps.  
**Status: Implemented.** DHS officials updated the CFATS Enforcement Standard Operating Procedure to outline the roles, responsibilities and processes for identifying and resolving all enforcement procedures. In addition, in October 2018, officials updated the CFATS Inspections Standard Operating Procedure to document the verification procedures for planned measure completion, including details on when extensions should be granted and when enforcement should be recommended.
- **Recommendation:** DHS should improve the measurement and reporting of the CFATS program performance by developing a performance measure that includes only planned measures that have been implemented and verified.  
**Status: Implemented.** DHS finalized its fiscal year 2016 annual operating plan that included verification requirements for the performance measure. Specifically, the new requirement requires that ISCD officials verify that planned measures have been implemented in accordance with the approved site security plan by compliance inspection or other means before inclusion in the performance measure calculation.

In August 2018, GAO reported that our analysis of DHS data since our July 2015 report showed that DHS had made substantial progress in conducting and completing compliance inspections.<sup>21</sup> Specifically, our analysis showed that DHS increased the number of compliance inspections completed per year since DHS began conducting compliance inspections in 2013 and that, for the 2,466 high-risk facilities with an approved site security plan as of May 2018, DHS had conducted 3,553 compliance inspections.<sup>22</sup> Of these, DHS issued corrective actions to two facilities that were not in compliance with their approved site security plan.<sup>23</sup>

In our August 2018 report, GAO also found that DHS developed a new methodology and performance measure for the CFATS program in order to evaluate security changes made by high-risk chemical facilities, but that the methodology did not measure the program's impact on

---

<sup>21</sup>GAO-18-538.

<sup>22</sup>In accordance with the CFATS regulations, as a general matter, DHS intends to require facilities in Tiers 1 and 2 to update their Top-Screen every 2 years, and for Tiers 3 and 4 every 3 years. DHS conducts compliance inspections on a regular and recurring basis. DHS officials stated that compliance inspections are prioritized based on several factors including tier and the number of planned security enhancements required at facilities.

<sup>23</sup>In addition to these two corrective actions, GAO reported in August 2018 that, since fiscal year 2015, DHS had issued five additional orders to four high-risk facilities with final penalties totaling \$38,691.88. Of these five orders, three included the failure of a facility to submit an approvable security plan and two included the failure of a facility to submit a Top-Screen.

reducing a facility's vulnerability to an attack. GAO found that DHS could take steps to evaluate vulnerability reduction resulting from the CFATS compliance inspection process. GAO made one recommendation.

- **Recommendation:** GAO recommended that DHS incorporate vulnerability into the new methodology to help measure the reduction in the vulnerability of high-risk facilities to a terrorist attack, and use that data in assessing the CFATS program's performance in lowering risk and enhancing national security. DHS agreed and is taking steps to implement this recommendation.

**Status: Not fully implemented.** Specifically, in May 2019, DHS provided documentation regarding implementation of two new performance metrics. DHS officials stated that these metrics should, among other things, evaluate the progress of individual facilities in enhancing their security while part of the CFATS program and be used to demonstrate an increase in the security posture across the population of CFATS facilities. GAO will continue to monitor DHS's actions to fully implement this recommendation.

## 5. Conducting Stakeholder and First Responder Outreach

In April 2013, GAO reported that DHS took various actions to work with facility owners and operators, including increasing the number of visits to facilities to discuss enhancing security plans, but that some trade associations had mixed views on the effectiveness of DHS's outreach.<sup>24</sup> GAO found that DHS solicited informal feedback from facility owners and operators in its efforts to communicate and work with them, but did not have an approach for obtaining systematic feedback on its outreach activities. GAO made one recommendation and DHS has fully implemented it.

- **Recommendation:** DHS should take action to solicit and document feedback on facility outreach consistent with DHS efforts to develop a strategic communication plan.  
**Status: Implemented.** DHS developed a questionnaire to solicit feedback on outreach with industry stakeholders and began using the questionnaire in October 2016.

In August 2018, GAO reported that DHS shares some CFATS information with first responders and emergency planners, but these stakeholders may not have all of the information they need to minimize the risk of injury or death when responding to incidents at high-risk facilities.<sup>25</sup> While certain facilities are required under the Emergency Planning and Community Right-to-Know Act of 1986 to report some chemical inventory information, which local officials told us they rely on to prepare for and respond to incidents at chemical facilities, GAO found over 200 chemicals covered by CFATS that may not be covered by these reporting requirements.<sup>26</sup> GAO also reported that DHS developed a secure interface called the Infrastructure Protection (IP) Gateway that provides access to CFATS facility-specific information that may be missing from required reporting. However, GAO found that the IP Gateway is not widely used at the local

---

<sup>24</sup>GAO-13-353.

<sup>25</sup>GAO-18-538.

<sup>26</sup>Under Section 312 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), facilities are required to submit an emergency and hazardous chemical inventory form—referred to as a Tier II form. See 42 U.S.C. § 11022. The purpose of this form is to provide state and local officials and the public with specific information on potential hazards. This includes the locations and amount of hazardous chemicals present at a facility during the previous calendar year.

level and officials from 13 of 15 selected Local Emergency Planning Committees GAO contacted—consisting of first responders and covering 373 CFATS high-risk facilities—said they did not have access to CFATS data in the IP Gateway. GAO made one recommendation to DHS.

- **Recommendation:** DHS should take actions to encourage access to and wider use of the IP Gateway and explore other opportunities to improve information-sharing with first responders and emergency planners.  
**Status: Not fully implemented.** DHS reported in September 2018 that the department is taking actions to implement it. Specifically, DHS has revised three fact sheets and an outreach presentation to include information on the IP Gateway and how to request access to it. In addition, DHS plans to ensure contact is made with first responders representing the top 25 percent of CFATS high-risk chemical facilities so that they are properly prepared to respond to incidents at these facilities. GAO will continue to monitor DHS's actions to fully implement this recommendation, including DHS's outreach to first responders with high-risk chemical facilities within their jurisdiction.

(103544)