

## Why GAO Did This Study

DOE's Hanford site in Washington State contains thousands of contaminated excess facilities and waste sites that remain to be cleaned up. In May 2017, a partial roof collapse at a waste storage tunnel facility for one of the former plutonium nuclear processing plants raised questions about the S&M of Hanford's excess facilities and how RL prioritizes cleanup of these facilities.

GAO was asked to review DOE's cleanup of Hanford's contaminated excess facilities, including how DOE ensures that the Hanford Site contractor inspects and maintains facilities. This report examines, among other things, (1) DOE's actions to evaluate the causes of the PUREX tunnel collapse, and (2) the extent to which DOE ensures that S&M of Hanford's contaminate excess facilities meet DOE requirements.

GAO reviewed DOE documents, administered a questionnaire to collect S&M information about 18 selected facilities representing the majority of the Hanford facilities cleanup effort, conducted in-depth reviews of selected Hanford facilities, and interviewed DOE and Hanford cleanup contractor officials.

## What GAO Recommends

GAO recommends that DOE (1) analyze the programmatic root causes of the tunnel collapse, (2) routinely conduct comprehensive inspections of contaminated excess facilities and take timely action as warranted, and (3) assess RL oversight of S&M of Hanford excess facilities. DOE agreed with GAO's recommendations and stated that it is taking steps to implement all of them by December 2020.

## HANFORD CLEANUP

### DOE Should Take Actions to Improve Inspections and Oversight of Contaminated Excess Facilities

## What GAO Found

The Department of Energy (DOE) has taken some actions to evaluate the physical causes that contributed to the May 2017 partial collapse of the Plutonium Uranium Extraction (PUREX) Tunnel 1, but has not determined the programmatic causes that led to the collapse, such as by completing an accident investigation or a root cause analysis, among other things. For example, although an engineering evaluation of the tunnels was completed at the request of the State of Washington, Richland Operations Office (RL) officials told GAO an accident investigation was not initiated because the event did not meet threshold requirements in a DOE order that includes, among other things, damages or costs exceeding \$2.5 million. However, GAO's analysis shows that the costs of responding to the event and stabilizing the tunnel were about \$10 million. At the contractor's request, RL also waived performance of a root cause analysis, which DOE guidance states is typically required for such a significant event, and agreed to a less rigorous analysis of the potential physical causes of the event. By conducting a root cause analysis to determine any programmatic weaknesses that contributed to the collapse of PUREX Tunnel 1, and taking action to address any identified weaknesses, DOE will have greater assurance that another, similar event will not take place. According to a DOE report and GAO's review, although the Hanford contractor is generally conducting routine surveillance inspections of contaminated excess facilities, these inspections have weaknesses and GAO found that DOE has not ensured requirements are fully met. Specifically, DOE orders require that processes be in place to ensure that inspections are conducted to detect deterioration and determine whether the structural integrity of facilities is threatened. A December 2017 DOE report and GAO's review found that the surveillance and maintenance (S&M) inspections at several facilities were not comprehensive and that there are areas of some facilities that personnel infrequently or never enter—physically or by remote means—to conduct inspections. For example, parts of the Reduction-Oxidation Facility have not been entered in more than 50 years and structural conditions are unknown. Without conducting comprehensive inspections, RL cannot ensure that it is meeting all of DOE's S&M requirements, such as addressing aging degradation and obsolescence of some facilities, and preventing other potential events similar to the PUREX tunnel collapse.

In addition, GAO's review of oversight reports since 2013 by DOE headquarters offices responsible for evaluating field office operations found that none of these assessments focused on RL's management and oversight of the contractor's S&M activities. DOE's Oversight Policy requires DOE to conduct independent oversight to the extent necessary to evaluate the effectiveness of DOE field office oversight of contractor activities. Without conducting periodic assessments or audits focused on RL's management and oversight of the contractor's S&M activities for contaminated excess facilities, DOE does not have assurance that RL is overseeing S&M activity in a way that ensures these facilities are inspected and maintained in a safe and compliant condition pending final cleanup.