

Department of Energy

Washington, DC 20585

July 12, 2021

MEMORANDUM FOR TERESA M. ROBBINS MANAGER NNSA PRODUCTION OFFICE

FROM:

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DIRECTOR OFFICE OF ENVIRONMENT, SAFETY AND HEALTH ASSESSMENTS OFFICE OF ENTERPRISE ASSESSMENTS

SUBJECT:

Emergency Preparedness Capability Assessment at the Pantex Plant – July 2021

The attached report documents the results of an assessment conducted to verify the readiness of the Pantex Plant emergency response capabilities, based on validations performed by Consolidated Nuclear Security, LLC (CNS) and National Nuclear Security Administration Production Office (NPO), from October 1, 2015, through September 30, 2020. This assessment is part of a targeted review of emergency preparedness for high-hazard facilities within the DOE/National Nuclear Security Administration (NNSA). This targeted review evaluated the processes for identifying and maintaining emergency response capabilities in a state of readiness. This assessment evaluated site-specific emergency planning and documented performance demonstrations over the past five-year period and was not intended to represent a full programmatic evaluation of the site's emergency management program.

Overall, CNS and NPO have developed and maintain adequate emergency response capabilities that generally provide the emergency response organization with significant depth and capability. The number of capabilities CNS validated is indicative of a mature emergency management program at the Pantex Plant. This assessment found no findings, two deficiencies, and identified two Opportunities for Improvement (OFI) to assist cognizant managers in improving programs and operations.

If you have any questions, please contact me at (301) 903-5392, or your staff may contact Jack E. Winston, Director of the Office of Emergency Management Assessments (202) 738-7111, or Anthony D. Parsons, the team lead for this assessment, at (240) 813-8710.

Attachment:	Emergency Preparedness Capability Assessment at the Pantex Plant–July 2021

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Emergency Preparedness Capability Assessment at the Pantex Plant

July 2021

Office of Enterprise Assessments U.S. Department of Energy

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Acronyms

BSA	Baptist Saint Anthony's
CNS	Consolidated Nuclear Security, LLC
DDC	Disaster District Committee
DOE	U.S. Department of Energy
DPS	State of Texas's Department of Public Safety
EMInS	Emergency Management Information System
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPHA	Emergency Planning Hazards Assessment
EPI	Emergency Public Information
ERO	Emergency Response Organization
ERTF	Emergency Radiation Treatment Facility
FBI	Federal Bureau of Investigation
HAZMAT	Hazardous Materials
IC	Incident Commander
JCDC	John C. Drummond Center
JIC	Joint Information Center
MC	Media Center
NNSA	National Nuclear Security Administration
NPO	NNSA Production Office
OFI	Opportunity for Improvement
OHS	Occupational Health Services
OST	Office of Secure Transportation
Pantex	Pantex Plant
PSS	Plant Shift Superintendent
RSD	Radiation Safety Department
SNM	Special Nuclear Material
SOC	State Operations Center
TDEM	Texas Department of Emergency Management
TOC	Tactical Operations Center
YAMS	Your Area Mapping System

Emergency Preparedness Capability Assessment at the Pantex Plant November 30, 2020 to February 2, 2021

Summary

Scope

This assessment evaluated whether Consolidated Nuclear Security, LLC (CNS), the Pantex Management and Operating contractor, and the National Nuclear Security Administration Production Office (NPO), had established, and then validated all aspects of the Pantex Plant (Pantex) emergency response capabilities over the five-year period from October 1, 2015, through September 30, 2020, as required. Response capabilities developed and validated by CNS were based on site-specific attributes, including types and forms of hazardous materials, demographics, and geography, using a variety of deterministic analyses documented in emergency planning hazards assessments, as required by DOE Order 151.1D, Comprehensive Emergency Management System. In addition, the site-level exercise program was assessed to determine whether CNS validated specific emergency response capabilities. Due to impacts related to the COVID-19 pandemic, the Office of Enterprise Assessments performed this assessment remotely, therefore, did not observe or evaluate responder proficiency at any venue or emergency response position.

Significant Results for Key Areas of Interest

Overall, CNS and NPO have developed and routinely validate adequate emergency response capabilities that generally provide the emergency response organization (ERO) with sufficient depth and capability. CNS validations reflect a maturing emergency management program at Pantex.

ERO Cadres and Teams

CNS and NPO have adequately established and validated most Pantex emergency response capabilities. The ERO is a composite force consisting of an integrated line and staff organization structure and is based on the concept of a single site-level ERO that responds to all emergency incidents within the Pantex boundary. CNS and NPO have adequately validated and maintained response capabilities for 12 specific cadres and teams responsible for initial and ongoing emergency response and mitigation within the Pantex boundary. However, CNS has not validated its Radiation Safety Department command and control capability during the five-year period that NPO also had not identified in its oversight role.

Offsite Response Interfaces

CNS and NPO have adequately interfaced and coordinated with local, state, and Federal agencies and organizations responsible for offsite emergency response to supplement CNS capabilities. CNS and NPO have appropriately documented interrelationships with 18 local, state, and Federal organizations in formal plans, agreements, understandings, or other prearrangements for mutual assistance, detailing the emergency measures provided by offsite entities. CNS and NPO successfully validated all offsite response capabilities over the previous five-year period, with three exceptions.

Response Facilities and Systems

The Pantex emergency plan documents 11 dedicated emergency response facilities and systems that CNS maintains in a constant state of readiness to ensure functional and physical characteristics. CNS validated readiness for all requisite Pantex emergency response facilities and systems with one exception.

<u>Best Practices and Findings</u> No best practices or findings were identified as part of this assessment.

Follow-up Actions

No follow-up activities were identified.

Emergency Preparedness Capability Assessment at the Pantex Plant

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Emergency Management Assessments, within the independent Office of Enterprise Assessments, assessed the validation of emergency preparedness capabilities at the Pantex Plant (Pantex). This assessment is part of a targeted review of emergency preparedness for high-hazard facilities within DOE and the National Nuclear Security Administration (NNSA). This targeted review evaluated the processes for identifying and maintaining emergency response capabilities in a state of readiness to protect the health and safety of workers and the public for any incident, whether natural or manmade, that requires response action beyond normal operations.

The scope of the assessment was in accordance with the *Plan for the Assessment of Emergency Preparedness Capability at the Pantex Plant*, December 2020 – January 2021, which used the site-level exercise program to assess whether Consolidated Nuclear Security, LLC (CNS), validated the emergency response capabilities derived from NNSA Production Office (NPO) Pantex emergency planning hazards assessments (EPHAs). DOE Order 151.1D, *Comprehensive Emergency Management System*, requires field offices to review and approve these contractor prepared documents. Also, DOE Order 151.1D identifies the functional emergency response requirements for DOE and NNSA sites. CNS, the Pantex Management and Operating contractor, has determined the necessary site emergency response capabilities based on site-specific attributes, including types and forms of hazardous materials (HAZMAT), demographics, and geography. DOE Order 151.1D requires that DOE facilities prepare for incidents at the upper end of the consequence spectrum. Emergency response staff must plan for the protection of personnel, mitigation of potential HAZMAT releases, and establishment of appropriate short-term recovery actions.

Additionally, in accordance with DOE Order 151.1D, CNS emergency planners are required to preplan the means to acquire these capabilities, if necessary, from external sources, including surrounding communities, state authorities, and offsite DOE and national assets. In addition, this assessment verified CNS's validation of emergency response capabilities related to hazards identified in its EPHAs. Some response capabilities deemed necessary for both low-probability and severe incidents would be a financial burden to maintain onsite or could be rendered unavailable if such an incident occurred. Accordingly, preparation for such an incident requires establishing agreements with offsite entities that enable integration into the CNS emergency response.

2.0 METHODOLOGY

The DOE independent oversight program is described in and governed by DOE Order 227.1A, *Independent Oversight Program*, which is implemented through a comprehensive set of internal protocols, operating practices, assessment guides, and process guides. This report uses the terms "best practices, deficiencies, findings, and opportunities for improvement (OFIs)," as defined in DOE Order 227.1A.

As identified in the assessment plan, certain aspects from the Office of Enterprise Assessments Criteria and Review Approach Document 33-09, *DOE O 151.1D Emergency Management Program*, provided a focused set of assessment objectives, criteria, and approaches. In addition, this assessment evaluated site-specific emergency planning and documented performance demonstrations over the past five-year period

and was not intended to represent a full programmatic evaluation of the site's emergency management program. Due to DOE COVID-19 protocols, this assessment was conducted remotely with no onsite observations.

This assessment evaluated whether CNS had established, and then validated over a five-year period, all aspects of the Pantex emergency response capabilities during scripted, scenario-driven, operations-based exercises designed to assess, evaluate, and improve performance in prevention, protection, mitigation, response, and recovery capabilities in a risk-free environment. Operations-based exercises test and validate policies, plans, procedures, training, equipment, and interagency agreements. DOE operations-based exercises include functional exercises, full-scale exercises, and full-participation exercises.

The assessment team examined key documents, including exercise after-action reports, exercise packages, plans, procedures, manuals, and analyses. The assessment team also conducted interviews with key personnel responsible for developing and executing the emergency management program. The members of the assessment team, the Quality Review Board, and management responsible for this assessment are listed in Appendix A.

3.0 RESULTS

The extent of emergency planning and preparedness required for the site directly corresponds to the types and scope of hazards present and the potential consequences of accidents or incidents, which identify the hazards and targets unique to specific facilities. NPO has approved four Pantex EPHAs that provide the technical basis for emergency planning and preparedness. CNS used EPHA results to adequately identify and define appropriate personnel, resources, facilities, and systems-related capabilities in EM-PLN-0019, *Pantex Plant Comprehensive Emergency Management Plan*, and RPT-FD-0001, *Pantex Fire Department Baseline Needs Assessment*. Importantly, the Pantex emergency response organization (ERO) is a composite force consisting of an integrated line and staff organization structure, using a site-level ERO that responds to all emergency incidents within the Pantex boundary. In addition, the roles of local, state, and Federal agencies and organizations responsible for supplementing onsite response organizations and agencies.

CNS conducted an adequate number of operations-based exercises during the five-year period, from October 1, 2015, through September 30, 2020, using scenarios from the spectrum of potential operational emergencies identified in the EPHAs. CNS adequately postulated incidents at the Pantex EPHA facilities, and scenarios included the substances and material present at the site to test the integrated emergency response capabilities. Additionally, CNS appropriately completed exercises with a severe event initiator, including an earthquake and lightning storm. CNS conducted three full-participation exercises that included extensive participation by local, state, and Federal organizations. Further, CNS appropriately conducted exercises with postulated incidents involving an active assailant and a structural fire. These scripted incidents were low in consequence and did not affect offsite areas and the public but still required an integrated ERO response. Finally, CNS formally evaluated its response to five actual incidents, thereby validating response capabilities similar to an operations-based exercise.

Sections 3.1 through 3.3 discuss response capabilities specific to ERO cadres and teams, offsite response interfaces, and response facilities and systems, respectively. Pantex has 12 unique response ERO cadres and teams, 18 offsite interfaces, and 11 dedicated response facilities or systems.

3.1 Emergency Response Organization Cadres and Teams

The objective of this portion of the assessment was to verify that CNS and NPO have established and validated the Pantex ERO structure and its emergency response capabilities, as required by DOE Order 151.1D. In accordance with the order, an ERO must consist of personnel with capabilities and resources based on the all-hazards planning basis. The site is required to designate and train a primary and at least one alternate for each ERO position, excluding first responders in the field, to be available to implement the emergency management plan for initial and ongoing emergency response. A site must also establish an effective first responder capability to mitigate all emergencies, including emergency medical, fire, HAZMAT, and applicable rescue emergencies as derived through the baseline needs assessment, hazard survey, and threat and hazard identification risk assessment. Finally, CNS is required to validate each capability over a five-year period.

Fire Department

CNS has established and maintains an adequate line organization fire department, based onsite, and includes an emergency services dispatch center. The fire department is principally an industrial fire service, capable of responding to urban-type fires within the Pantex boundary. The fire department maintains specific capabilities for dealing with fires involving hazardous substances and materials unique to the Pantex mission. The fire department also maintains an adequate capability to address wildland fires. In addition to fire response, the Pantex fire department maintains the capability to provide emergency medical services (EMS), limited rescue capabilities, and HAZMAT response. There are 70 personnel assigned to the fire department. A fire department support team provides additional staff for personnel accountability, staging, and incident management.

CNS adequately validated its fire department capabilities during the five-year period. The fire department responded to 13 postulated HAZMAT, EMS, or fire incident exercises in addition to an actual HAZMAT incident response that CNS formally evaluated. CNS validated EMS capability in parallel with the HAZMAT, fire, or active assailant response capabilities, which in some instances, included patient transport to participating offsite medical centers. Finally, CNS validated its wildland fire capability in two exercises and its emergency services dispatch center capability in 13 exercises during the period.

Protective Force

The protective force provides Pantex with personnel for site and facility access control, and protection of site assets, including special response team personnel, and canine teams. Agreements are in place with Federal, state, and local jurisdictions to provide additional personnel, equipment, and capabilities to Pantex's security response, if needed.

CNS adequately validated its protective force capabilities in accordance with the site emergency plan during the five-year period, including support for incident response, in 13 exercises. In addition, during four active assailant exercises, CNS validated special response team and access control capabilities. CNS also supported this validation by formally evaluating its response to four actual incidents.

Radiation Safety Department

CNS has established and maintains an adequate Radiation Safety Department (RSD) line organization with personnel that monitor injured and uninjured personnel, conduct personnel decontamination, perform dosimetry, and conduct area surveys and air sampling. Furthermore, RSD personnel assist the incident commander (IC) with response, mitigation, and demobilization activities. There are 43 response

personnel assigned from the RSD to provide these capabilities. CNS adequately validated its RSD cadre capabilities in nine exercises during the five-year period.

Incident Command Cadre

CNS has adequately implemented command and control for an onsite incident scene, consistent with the National Incident Management System Incident Command System. The assignment of the role of IC depends on the nature of the incident. For incidents of a security nature, the senior protective force shift commander becomes IC. For radiation incidents, the RSD becomes IC. The fire department battalion chief does not assume duties as IC for security or radiation incidents. There are nine personnel assigned to the incident command cadre.

CNS adequately validated the IC capability in 13 exercises during the five-year period. Additionally, CNS further supported this validation by formally evaluating its response to five actual incidents during the five-year period. CNS adequately validated its protective force IC capability during 3 exercises and fire department IC capability during 10 exercises. Additionally, one exercise successfully demonstrated the transfer of command from the fire department to the protective force.

However, CNS did not validate its RSD IC capability for a radiation incident during the five-year period. Neither CNS nor NPO provided a rationale as to why this key capability was not validated for more than five years or why NPO had not identified the weakness in its oversight role. However, upon identification by EA, CNS began running a series of exercises to address the deficiency. Consequently, CNS has not demonstrated command and control during a radiation incident that requires the RSD personnel to provide direction and control of the on-scene response, manage on-scene emergency resources, and issue initial immediate protective actions during the five-year period. (See **Deficiency D-CNS-1** and **OFI-CNS-1**.)

Operations Center Cadre

CNS has adequately established and maintains an operations center staff organization to receive reports of potential emergency conditions from the field. During the early phases of an emergency, the on-duty manager is the plant shift superintendent (PSS), who evaluates the information, alerts emergency responders to the condition, and categorizes the incident. If the incident results in an Operational Emergency, the PSS automatically assumes the responsibility and authority of the Emergency Operations Center (EOC) director and NPO emergency oversight manager until responsibilities are formally transferred to the EOC director and emergency oversight manager following a turnover briefing and verification that the EOC is operational. CNS has adequately staffed the operations center cadre with 12 personnel and adequately validated its operations center cadre capability in 13 exercises during the five-year period. Additionally, CNS further supported this validation by formally evaluating its response to five actual incidents during the five-year period.

Emergency Operations Center Cadre

CNS has adequately established and maintains an EOC staff organization that provides emergency management operations, consequence assessment, security and fire operations oversight, notification and reporting, recovery planning, field monitoring operations, external coordination and offsite liaison capabilities, and emergency public information (EPI). Emergency response efforts and resources used inside the Pantex boundary are under the control of the EOC. CNS has adequately staffed the EOC cadre with 100 personnel who fill 39 functional positions and adequately validated its EOC cadre capability in

13 exercises during the five-year period. Additionally, CNS further supported this validation by formally evaluating its response to four actual incidents during the five-year period.

NNSA Production Office Emergency Oversight

NPO emergency oversight is appropriately included as part of the ERO and provides the final authority to commit NNSA resources, as approved by the NPO emergency oversight manager. The NPO emergency oversight manager is responsible for releasing incident information to the press or the public. CNS and NPO adequately validated emergency oversight capabilities in 13 exercises and further supported this validation by formally evaluating its response to 4 actual incidents during the five-year period.

Unified Incident Command Cadre

CNS and NPO have adequately established and maintain a unified incident command staff organization that provides command and control of incidents that require a mature incident command response, interconnected with the EOC and any applicable DOE or local law enforcement agency representatives. Unified incident command often happens approximately one hour into an emergency response at the tactical operations center (TOC) when the fire department, protective force, and RSD transition to a unified command structure. CNS has adequately staffed the unified incident command cadre with 20 personnel that fill 7 functional positions and adequately validated unified incident command cadre capability in 13 exercises during the five-year period. Additionally, CNS further supported this validation by formally evaluating its response to four actual incidents during the five-year period.

Emergency Public Information Cadre

CNS and NPO have adequately established an EPI cadre that includes an onsite media center (MC) and offsite joint information center (JIC) to disseminate information to the public during an emergency. The MC provides EPI during an Operational Emergency not requiring classification, Alert, and Site Area Emergency classifications. The General Emergency classification requires automatic activation of the JIC. However, the NPO manager of public affairs or NPO emergency oversight manager can activate the JIC during an Alert or Site Area Emergency, if determined to be necessary. CNS and NPO have adequately staffed the EPI cadre with 35 personnel assigned to fill 13 functional positions and adequately validated the EPI cadre capability in 13 exercises during the five-year period.

Occupational Health Services

CNS has adequately established and maintains an Occupational Health Services (OHS) capability that staffs a full-time qualified cadre of physicians, nurses, and technical support personnel available to provide specialized medical support for Pantex emergencies. OHS is a unique capability defined in the site emergency plan. If an off-hours problem occurred requiring the support of OHS, CNS is capable of recalling this ERO element or activating its offsite interface agreements with the two local hospitals to provide similar capabilities. In addition, onsite medical capabilities between the fire department and OHS provide adequate triage, stabilization, treatment, decontamination, and transportation of casualties and are capable of minimizing radiological and chemical contamination spread. CNS has adequately staffed the OHS with 8 personnel assigned to the cadre and adequately validated OHS cadre capability in 12 exercises during the five-year period.

Emergency Radiation Treatment Facility Team

CNS has adequately established and maintains an emergency radiation treatment facility (ERTF) staff organization that it activates when the safety and health of individuals are at risk from either toxic or radiological releases. The ERTF team supports the offsite medical treatment of personnel who have been contaminated or injured by HAZMAT. CNS has adequately staffed the ERTF team with 21 personnel assigned to the cadre who fill 8 functional positions and adequately validated ERTF cadre capability in 5 exercises during the five-year period.

Contingency Response Support Team

CNS has adequately established and maintains a contingency response support team (CRST) staff organization that provides offsite HAZMAT monitoring. CNS has integrated the CRST with field teams from the Texas Department of State Health Services in case of an offsite release. CNS has adequately staffed the CRST with 10 personnel and adequately validated CRST cadre capability in 9 exercises during the five-year period.

Emergency Response Organization Cadres and Teams Conclusions

CNS and NPO adequately established and validated the Pantex ERO capabilities with one exception. The ERO appropriately consists of those requisite skills and disciplines for adequate mitigation of emergency incidents that are derived from the four EPHAs. Importantly, CNS conducted an adequate number of operations-based exercises during the five-year period, from October 1, 2015, through September 30, 2020, using scenarios from the spectrum of potential operational emergencies identified in the EPHAs. The number of exercises conducted is indicative of a mature emergency exercise program. In addition, CNS adequately ensured that most ERO cadres and teams had the opportunity to demonstrate individual and team proficiency during multiple exercises each year. However, CNS has not validated the RCD IC capability during the five-year period. Consequently, CNS has not demonstrated command and control during a radiation incident that requires the RSD to provide direction and control of the on-scene response, manage on-scene emergency resources, and issue initial immediate protective actions.

3.2 Offsite Response Interface Capabilities

The objective of this portion of the assessment was to verify that CNS and NPO have established and validated coordination and response capabilities with the local, state, and Federal organizations responsible for emergency response or that may be used to supplement response capabilities based on hazards identified in the all-hazards planning basis, as required by DOE Order 151.1D.

DOE Headquarters Watch Office

CNS and NPO have adequately established and maintain an interface capability with the DOE Headquarters notification point, collocated with the Headquarters EOC. Upon receiving an event notification, the watch office duty officer notifies the appropriate personnel responsible for activating an NNSA emergency management team. CNS adequately validated the DOE Headquarters watch office interface capability in 13 exercises and further supported this validation by formally evaluating its response to 5 actual incidents during the five-year period.

DOE Headquarters EOC

CNS and NPO have adequately established and maintain interface capabilities with the DOE Headquarters EOC, which is located in the Forrestal Building in Washington, D.C. A backup EOC is located in Germantown, Maryland. Both facilities are capable of communicating with Pantex via telephone, the emergency communications network, the Emergency Management Information System (EMInS), facsimile, and classified/unclassified video teleconferencing. The performance criteria used by NPO, CNS, and Headquarters to assess the adequacy of the interface consisted of sending initial and follow-on notifications, establishing an automated EMInS link, and maintaining a telephone liaison. CNS adequately validated the Headquarters EOC interface capability in two exercises during the five-year period.

Texas Department of Emergency Management

CNS and NPO have adequately established and maintain interface capabilities with the Texas Department of Emergency Management (TDEM), which has authority for state-wide emergency preparedness, response, recovery, and mitigation of emergencies. If local resources are inadequate to deal with an emergency, cities and counties can request state assistance from the local disaster district. Each of the state's 21 disaster districts has a Disaster District Committee (DDC) comprising representatives of all state agencies having resources within the district. The DDC chairman, who is also the highway patrol commander in that district, has the authority to employ all state resources within the district to respond to an emergency. Disaster District 5B, located at the State of Texas's Department of Public Safety (DPS) district headquarters in Amarillo, covers the Pantex area. Requests from Pantex for State of Texas assistance would be addressed to the Disaster District 5B.

If the DDC resources are inadequate or unavailable, the DDC refers requests for support to the State Operations Center (SOC) in Austin. The TDEM operates SOC and coordinates emergency resource support for local governments with various state agencies. During significant emergencies, the State Emergency Management Council has the authority to employ virtually all state resources, including, with the governor's approval, the Texas Military Department. Pursuant to the State Emergency Management Plan provisions, TDEM increases its readiness if a Pantex Alert or Site Area Emergency is declared. The State Emergency Management Council is called into session if a General Emergency is declared at Pantex.

CNS adequately validated the above TDEM interface capabilities in exercises during the five-year period. CNS validated the DDC interface capability in three exercises, the SOC interface capability in two exercises, and the DSHS interface capability in three exercises during the period.

State Operations Center

CNS and NPO have adequately established and maintain notification interface capabilities with the SOC. A formal agreement in principle exists between DOE and the State of Texas to provide technical and financial support to state agencies and local governments responsible for emergency planning and preparedness near Pantex. Furthermore, CNS and NPO have adequate protocols to communicate to the State of Texas recommended protective actions for the public and event-specific information, based on approved EPHAs, for protecting humans, plants, and animals outside the Pantex boundary. CNS adequately validated the SOC interface capability in 10 exercises and further supported this validation by formally evaluating its response to 1 actual incident during the five-year period.

National Atmospheric Release Advisory Center

CNS and NPO have adequately established and maintain interface capabilities with NNSA's Atmospheric Release Advisory Capability for assessment of HAZMAT released into the atmosphere. Lawrence Livermore National Laboratory operates the Atmospheric Release Advisory Capability at the National Atmospheric Release Advisory Center (NARAC). NARAC's mission is to provide timely and accurate real-time assessment advisories to emergency managers for rapid decision-making during an emergency response involving a nuclear, radiological, or chemical release. CNS adequately validated NARAC interface capability in 12 exercises during the five-year period.

Radiological Assistance Program

CNS and NPO have adequately established and maintain interface capabilities with the NNSA Radiological Assistance Program (RAP), which provides a first response resource in assessing an emergency incident and advising decision-makers on further steps to evaluate and minimize the hazards of a radiological incident. RAP provides resources (e.g., trained personnel and equipment) to monitor radiological hazards. NNSA implements RAP regionally, coordinating between the emergency response elements of the state, local, and Federal agencies. CNS adequately validated the RAP interface capability in one exercise during the five-year period.

Federal Bureau of Investigation

CNS and NPO have adequately established and maintain interface capabilities with the Federal Bureau of Investigation (FBI) to respond to any terrorist or weapons of mass destruction incident at Pantex. CNS and NPO have integrated an FBI response into the Pantex ERO structure and concept of operation. An initial FBI response to Pantex includes personnel from the Amarillo office and, if needed, additional response is available from the regional office in Dallas. CNS adequately validated FBI interface capability in one exercise and further supported this validation by formally evaluating its response to one actual incident during the five-year period.

Office of Secure Transportation, Host Site

CNS and NPO have adequately established and maintain interface capabilities with the Office of Secure Transportation (OST), according to DOE Order 151.1D. As a host site, CNS and NPO coordinate, communicate, and integrate applicable aspects of emergency planning, preparedness, and readiness with OST into a documented process to manage and control an OST event scene inside the Pantex boundary. CNS and NPO appropriately include OST hazards in the site emergency management program.

However, CNS has not validated OST host site interface capabilities during the five-year period. (See **Deficiency D-CNS-2** and **OFI-CNS-2**.) CNS plans to conduct a host site exercise in 2024. Nonetheless, CNS and NPO actively participated in April 2019 Nuclear Weapon Accident/Incident Exercise with OST. The postulated incident occurred offsite but involved many CNS and NPO response cadres and employees.

Armstrong County

CNS and NPO have adequately established and maintain interface capabilities with Armstrong County for an alternate EOC, firefighting, emergency management, and warning systems. CNS adequately validated the Armstrong County interface capability in three exercises and validated initial notification capability in eight exercises during the five-year period.

Carson County

CNS and NPO have adequately established and maintain interface capabilities with Carson County for an alternate EOC, firefighting, emergency management, warning systems, and John C. Drummond Center (JCDC) response. CNS adequately validated Carson County interface capability in five exercises and validated initial notification capability in eight exercises during the five-year period.

Carson County Sheriff's Department

CNS and NPO have adequately established and maintain interface capabilities with the Carson County Sheriff's Department for law enforcement to support the protection of special nuclear material (SNM) and other national security assets, people, equipment, and property located at Pantex. CNS adequately validated the Carson County Sheriff's Department interface capability in three exercises and further supported this validation by formally evaluating its response to two actual incidents during the five-year period.

City of Amarillo

CNS and NPO have adequately established and maintain interface capabilities with the City of Amarillo for firefighting, emergency management, and warning systems. CNS adequately validated the City of Amarillo interface capability in five exercises and validated initial notification capability in eight exercises during the five-year period.

City of Amarillo Police Department

CNS and NPO have adequately established and maintain interface capabilities with the City of Amarillo Police Department for law enforcement to support the protection of SNM and other national security assets, people, equipment, and property located at Pantex. CNS adequately validated the City of Amarillo Police Department interface capability in one exercise and further supported this validation by formally evaluating its response to three actual incidents during the five-year period.

Potter County

CNS and NPO have adequately established and maintain interface capabilities with Potter County for firefighting support. However, CNS has not validated the Potter County interface capability during the five-year period. (See **Deficiency D-CNS-2**.)

Randall County

CNS and NPO have adequately established and maintain interface capabilities with Randall County for firefighting support. However, CNS has not validated the Randall County interface capability during the five-year period. (See **Deficiency D-CNS-2**.)

State of Texas's Department of Public Safety

CNS and NPO have adequately established and maintain interface capabilities with the DPS for law enforcement to support the protection of SNM and other national security assets, people, equipment, and property located at Pantex. CNS adequately validated the DPS interface capability in three exercises during the five-year period.

Northwest Texas Hospital

CNS and NPO have adequately established and maintain interface capabilities with Northwest Texas Hospital (NWTH) for the transport, acceptance, and treatment of radiologically or chemically contaminated or potentially contaminated or injured patients from Pantex. NWTH, located in Amarillo, is the closest Level 3 trauma center to Pantex and is accessible by ambulance and two air medical transport services. CNS adequately validated the NWTH interface capability in four exercises during the five-year period.

Baptist Saint Anthony's Health System

CNS and NPO have adequately established and maintain interface capabilities with Baptist Saint Anthony's (BSA) Health System for the transport, acceptance, and treatment of radiologically or chemically contaminated or potentially contaminated, injured patients from Pantex. BSA is also located in Amarillo and is accessible by ambulance. CNS adequately validated BSA interface capability in one exercise during the five-year period.

Offsite Response Interface Capabilities Conclusions

CNS and NPO have adequately interfaced and coordinated with local, state, and Federal agencies and with organizations responsible for offsite emergency response to protect the public, responders, and workers, and to minimize impact to property and the environment. Interrelationships with local, state, and Federal organizations are appropriately prearranged and documented in formal plans, agreements, understandings, or other prearrangements for mutual assistance detailing emergency measures provided by non-Pantex entities.

CNS adequately validated offsite response interface capabilities during the five-year period with three exceptions. CNS focused on validating initial notification points, consequence assessment support, and receiving support from key offsite organizations, including Carson County and the City of Amarillo. Several exercises also validated more specialized response interfaces, including capabilities provided by the counties, NWTH, BSA, and the FBI. However, CNS has not validated its integrated response capability with Potter and Randall Counties related to firefighting support. In addition, CNS has not validated OST host site interface capabilities during the five-year period.

3.3 **Response Facilities and Systems**

The objective of this portion of the assessment was to determine and validate the provision of adequate emergency facilities and systems commensurate with the associated hazards and threats identified in the all-hazards planning basis. In addition, sites such as Pantex must establish and maintain capabilities for an EOC, alternate EOC, and JIC, as well as supporting equipment, as required by DOE Order 151.1.D. Furthermore, other important emergency response facilities and systems identified by CNS and NPO were assessed.

Emergency Operations Center

CNS has adequately established and maintains its primary EOC at Building 12-130. Accessible on a 24hour basis, the EOC is the primary facility for coordinating emergency response and mitigation activities with offsite state, local, and Federal agencies and organizations. In addition, the EOC interfaces with the JIC to implement EPI protocols and procedures. The facility is equipped with both secure and non-secure information management systems. CNS adequately validated the EOC capability in 12 exercises and further supported this validation by formally evaluating its response to 4 actual incidents during the fiveyear period.

Alternate Emergency Operations Center

CNS has adequately established and maintains an alternate EOC capability and primary response location at the Nuclear Radiological Incident Response Compound, located at the Rick Husband Amarillo International Airport, which is capable of supporting EOC functions. CNS maintains its alternate EOC capability in a 28-ft cargo trailer stored at the Nuclear Radiological Incident Response Compound, which would be moved and set up at the primary or secondary response locations. Preplanned secondary locations for the alternate EOC are located at the Armstrong County Activity Center in Claude, Texas, and the Carson County War Memorial Building in Panhandle, Texas. CNS adequately validated the alternate EOC capability at the Rick Husband Amarillo International Airport in one exercise during the five-year period.

Virtual Emergency Operations Center

CNS has adequately established and maintains an emergency management support center at the JCDC to use if protective actions prohibit ERO members from reporting to their respective ERO duty stations. CNS only allows use of this facility when protective actions prevent EOC cadre members from responding to either the primary or the alternate EOC locations. However, CNS has not validated the virtual EOC capability during the five-year period.

Operations Center

CNS has adequately established and maintains an OC for surveillance and control of operational processes to manage and conduct an initial incident assessment and mitigation and initially direct protective actions. The OC is located in Building 12-130 and staffed continuously to serve as the location from which day-to-day site operations are coordinated. When an emergency occurs, the Pantex PSS activates the EOC cadre, as appropriate, to effectively manage response and recovery activities. CNS adequately validated the OC capability in 13 exercises and further supported this validation by formally evaluating its response to 5 actual incidents during the five-year period.

Tactical Operations Center

CNS has adequately established and maintains a TOC that provides command and control of securityrelated incidents that might require a protective force response and is interconnected with the EOC and any applicable DOE or local law enforcement agency representatives. As necessary, the TOC is activated for security/law enforcement emergencies. Additionally, the facility may become the unified incident command post when designated by the IC. This designation often happens during emergencies when the fire department, protective force, and RSD transition to a unified command structure. CNS adequately validated the TOC incident command post capability in 12 exercises during the five-year period.

Media Center and Joint Information Center

CNS has adequately established and maintains an onsite MC and offsite JIC to disseminate information to the public. The MC, located in the Pantex Visitor Center (Building 16-12), provides a workspace for NPO and CNS EPI staff and a briefing area for the media. Audiovisual support and sound amplification are available in the briefing area. CNS uses a designated spokesperson from the JIC to distribute information regarding a General Emergency. The JIC, located outside the emergency planning zone at

the Amarillo College West Campus, Amarillo, Texas, provides workspace for NPO and CNS personnel, interfacing organization personnel (e.g., state, city, and counties), and news media representatives. NPO and CNS adequately validated the capability of these facilities in 13 exercises with the MC activated 5 times and JIC activated 10 times during the five-year period. During two exercises, EPI responsibilities transferred from the MC to the JIC.

Medical Facility

CNS has adequately established and maintains a medical facility located in the onsite JCDC. The medical facility is the primary location for triage, treatment, and disposition of employees injured and contaminated or exposed to HAZMAT. This facility has the necessary equipment and supplies for emergency first aid of persons exposed to hazardous or radioactive material requiring decontamination. CNS adequately validated the medical facility capability in 12 exercises during the five-year period.

Personnel Decontamination Facilities

CNS has adequately established and maintains personnel decontamination facilities for decontamination of non-injured employees in the event of a large-scale radiological contamination incident. JCDC has a decontamination shower collocated with OHS on the first floor for injured contaminated personnel. In addition, various decontamination showers are located in the Zone 12-South area of Pantex. CNS adequately validated the personnel decontamination facilities capability in seven exercises during the five-year period.

Emergency Management Information System and Your Area Mapping System

CNS has adequately established and maintains EMInS and your area mapping system (YAMS) as the primary information management systems to provide orderly collection and dissemination of information during an emergency. EMInS uses computer and video equipment integrated by software in a distributed workstation configuration to gather, store, and display relevant information. EMInS connects workstations in the OC, TOC, EOC, and JIC, as well as several offsite agencies, including DOE Headquarters. Furthermore, CNS organized EMInS data into summary charts providing succinct information to onsite and offsite responders. In addition, using YAMS, CNS integrated numerous EMInS databases with graphical outputs using graphical information system maps. CNS adequately validated the EMInS/YAMS capability in 13 exercises and further supported this validation by formally evaluating its response to 4 actual incidents during the five-year period.

Paging System

CNS has adequately established and maintains an automated paging system for activating the ERO cadre. The personal computer-based system provides an interface with the contracted paging service provider. The paging system has several levels of backup, including the preplanned scenarios to activate an alphanumeric paging system with predetermined messages for all types of weather warnings as a backup activation system. CNS adequately validated the paging system capability in 13 exercises and further supported this validation by formally evaluating its response to 4 actual incidents during the five-year period.

Outdoor Warning System

CNS has adequately established and maintains an outdoor warning system to alert onsite personnel working outdoors of necessary protective actions and to alert the public to necessary protective action

recommendations due to emergency conditions involving the release of radiological materials at Pantex with potential offsite consequences. CNS adequately validated the outdoor warning system offsite capability in one exercise and the onsite capability in three exercises during the five-year period.

Response Facilities and Systems Conclusions

CNS has adequately established, maintains, and validated appropriate emergency response facilities and most systems in a constant state of readiness, enabling effective emergency response. CNS maintains dedicated facilities and systems, in accordance with the Pantex emergency plan. In addition, CNS appropriately focused validation of capabilities on primary facilities and systems, including the OC, EOC, EMInS/YAMS, and paging system used during any activation of the ERO. Furthermore, CNS adequately validated alternate facilities and the personnel decontamination facilities capabilities during the five-year period.

4.0 BEST PRACTICES

There were no best practices identified as part of this assessment.

5.0 FINDINGS

There were no findings identified as part of this assessment.

6.0 **DEFICIENCIES**

Deficiencies are inadequacies in the implementation of an applicable requirement or standard. Deficiencies that did not meet the criteria for findings are listed below, with the expectation from DOE Order 227.1A for site managers to apply their local issues management processes for resolution.

Consolidated Nuclear Security, LLC

Deficiency D-CNS-1: CNS did not validate its IC capability during a radiation incident to ensure that effective control is established at the incident scene in accordance with the Incident Command System and timely initial immediate worker protective actions are issued in accordance with OSHA 1910.120. (DOE Order 151.1D, Attachment 3, Paragraph 3; Attachment 4, Paragraph 9 and Paragraph 15)

Deficiency D-CNS-2: CNS did not validate three response interface capabilities (Potter and Randall Counties firefighting support and integration of OST emergency response capabilities for an event scene inside the Pantex boundary) during the five-year period. (DOE Order 151.1D, Attachment 4, Paragraph 15)

7.0 OPPORTUNITIES FOR IMPROVEMENT

The assessment team identified two OFIs to assist cognizant managers in improving programs and operations. While OFIs may identify potential solutions to findings and deficiencies identified in assessment reports, they may also address other conditions observed during the assessment process. These OFIs are offered only as recommendations for line management consideration; they do not require

formal resolution by management through a corrective action process and are not intended to be prescriptive or mandatory. Rather, they are suggestions that may assist site management in implementing best practices or provide potential solutions to issues identified during the assessment.

Consolidated Nuclear Security, LLC

OFI-CNS-1: Consider ensuring that all aspect of the Pantex emergency response capabilities are validated over a five-year period by maintaining a rolling five-year matrix to monitor the validation of capabilities.

OFI-CNS-2: Consider ensuring that an effective interface is established and validated as an OST host site by:

- Obtaining the latest revision of the OST *Concept of Operations between NNSA Host Sites and the Office of Secure Transportation* and, if necessary, updating Pantex plans and procedures to be consistent with the OST concept of operations
- Training the Pantex ERO, as necessary, on the revised procedures
- Conducting an OST-focused exercise once every five years to validate Pantex host site capability.

Appendix A Supplemental Information

Dates of Assessment

Remote Assessment: November 30, 2020, to February 2, 2021

Office of Enterprise Assessments (EA) Management

Nathan H. Martin, Director, Office of Enterprise Assessments John E. Dupuy, Deputy Director, Office of Enterprise Assessments Kevin G. Kilp, Director, Office of Environment, Safety and Health Assessments Kevin M. Witt, Director, Office of Nuclear Safety and Environmental Assessments Charles C. Kreager, Director, Office of Worker Safety and Health Assessments Jack E. Winston, Director, Office of Emergency Management Assessments Joseph J. Waring, Director, Office of Nuclear Engineering & Safety Basis Assessments

Quality Review Board

John E. Dupuy – QRB Chair Thomas C. Messer William F. West Michael A. Kilpatrick – Advisor to the QRB

EA Assessors

Anthony D. Parsons – Lead John D. Bolling Brad J. Edler William J. Scheib