Independent Assessment of the 2025 Full-scale Emergency Management Exercise at West Hackberry Strategic Petroleum Reserve

July 2025

U.S. DEPARTMENT of ENERGY | Office of Enterprise Assessments

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Acronyms

CRAD	Criteria and Review Approach Document
CRO	Control Room Operator
DOE	U.S. Department of Energy
EA	Office of Enterprise Assessments
EOC	Emergency Operations Center
EOS	Emergency Operations System
ERO	Emergency Response Organization
ERT	Emergency Response Team
FFPO	Fluor Federal Petroleum Operations
GIS	Geographical Information System
IC	Incident Commander
MOA	Memorandum of Agreement
OCC	Operations Control Center
OE	Operational Emergency
OFI	Opportunity for Improvement
OSRO	Oil Spill Response Organization
PA	Protective Action
PMO	Project Management Office
SPR	Strategic Petroleum Reserve
USCG	United States Coast Guard

INDEPENDENT ASSESSMENT OF THE 2025 FULL-SCALE EMERGENCY MANAGEMENT EXERCISE AT WEST HACKBERRY STRATEGIC PETROLEUM RESERVE

Executive Summary

The U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) conducted an independent assessment of the emergency management program during the 2025 full-scale exercise at the West Hackberry Strategic Petroleum Reserve (SPR) site from January to March 2025. This assessment evaluated the effectiveness of the management and operating contractor, Fluor Federal Petroleum Operations (FFPO) and the SPR Project Management Office (PMO) in managing and maintaining emergency response organization (ERO) performance via the March 12, 2025, full-scale emergency management exercise. This assessment considered requirements documented in DOE Order 151.1D, *Comprehensive Emergency Management System*. EA appraised the performance of the ERO at key decision-making venues to determine whether FFPO responded effectively to an Operational Emergency and took appropriate response measures to protect workers, responders, and the public.

SPR PMO and FFPO implemented a hazardous material program at West Hackberry SPR, rather than a core program as defined by DOE Order 151.1D, *Comprehensive Emergency Management System*, because of naturally occurring hazardous materials (e.g., hydrogen sulfide and benzene) contained in crude oil. EA identified that, because crude oil is excluded from the definition of hazardous materials in DOE Order 151.1D, the West Hackberry SPR site would more appropriately be designated as a core program rather than a hazardous material program. Reclassification as a core program alleviates unnecessary regulatory requirements identified in DOE Order 151.1D that incur additional resources and costs needed for a hazardous material program. SPR PMO and FFPO concurred with this determination and committed to implementing a core emergency management program.

EA identified the following strengths, including two best practices:

- FFPO and SPR PMO developed and maintain a West Hackberry SPR incident management handbook, which provides emergency operations center leadership and ERO personnel with a set of readily available information, templated documents, and guidance related to emergency operations center operations and incident administration. (Best Practice)
- FFPO maintains a well-equipped and strategically organized decontamination trailer, which supports rapid deployment and efficient operations during emergency response exercises. (Best Practice)
- SPR PMO and FFPO have successfully cultivated strong and collaborative relationships with key offsite response partners, including the United States Coast Guard, improving coordination and interoperability during emergency scenarios.

EA also identified several areas of concern as summarized below:

- FFPO has not documented all required elements related to the full range of Operational Emergencies outlined in the all-hazards survey, which limits comprehensive emergency preparedness and program compliance.
- FFPO has conducted minimal planning for the ERO to develop and maintain situational awareness by providing a common operating picture among incident response components and external partners.
- FFPO processes do not ensure that all emergency conditions specified in DOE Order 151.1D will be promptly categorized as Operational Emergencies not further classified.
- FFPO did not provide complete and accurate initial and follow-up exercise notifications to the DOE Watch Office.

In summary, the SPR PMO and FFPO emergency management program is capable of responding to hazards at the West Hackberry SPR site, and several strengths were identified during the exercise. However, performance weaknesses in the response to the postulated incident warrant additional management attention. Identified weaknesses relate to the documentation of required elements in the all-hazards survey, the categorization of emergency conditions as Operational Emergencies, and the completeness and accuracy of initial and follow-up notifications. Until the concerns identified in this report are addressed or effective mitigations are put in place, responses to incidents could present challenges to effective and timely response actions. Implementing the emergency management program as a DOE Order 151.1D core program will support the improvement of response capability and readiness and foster long-term emergency management program sustainability at the West Hackberry SPR site.

INDEPENDENT ASSESSMENT OF THE 2025 FULL-SCALE EMERGENCY MANAGEMENT EXERCISE AT WEST HACKBERRY STRATEGIC PETROLEUM RESERVE

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Emergency Management Assessments, within the independent Office of Enterprise Assessments (EA), assessed the 2025 full-scale emergency management exercise at the West Hackberry Strategic Petroleum Reserve (SPR) site. This assessment was conducted as part of a series of assessments of emergency management exercises and programs at DOE sites. Assessment activities were conducted from January to March 2025.

This assessment evaluated the effectiveness of the management and operating contractor, Fluor Federal Petroleum Operations (FFPO) and the SPR Project Management Office (PMO) programs in managing and maintaining emergency response organization (ERO) performance via the March 12, 2025, full-scale emergency management exercise. This assessment evaluated the performance of the ERO at key venues, including the incident command post, the site control room, and the site's emergency operations center (EOC) with a focus on decision-making ERO positions, such as the incident commander (IC), control room operator (CRO), and EOC director. This assessment was conducted in accordance with the *Plan for the Independent Assessment of 2025 Emergency Preparedness Exercise at the West Hackberry Strategic Petroleum Reserve*, except as discussed in the next paragraph.

2.0 METHODOLOGY

The DOE independent oversight program is described in and governed by DOE Order 227.1A, *Independent Oversight Program*, which EA implements 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 the order.

As identified in the assessment plan, this assessment considered requirements documented in DOE Order 151.1D. EA used the following sections of EA CRAD 33-09, Revision 0, *DOE Order 151.1D Emergency Management Program*: 4.2 *All Hazards Planning*, 4.4 *Emergency Operations System*, 4.6 *Offsite Response Interface*, 4.7 *Emergency Categorization*, 4.8 *Protective Actions*, 4.11 *Notifications and Communications*, and 4.15 *Exercises*.

Prior to the assessment, SPR PMO and FFPO implemented a hazardous material program at West Hackberry SPR, rather than a core program as defined by DOE Order 151.1D, *Comprehensive Emergency Management System*, because of naturally occurring hazardous materials (e.g., hydrogen sulfide and benzene) contained in crude oil. The SPR PMO and FFPO follow bulk petroleum industry requirements imposed by the United States Coast Guard (USCG) and Environmental Protection Agency that contain bulk crude oil provisions that provide for emergency planning and response to a release of the hazardous constituents of crude oil. During the assessment, EA identified that, because crude oil is excluded from the definition of hazardous materials in DOE Order 151.1D, the West Hackberry SPR site would more appropriately be designated as a core program rather than a hazardous material program. Reclassification as a core program alleviates unnecessary regulatory requirements identified in DOE Order 151.1D that incur additional resources and costs needed for a hazardous material program. SPR PMO and FFPO concurred with this determination and committed to implementing a core emergency management program. Based on this commitment, EA revised its assessment approach for the West Hackberry

exercise using core program requirements as contained in DOE Order 151.1D, attachment 3. See Section 3.1 below.

EA examined key documents, such as the exercise package, technical planning basis documents, exercise evaluation guides, emergency plans, checklists, procedures, and policies. EA also interviewed key personnel responsible for developing and executing the associated programs. EA observed the controller/evaluator pre-exercise brief, the exercise, and the post-exercise hotwashes and debrief activities; and evaluated significant portions of the EOC, control room, and key exercise venues focusing on exercise response execution. The members of the assessment team, the Quality Review Board, and the management responsible for this assessment are listed in appendix A.

There were no previous findings for follow-up addressed during this assessment.

3.0 RESULTS

FFPO designed and conducted a full-scale exercise to evaluate emergency response capabilities and multiple processes used by key onsite ERO groups. Accordingly, the exercise focused on the use of appropriate plans, policies, and procedures, as well as the actions of ERO members involved in management, direction, and command and control functions. FFPO conducted the exercise in a realistic, real-time environment that necessitated actions by facility workers and the site-level ERO. The exercise scenario involved a simulated crude oil spill from the cavern 110 wellhead located at the northern edge of the site immediately adjacent to Black Lake. The CRO received a simulated low-pressure alarm on cavern 110 simultaneously with a verbal report of an oil rupture from cavern 110 wellhead. The CRO activated the emergency response team (ERT) and completed immediate actions. ERT members reported to the fire bay, conducted a brief, and deployed to the scene of the rupture. The ERT established a decontamination station, entered the cavern area, isolated the rupture, and simulated decontamination of the entry team. Following the isolation of the spill, the ERT deployed oil containment booms on Black Lake to protect environmentally sensitive areas. Once activated, ERO members reported to the EOC, initiated their procedures, and conducted emergency planning for the incident in coordination with several offsite agencies. FFPO terminated the exercise once the rupture was isolated, and the oil was contained.

3.1 Technical Planning Basis

This portion of the assessment determined whether FFPO has established a technical planning basis that identifies all hazards applicable to the operation of the site and establishes the planning basis for the emergency management program.

As noted in Section 2.0 above, EA identified that the West Hackberry SPR site would be more appropriately designated as a core program rather than a hazardous material program. SPR PMO and FFPO concurred with this determination and committed to implementing a core emergency management program. At the time of this assessment, an evaluation of whether similar program modifications are appropriate for the other three SPR sites (i.e., Bryan Mound, Big Hill, and Bayou Choctaw) had not been performed. (See **OFI-FFPO-1**.)

The SPR technical planning basis is documented in AAA9020.1032, *Strategic Petroleum Reserve All-Hazards Survey*; AAA9020.1450, *Strategic Petroleum Reserve Threat and Hazard Identification Risk Assessment*; and WH15500.9, *Emergency Response Procedures West Hackberry*. Collectively, these documents contain the analysis and response procedures for most Operational Emergencies (OEs) that could occur at the West Hackberry SPR site. The technical planning basis documents for SPR are

conservative and consistently identify isolation and protective action (PA) zone distances beyond the minimum required distances.

The all-hazards survey provides a summary of the results of hazardous material screening. However, contrary to DOE Order 151.1D, attachment 3, paragraphs 2.a, 2.d.(1), and 2.e.(1), FFPO does not document several required elements of an all-hazards survey, including completeness of hazardous material screening and listing, and impact analysis of a spectrum of OEs. (See **Deficiency D-FFPO-1** and **OFI-FFPO-2**.) As a result, FFPO has not developed a complete identification and qualitative assessment of site-specific hazards that could require a response. Specifically:

- Contrary to DOE Order 151.1D, attachment 3, section 2.e.(1), the all-hazards survey mentions but does not screen chemicals authorized to be brought on site by subcontractor personnel for special and infrequent operations as either requiring or not requiring an emergency planning hazards assessment.
- Contrary to DOE Order 151.1D, attachment 3, section 2.e.(1), the all-hazards survey does not list or refer to a list of screened chemicals (other than crude oil constituents) that the site authorizes for use on site and, therefore, does not document the screening of those materials.
- Contrary to DOE Order 151.1D, attachment 3, sections 2.a and 2.d.(1), the all-hazards survey does not contain a listing or description of the health, safety, or environmental impacts of the potential emergencies resulting from natural hazards, technological hazards, or human-caused incidents that could occur at SPR.

Technical Planning Basis Conclusions

The SPR technical planning basis documents are conservative and document the analysis and response procedures for most OEs. The all-hazards survey provides a summary of the results of hazardous material screening. However, the all-hazards survey is missing several required elements.

3.2 Emergency Operations System

This portion of the assessment determined whether the FFPO emergency operations system (EOS) provides centralized collection, validation, analysis, and coordination of information related to an SPR West Hackberry incident response, and whether that information is used to obtain and maintain situational awareness and support a common operating picture among response components to achieve a well-coordinated, well-understood, and effective response.

FFPO had adequate EOS capabilities to collect incident information and to provide needed expertise for incident analysis from centralized, appropriately equipped facilities, and to ensure that the EOS was consistent with the operational concepts of the National Incident Management System. When an OE was declared, the normal operating organization transitioned to an ERO and appropriately expanded as required by the scope of the incident. The defined authorities, responsibilities, tasks, and lines of communication of the ERO adequately superseded those of the normal operating organization for the duration of the emergency. The West Hackberry SPR incident management handbook, developed by FFPO and SPR PMO, provides EOC leadership and ERO personnel with a set of readily available information, templated documents, and guidance related to EOC operations and incident administration. Additionally, the handbook provides a standardized reference to facilitate uniform response, access to critical procedures, checklists, and contact information should IT systems be compromised; the handbook also provides a summary of responsibilities for key Incident Command System positions. Moreover, other DOE field elements may consider developing the pocket-sized emergency response reference guide to enhance activation, operations, and demobilization procedures, creating consistency among EOC

operational procedures. SPR's use of the incident management handbook is considered a **Best Practice** because it streamlines and enhances emergency response coordination and operations.

However, FFPO has not incorporated all EOS requirements for a DOE Order 151.1D core program into the West Hackberry SPR emergency plan; also, FFPO has not provided a well-defined implementation of an effective concept of operations in the emergency plan implementing procedures. Furthermore, minimal planning exists for the ERO to develop and maintain situational awareness by providing a common operating picture among incident response components and external partners using an automated information system. (See **OFI-FFPO-3** and **OFI-FFPO-4**.)

Emergency Operations System Conclusions

The FFPO EOS is consistent with the operational concepts of the National Incident Management System, and FFPO has adequate capabilities to collect incident information and provide the necessary expertise for incident analysis from centralized, appropriately equipped facilities. FFPO's use of the West Hackberry SPR incident management handbook provides EOC leadership and ERO personnel with a set of readily available information, templated documents, and guidance related to EOC operations and incident administration. However, FFPO has not incorporated all EOS requirements for a DOE Order 151.1D core program into the West Hackberry SPR emergency plan, and has not provided a well-defined implementation of an effective concept of operations in the emergency plan implementing procedures.

3.3 Emergency Categorization

This portion of the assessment evaluated the effectiveness of FFPO in meeting core program requirements to correctly categorize an emergency incident as promptly as possible, but no later than 15 minutes after incident identification by the predetermined decision-maker for categorization, and no more than 30 minutes from initial discovery.

During the exercise, CROs rapidly assessed incident conditions using security cameras and declared a General Emergency based on evidence of a significant oil spill with potential offsite environmental impacts. Because exercise actions pertaining to hazardous material programs, such as classification, are outside the scope of this assessment, the decision to classify the incident as a General Emergency is excluded from this discussion. The OE declaration was made 9 minutes after the verification of flange failure and less than 30 minutes from initial discovery, which meets DOE time requirements for incident categorization.

The FFPO control room lead evaluator appropriately identified during the exercise hotwash that CROs had not referenced procedures prior to the emergency declaration. However, even if procedures had been used, they were not sufficiently detailed for the categorization of OEs. Specifically, only broad concepts regarding incident categorization are mentioned in chapter 5 of the *SPR Incident Management Handbook* and in WHI5500.9, *Emergency Response Procedures: West Hackberry*, chapter 16. Further, these documents collectively describe some actions that are required following categorization, such as the prompt notification of the DOE Watch Office, but omit the discussion of other required actions. Consequently, contrary to DOE Order 151.1D, attachment 3, paragraph 8, FFPO processes do not ensure that all emergency conditions specified in DOE Order 151.1D will be promptly categorized as OEs not further classified as required, including: (1) any environmental incident with potentially serious consequences; (2) health and safety emergencies, such as incidents resulting in mass casualties; and (3) security incidents, such as terrorist attacks/threats, bomb detonations, and kidnappings. (See **Deficiency D-FFPO-2** and **OFI-FFPO-5**.) Prompt categorization of all potential OEs is necessary to ensure that appropriate PAs are implemented and that all applicable local, state, and Federal decision-makers are notified.

Emergency Categorization Conclusions

Overall, FFPO plans and procedures broadly describe DOE Order 151.1D emergency categorization requirements but do not ensure that all emergency conditions identified in DOE Order 151.1D will be promptly categorized as OEs, as required.

3.4 Notifications and Communications

This portion of the assessment determined whether FFPO provided initial and follow-up notifications promptly, accurately, and effectively to all appropriate stakeholders, and whether the ERO maintained effective communications throughout the response.

During the exercise, FFPO effectively notified workers, field responders, the ERO, and offsite agencies. After receiving initial indications of a crude oil release at cavern 110, the control room staff promptly notified workers to avoid the area and dispatched field response teams (ERT and protective force) to respond to the release. Furthermore, the control room staff promptly notified the internal and offsite stakeholders by phone as required by internal procedures, the Oil Pollution Act of 1990, and DOE Order 151.1D. In turn, the New Orleans operations control center (OCC) staff verbally made the initial notification to the DOE Watch Office and followed up with an electronic notification within time requirements. At the end of the exercise, the OCC provided the DOE Watch Office with the required OE termination notification.

However, FFPO did not provide complete and accurate initial and follow-up notifications to the DOE Watch Office as required. The initial notification to the DOE Watch Office by the OCC staff did not contain the required information, such as declaration of an OE and implementation of onsite PAs. In addition, FFPO did not issue the required follow-up notifications when conditions changed, including isolating the crude oil release at cavern 110, establishing oil spill containment on Black Lake, activating the EOC, and establishing onsite unified command with the USCG, state, and local parish organizations. As a result, contrary to DOE Order 151.1D, attachment 3, paragraph 11.a, FFPO did not provide complete and accurate initial and follow-up notifications to all appropriate stakeholders. (See **Deficiency D-FFPO-3** and **OFI-FFPO-4**.) Consequently, FFPO did not provide the DOE Watch Office with all the information needed to ensure that DOE Headquarters organizations were kept up to date on the incident.

Notifications and Communications Conclusions

Overall, FFPO effectively notified workers, field responders, the ERO, and offsite agencies. However, FFPO did not provide the DOE Watch Office with complete and accurate initial and follow-up notifications to ensure that DOE Headquarters organizations were kept up to date on the incident.

3.5 Protective Actions

This portion of the assessment evaluated whether FFPO correctly identified and implemented pre-determined PAs for hazards/threats identified in the all-hazards planning basis to minimize the consequences of an emergency and to protect the health and safety of workers.

FFPO appropriately identifies onsite PAs in the West Hackberry response pre-plans, WHI5500.9, chapter 5. The response pre-plans identify hazards and associated pre-determined PAs for SPR buildings, facilities, and well pads. The response pre-plans identify isolation zone distances for each well pad based on the potential release of hazardous substances naturally occurring in crude oil (e.g., hydrogen sulfide and benzene) as identified in the all-hazards survey.

During the exercise, FFPO appropriately issued PAs to protect workers and first responders. Upon learning of the oil release from cavern 110, the CRO immediately made an announcement to site personnel via the public address and radio systems to remain clear of cavern 110, which is in an unpopulated portion of the site. In addition, the CRO directed SPR security to set up a roadblock on the road leading to cavern 110. At the incident scene, the IC maintained tactical control of the response, including PA decision-making for the ERT. The IC coordinated the activities of multiple response elements at the scene to stabilize the incident, ensure life safety, and preserve the environment. These actions were communicated to the EOC throughout the response.

FFPO maintains a well-organized decontamination trailer containing equipment needed for field decontamination, including ground cover, portable containment pools, benches, water pumps, and water hoses, allowing for quick and effective deployment. FFPO constructed the decontamination trailer by customizing a 14-foot enclosed trailer with specialized brackets and storage systems to carry the equipment. FFPO also built specialized support stands, water manifolds, and other tools to facilitate effective field decontamination. The decontamination trailer was observed to be well organized, with all equipment labeled and stored in designated areas. Further, the ERT was well trained in the set-up and operation of the decontamination station. ERT members quickly assumed their roles in the establishment of the station and demonstrated a detailed understanding of its operation. Although the use of water was simulated, ERT members efficiently deployed and operated the decontamination station during the exercise. FFPO's decontamination trailer, as well as efficient deployment of the decontamination station, is considered a **Best Practice** because it significantly enhances the safety of workers.

FFPO emergency response procedures do not require the recording of start times for the use of self-contained breathing air, nor do the incident command post forms have a place to record the start times. During the exercise, the entry team self-initiated breathing air, but waited 11 minutes prior to entering the cavern area, having partially depleted air supplies. (See **OFI-FFPO-6**.)

Protective Actions Conclusions

FFPO appropriately issued PAs to protect workers and first responders during the exercise. The CRO appropriately issued an announcement to avoid the area and directed security to block access to the cavern 110 area. The IC coordinated the activities of multiple response elements at the scene to stabilize the incident, ensure life safety, and preserve the environment. FFPO's well-organized decontamination trailer, which was efficiently deployed and operated during the exercise, was cited as a best practice. However, FFPO does not control or monitor self-contained breathing air start times to ensure that response personnel have sufficient air for their response duties.

3.6 Offsite Response Interfaces

This portion of the assessment evaluated the effectiveness of SPR PMO and FFPO in meeting core program requirements associated with establishing and maintaining interfaces with local, state, and Federal organizations responsible for emergency response or those which may be used to supplement response capabilities based on threats/hazards identified in the all-hazards planning basis to include planning for severe events.

During the exercise, SPR PMO and FFPO demonstrated effective working relationships with applicable offsite agencies integrating these agencies into the EOC command structure. The Calcasieu Parish Office of Homeland Security and Emergency Preparedness, the Louisiana Department of Environmental Quality, and the USCG responded to the SPR during the exercise and integrated into the EOC, establishing unified command. While not providing response resources during the exercise, the offsite agencies represented in the EOC provided concurrence with the SPR response plans and actions. Also integrated into the EOC

and ERT was the Oil Spill Response Organization (OSRO), a subcontractor employed to support the entire emergency mitigation and clean-up process as described in the SPR emergency response procedure. During the exercise, OSRO provided response assets, including integrating into the EOC and dispatching a team to the ERT that deployed oil containment booms on Black Lake to contain the postulated oil spill.

Although SPR has developed effective working relationships with local, state, and Federal offsite agencies, formalized memoranda of agreement (MOAs) pertaining to mutual aid with these offsite agencies have not been developed and approved by SPR PMO. As mentioned in the *Baseline Needs Assessment of Emergency Response Capabilities Strategic Petroleum Reserve*, offsite mutual aid resources may not be a reliable resource given that response is strictly through an informal or volunteer basis. SPR participates as a member of the West Hackberry Southwest Louisiana Mutual Aid Association, which consists of multiple organizations, including traditional fire services and other industrial emergency response brigades, providing SPR the possibility to receive offsite response for primary needs such as structural firefighting, medical aid, technical rescue, and hazardous materials responses. However, the association's response resources are voluntary, with the response services from local fire departments and/or industrial ERTs surrounding the site not formally documented in an MOA and only provided if the organizations choose to respond. Additionally, there is no clear or formal agreement that describes SPR obligations to provide mutual aid to an offsite request, including any potential limitations. (See **OFI-PMO-1**.)

Offsite Response Interfaces Conclusions

SPR PMO and FFPO have established and maintain effective interfaces with local, state, and Federal organizations responsible for emergency response as required for a DOE Order 151.1D core program. Representatives from the local parish, state, USCG, and the OSRO are integrated into the SPR EOC per procedures, providing concurrence on SPR response plans and actions during the emergency response. OSRO also provided response assets during the exercise, including a response team that deployed oil containment booms on Black Lake. However, formalized MOAs pertaining to mutual aid with offsite agencies have not been developed.

3.7 Exercise Design and Conduct

This portion of the assessment evaluated the ability of the FFPO exercise program to validate emergency response capabilities and test and validate emergency plans and procedures for identified hazards.

FFPO follows the exercise program requirements of the Oil Pollution Act of 1990 as documented in the 2016 National Preparedness for Response Exercise Program Guidelines. Additionally, FFPO complies with the exercise program requirements for a core program in DOE Order 151.1D. As such, FFPO conducts one announced exercise and one un-announced exercise at each of its four sites every year.

For the 2025 exercise at the West Hackberry SPR site, FFPO designed and conducted the exercise in accordance with its procedures. FFPO based the exercise on the primary hazard of an oil spill and developed a complete exercise plan that contained 15 National Preparedness for Response Exercise Program objectives and 10 DOE order objectives to be validated. The field manager approved the plan 42 calendar days prior to the exercise, meeting the DOE order requirement of more than 30 calendar days. Additionally, the FFPO controller organization placed appropriate emphasis on safety throughout the conduct of the exercise. Finally, FFPO conducted player hotwashes and a thorough controller/evaluator debrief at the completion of the exercise.

Exercise Design and Conduct Conclusions

FFPO designed its 2025 full-scale emergency management exercise in accordance with its procedures and executed the exercise appropriately and safely.

4.0 BEST PRACTICES

Best practices are safety-related practices, techniques, processes, or program attributes observed during an assessment that may merit consideration by other DOE and contractor organizations for implementation. The following best practices were identified as part of this assessment:

- FFPO and SPR PMO maintain the West Hackberry SPR incident management handbook providing EOC leadership and ERO personnel with a set of readily available information, templated documents, and guidance related to EOC operations and incident administration. Additionally, the handbook provides a standardized reference to facilitate uniform response, access to critical procedures, checklists, and contact information should IT systems be compromised, and a summary of responsibilities for key Incident Command System positions. Moreover, other DOE field elements may consider developing the pocket-sized emergency response reference guide to enhance activation, operations, and demobilization procedures, creating consistency among EOC operational procedures, which significantly contributes to the effectiveness of emergency operations during an incident.
- FFPO maintains a well-organized decontamination trailer containing equipment needed for field decontamination, including ground cover, portable containment pools, benches, water pumps, and water hoses, allowing for quick and effective deployment. The decontamination trailer was observed to be well organized, with all equipment labeled and stored in designated areas. Further, the ERT was well trained in the set-up and operation of the decontamination station. FFPO's decontamination trailer, as well as efficient deployment of the decontamination station, significantly enhances the safety of workers.

5.0 FINDINGS

No findings were identified during 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.

Fluor Federal Petroleum Operations

Deficiency D-FFPO-1: FFPO does not document several required elements of an all-hazards survey, including completeness of hazardous material screening and listing, and impact analysis of a spectrum of OEs. (DOE Order 151.1D, att. 3, pars. 2.a, 2.d.(1), and 2.e.(1))

Deficiency D-FFPO-2: FFPO processes do not ensure that all emergency conditions specified in DOE Order 151.1D will be promptly categorized as OEs not further classified as required, including: (1) any environmental incident with potentially serious consequences; (2) health and safety emergencies, such as

incidents resulting in mass casualties; and (3) security incidents, such as terrorist attacks/threats, bomb detonations, and kidnappings. (DOE Order 151.1D, att. 3, par. 8)

Deficiency D-FFPO-3: FFPO did not provide complete and accurate initial and follow-up notifications to all appropriate stakeholders. (DOE Order 151.1D, att. 3, par. 11.a)

7.0 OPPORTUNITIES FOR IMPROVEMENT

EA identified the OFIs shown below 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.

Fluor Federal Petroleum Operations

OFI-FFPO-1: To ensure appropriate emergency management implementation at all of the SPR sites, consider performing an extent-of-condition determination to evaluate whether the emergency management programs at the other three SPR sites (i.e., Bryan Mound, Big Hill, and Bayou Choctaw) can be treated as core programs rather than hazardous material programs.

OFI-FFPO-2: To improve the completeness and thoroughness of the all-hazards survey, consider revising it to include:

- A listing of each of the OE types in DOE Order 151.1D, attachment 3, sections 2.a and 2.d.(1)(a) through (c) and evaluating the impacts of each for every SPR location, including the administrative and support facilities, such as the Stennis and Elmwood complexes as well as the petroleum storage sites.
- Adopting a scenario and impact analysis similar to the format shown in DOE Guide 151.1-1B, *Comprehensive Emergency Management System Guide*, section 2.1.6, step 4: Qualitatively Describe Potential Impacts.
- Explicitly evaluating all chemicals authorized to be brought onto the sites for the potential to require an emergency planning hazards assessment, whether they are routinely on site or not, and regardless of what entity will bring them onto the site, including urgently needed chemicals.
- Either listing all the evaluated chemicals that screen into or out of requiring an emergency planning hazards assessment or maintaining that listing in a manner that the all-hazards survey refers to.

OFI-FFPO-3: To address situational awareness and common operating picture weaknesses, consider strengthening site-specific emergency plans, emergency plan implementing procedures, checklists, and other command media by adding and implementing requirements for:

- Analyzing the field operations and ERO information flow dynamics to define the critical paths of key information and to identify expected actions for achieving and maintaining situational awareness among all teams.
- Adapting an information flow structure that assigns specific responsibility for each key information set, including responsibility for verifying and validating essential incident information collected in an

automated information system (e.g., Web-based Emergency Operations Center Software (WebEOC®)) or other response records.

- Establishing feedback loops into the issuing decision-maker for key task completion, including offsite notifications, worker PA notification, accountability, and establishing access control.
- Incorporating guidance on the use of information management tools and resources to flow down requirements into the emergency plan, implementing procedures, and response checklists.
- Integrating incident management tools with other web-based geographical information systems (GISs) to provide ERO personnel with views, data, and analysis tools for the site, the surrounding area, and interiors of many onsite buildings.
- Automating emergency public information approval processes.

OFI-FFPO-4: To improve the concept of operations, consider strengthening site-specific emergency plans, emergency plan implementing procedures, checklists, and other command media by adding and implementing requirements for:

- A web-based GIS that provides users with views, data, and analysis tools for the DOE site, their surrounding areas, and interiors of many on-site buildings. EA has observed effective systems built on Esri's ArcGIS platforms that incorporate data from many sources into a robust system for capturing, managing, and displaying all forms of geographically referenced information. These data sources may include meteorological monitoring data, field monitoring data, site master planning data, personnel data obtained from corporate systems, facilities data, and engineering drawings including site drawings, utility drawings, and facility floor plans.
- For emergency responders, add to the concept of operations the use of the web-based GIS to provide information and tools to enable better decision-making in emergency management through a common operating picture; also, add analysis tools that provide recommendations for initial PAs and damage assessment, etc.
- To improve the emergency response concept of operations between DOE and offsite emergency response, consider the following:
  - Ensuring the contractual flowdown of DOE Order 151.1D requirements to any service provider to the extent necessary to ensure the subcontractor's compliance with the requirements.
  - Revising site emergency plans to clearly describe and document the concept of operations implemented by the site and offsite agencies using requirements of DOE Order 151.1D which are applicable to each organization.
  - Defining the functions, responsibilities, and authorities between the site and offsite responders to determine jurisdictional boundaries and areas of potential overlap.
  - Developing a comprehensive command and control procedure agreed to by both the site and offsite responders to implement the integrated concept of operations written in the emergency plan.
  - Requiring a general concept of operations that restricts the offsite responders from modifying or terminating the predetermined PAs developed by the site, unless there is evidence that the PAs are inadequate, or without the approval of the site's emergency director.
  - Establishing formal methods of communication and protocols to facilitate the flow of decision-making information among offsite organization EOCs, and requiring SPR PMO participation in decision-making following the implementation of initial preplanned protective measures and activities.

- Formalizing the DOE Headquarters notification process by:
  - ♦ Defining the process in an SPR-level implementing procedure.
  - ♦ Assigning the OCC staff as the lead in obtaining the necessary information from the site control rooms like the Nuclear Regulatory Commission practice in gathering information from control rooms.
  - ♦ Establishing a standard DOE Headquarters notification form for SPR OCC staff members to use, with informational copies in the control rooms.

OFI-FFPO-5: To improve emergency categorization processes consider:

- Removing hazardous material emergency classification requirements and realigning FFPO plans and procedures with the emergency categorization requirements for emergency management core programs.
- Developing a process for categorization of all OE conditions required by DOE Order 151.1D, attachment 3, paragraph 8, such as an emergency action level procedure that contains specific categorization criteria.
- Shifting authority for emergency categorization from the site director to the site operations shift supervisor after an effective process has been developed, including steps in the site operations shift supervisor checklist to formally declare an OE immediately following discovery.
- Including steps in CRO checklists to reference categorization criteria and inform the operations shift supervisor when conditions for categorization of OEs have been met.
- Including steps in CRO and/or site operations shift supervisor checklists to complete, or ensure the completion of, all associated tasks required by OE declaration, including implementation of PAs and time-urgent notifications.

OFI-FFPO-6: To enhance the safety of workers using self-contained breathing air during an emergency response, consider revising emergency response procedures to require the controlling, recording, and monitoring of breathing air start times.

Strategic Petroleum Reserve Project Management Office

OFI-PMO-1: To enhance working relationships with offsite agencies, consider developing signed MOAs with applicable offsite agencies to formalize the expected response that will be provided when mutual aid is requested during an emergency.

Appendix A
Supplemental Information

Dates of Assessment

January 27 to March 27, 2025

Office of Enterprise Assessments (EA) Management

John E. Dupuy, Director, Office of Enterprise Assessments
William F. West, Deputy Director, Office of Enterprise Assessments
Kevin G. Kilp, Director, Office of Environment, Safety and Health Assessments
David A. Young, Deputy Director, Office of Environment, Safety and Health Assessments
Brent L. Jones, Acting Director, Office of Nuclear Safety and Environmental Assessments
David Olah, Acting Director, Office of Worker Safety and Health Assessments
Jack E. Winston, Director, Office of Emergency Management Assessments
Brent L. Jones, Director, Office of Nuclear Engineering and Safety Basis Assessments

Quality Review Board

William F. West, Advisor
Kevin G. Kilp, Chair
Christopher E. McFearin
Timothy B. Schwab
William A. Eckroade

EA Assessment Team

Dr. Terrance J. Jackson, Lead
John D. Bolling
Dirk L. Foster
Robert F. Gee
Jonathan L. Pack
John L. Riley
Charles J. Rives
William J. Scheib