

EMERGENCY MANAGEMENT

Inspection Criteria, Activities, and Lines of Inquiry

Functional Area: Hazards Survey (HS) and Emergency Planning Hazards Assessment (EPHA)

Inspection Criteria: Emergency planning includes the identification of hazards and threats. A hazards survey is the qualitative portion of the hazards identification process. It briefly describes the potential impacts of emergency events or conditions and summarizes the planning and preparedness requirements that apply. If determined to be required, an EPHA includes the identification and characterization of hazardous materials specific to a facility/site, analyses of potential accidents or events, and evaluation of potential consequences.

- The HS documents identify:
 - Each site/facility and associated generic emergency events/conditions,
 - Hazardous materials to determine the need for further analyses in a facility-specific quantitative EPHA,
 - The impact on health and safety of workers and the public, the environment, and/or national security, and
 - Planning and preparedness requirements, including DOE Orders and other Federal, State, and local regulations, that apply.
- The EPHAs describe facility operations, missions, processes, demographics, facility locations, transportation activities, and characteristics of the region beyond the site boundary.
- The EPHAs contain current quantitative information regarding hazardous material inventories or maximum quantities associated with a facility.
- Hazardous materials analyzed in the EPHA are selected based on a defined screening process that identifies materials potentially impacting site workers and/or the public.
- Storage location, process use, physical properties, and health effect parameters of materials at risk are documented for all materials addressed by the HS/EPHAs.
- A spectrum of potential emergency events/conditions is analyzed in the EPHAs.
- Assumptions, methodology, and evaluation techniques used in developing the HS/EPHAs are documented.
- Consequences of releases are estimated and documented in the EPHAs.
- The size and shape of the emergency planning zone (EPZ) is determined by health effect parameters, the spectrum of scenarios, potential release consequences and the geo-political boundaries.
- HS/EPHA documents are periodically reviewed and updated to incorporate relevant changes in site/facility conditions.

Inspection Activity: Review the discussion of HS and EPHA weaknesses in the Independent Oversight inspection report of the previous emergency management inspection at the site. Review procedures for developing and maintaining HS and EPHA documents, and review the HS/EPHA documents for higher hazard buildings; other selected buildings; and transportation activities. Review Safety Basis Documents (e.g., DSAs) and hazardous material databases, and conduct building walkdowns, as necessary. Interview personnel who are responsible for developing, reviewing, and maintaining HS/EPHA documents.

Inspection Lines of Inquiry:

- Do procedures exist that provide clear guidance for developing and maintaining the HS and EPHA documents, including identifying contractor and DOE/NNSA Field Element roles and responsibilities for review and approval?

- To what extent is the hazardous material screening process documented?
- Does the hazardous material screening process appropriately consider hazardous materials for inclusion in an EPHA based the material's potential for adverse consequences to co-located workers, the public, and the environment (i.e., irrespective of the existence or value of a material's published threshold planning quantity)?
- Are HS/EPHA material-at-risk quantities consistent with the hazardous material inventory databases and authorization bases?
- Where administrative limits on hazardous material quantities exist, are controls in place to ensure that these limits are not exceeded?
- Do the HS/EPHAs accurately reflect facility hazardous material storage/use conditions?
- Has the appropriate spectrum of events, including offsite events, been evaluated as initiating events for a hazardous material release impacting site workers?
- Are the analytical assumptions appropriately supported and the input parameters and analyses technically accurate?
- Do facility operations and hazardous material inventory change processes provide thresholds that require projects to be reviewed by the emergency management organization?
- Do the EPHAs support development of emergency action levels (EALs) and formulation and communication of pre-determined protective actions?
- Have all available release indicators been identified in the EPHAs through appropriate barrier analysis?
- Is facility management involved in developing, reviewing, and approving the HS/EPHA?
- Are the appropriate technical experts engaged in developing and reviewing the HS/EPHA?
- Are the DOE/NNSA Field Element responsibilities for HS/EPHA review and approval clearly defined and implemented?
- Is the rationale for the composite EPZ formally and thoroughly documented and are the DOE/NNSA Field Element responsibilities for EPZ review and approval clearly defined and implemented?

Functional Area: Emergency Plans and Procedures

Inspection Criteria: The site-specific plans and procedures support a comprehensive emergency management program that is based upon a graded approach and is commensurate with the hazards.

- The emergency plan documents the emergency management program and describes the provisions for responding to an operational emergency.
- Emergency plan implementing procedures describe how emergency plans will be implemented.
- Emergency plans and procedures are prepared, reviewed annually, and updated as necessary for all applicable facilities and are integrated within the overall site emergency management program.

Inspection Activity: Review the emergency plan, implementing procedures, and job aids. Interview emergency management staff and responders. Review selected facility/building emergency plans/protocols, interview facility managers and responders, and conduct facility walkdowns, as necessary.

Inspection Lines of Inquiry:

- Does the emergency plan describe an entire concept of operations for the emergency management program that is consistent with the requirements of DOE Order 151.1C?
- Are roles and responsibilities for program administration and response actions clearly defined?

- Do plans, procedures, and memoranda of agreement accurately describe the respective roles, responsibilities, authorities, and interfaces for DOE/NNSA Field Element and contractor responses to a site emergency?
- Does the emergency plan clearly delineate the chain of command in the event of an emergency?
- Have procedures been developed for all critical emergency response functions?
- Are the procedures consistent with the emergency plan and are they maintained in accordance with a defined, formal process?
- Do procedures and job aids for event categorization/classification, notification, and protective action decision-making provide consistent, detailed instructions that can be effectively used in a time-urgent response to an event?
- Are protective actions such as evacuation and sheltering clearly identified and capable of being implemented as specified?
- Has a mechanism for performing personnel accountability been established and implemented?
- Is equipment shutdown and securing of facilities/materials addressed in procedures and able to be readily implemented?
- Have facility-level procedures been fully integrated with those of the site-wide emergency management program?
- Do facility-specific procedures provide clear instructions for the local response to all postulated building emergencies for the facility?
- Do the EALs include a complete spectrum of events and accurately reflect output of the EPHAs?
- Are the indicators specified in the EALs available?
- Have clear lines of communication been established for use during an emergency and their effectiveness verified during exercises?

Functional Area: Training, Drills, and Exercises

Inspection Criteria: A coordinated program of training and drills is established for developing and maintaining specific emergency response capabilities for all personnel and organizations that the site/facility expects to respond to onsite emergencies. Emergency management exercises are systematically planned and conducted to validate elements of the emergency management program; demonstrate the integrated capabilities of the emergency response resources; and identify areas for improvement.

Inspection Activity: Review the emergency plan, training plans and procedures, schedules, records, drill/exercise packages, and training/drill/exercise program evaluation reports. Interview emergency management and security training personnel.

Inspection Lines of Inquiry:

- Have emergency response organization (ERO) members been appropriately trained via a systematic process that is well defined and effectively implemented?
- Is the training program implemented as described in program documents?
- Do initial and refresher training activities provide an appropriate mixture of classroom, self-study, and hands-on training?
- Is the quality of training maintained through a formal development and approval process that includes periodic reviews and updates for program changes and lessons learned?
- Is the emergency management training program effectively integrated and coordinated with related training provided by other organizations (e.g., security)?
- Is annual refresher training provided to ERO members and site personnel who monitor facility/site conditions and are expected to recognize and report emergency events or conditions?

- Are training and qualification of ERO members effectively managed to keep primary and alternate personnel current in their training requirements and maintain an accurate duty roster?
- Are there objective, performance-based standards for position qualification that must be satisfied prior to an individual's name being added to the ERO roster?
- Are new employees provided sufficient information to understand their responsibilities in an emergency and to take the proper protective action?
- Is training made available to offsite responders at least annually and does that training provide the appropriate level and content of information for those responders?
- Are drills an integral part of training and do they have the appropriate level of complexity, focus, and site-specific parameters to identify and correct needed performance improvements?
- Are security and fire department personnel routinely invited to participate in facility-level drills and exercises?
- Are drills and exercises conducted with sufficient frequency to ensure that all ERO members maintain proficiency for their assigned response duties?
- Does the drill program include provisions for tracking deficiencies identified during drills?
- Does the exercise program ensure that all elements of the emergency preparedness and response program are evaluated over a multi-year period?
- Does the exercise program include a mechanism to ensure that the objectives of all participating onsite and offsite organizations are considered and incorporated into exercise plans as appropriate?
- Are exercise evaluation criteria observable, measurable, and appropriate to the exercise scenario and objectives?
- Are exercise objectives and criteria consistent with the response duties, requirements, and expectations identified in plans and procedures?
- Are exercise packages developed with sufficient rigor and quality to provide meaningful and thorough evaluations of response capability?
- Do exercise packages adequately address simulations, inject messages, response timelines, controller instructions, meteorological information, radiological and/or chemical data, and safety and security provisions?
- Is the process for conducting and evaluating exercises adequately defined and supported?
- Is post-exercise information from participants, evaluators, and controllers collected, documented, and analyzed to identify program and performance weaknesses and areas for improvement?
- Are exercise reports based on exercise objectives and criteria, and do they provide management with useful information regarding the state of the emergency management program?
- Are post-exercise corrective action plans developed as appropriate and are responsibilities for corrective actions formally assigned to personnel and tracked to completion?
- Does the exercise program validate plan/procedure revisions, implemented corrective actions, and program improvements?

Functional Area: Emergency Public Information

Inspection Criteria: The emergency public information (EPI) element is intended to provide the public, media, and site employees with accurate and timely information during an emergency event. In part, this is based on having in place a day-to-day program that educates the public and the media about actions that may be required during an emergency response.

- Plans and processes are established to provide accurate, candid, and timely information to workers and the public during an emergency.
- EPI functions can be staffed consistent with the nature, severity, duration, and public/media perception of a site event.

- A designated joint information center (JIC) provides adequate space, equipment, communications lines, and information resources to accommodate the media and accomplish required functions.
- Plans and provisions are established to ensure that EPI functions are coordinated with DOE Headquarters, other Federal agencies, and State and local authorities.
- Prior to emergencies, workers, site personnel, and State/local authorities are informed of emergency response plans and capabilities, notification and warning mechanisms, and types of protective actions.

Inspection Activity: Review the emergency plan, EPI plan, and EPI implementing procedures. Interview DOE/NNSA Field Element and contractor EPI personnel. Perform walkdowns of EPI facilities (e.g., Joint Information Center – JIC), as appropriate.

Inspection Lines of Inquiry:

- Are plans and procedures up-to-date, and do they adequately and accurately describe the roles, responsibilities, and interfaces of DOE/NNSA HQ, DOE/NNSA Field Element, and contractor EPI personnel?
- Are critical EPI positions identified based on the nature and potential severity of an emergency and are trained personnel available to fill those positions?
- Is there a formal and effective process that facilitates the timely, approved release of accurate information to the public?
- Do plans and procedures establish an effective process for training/educating EPI site personnel, media, the public, and other stakeholders?
- Do plans and procedures identify the personnel, facilities, and equipment needed to effectively perform EPI, media center, and JIC functions?
- Do plans and procedures describe a process to monitor for and correct misinformation and rumors, and respond to public/media inquiries?
- Are pre-formatted forms available to facilitate rapid initial transmittal of emergency information to the media?
- Is pre-prepared, accurate, and current site and facility-specific information available for ready dissemination to the media and public?
- Are key EPI personnel knowledgeable of their roles and responsibilities as described in plans and procedures?
- Do EPI personnel receive specialized initial training, refresher training, and participate in drill and exercises?
- Are tools and equipment up-to-date, available, accessible, and operable as required to support the EPI functions?

Functional Area: Offsite Response Interfaces

Inspection Criteria: Establishing and maintaining effective interfaces with offsite authorities is necessary to ensure that emergency response activities are integrated and coordinated, and hence provide efficient mechanisms for protecting workers, the public, and the environment.

- Federal, Tribal, state, and/or local agencies/organizations, responsible for augmenting site resources in response to an onsite emergency event, are identified.
- Documented plans and protocols have been established for mutual aid, emergency notification and communications, and response organization interfaces.
- Interrelationships with Federal, tribal, state, and local agencies/organizations are prearranged and documented in formal plans, agreements, understandings, and/or other means, and are mutually understood.

- Emergency-related information, site hazards, and emergency response program training is made available to offsite responders.
- DOE administers and/or participates in developing and implementing mutual assistance agreements with offsite authorities.

Inspection Activity: Review relevant discussions of offsite interface weaknesses in the previous Independent Oversight inspection report. Review the emergency plan, implementing procedures, memoranda of understanding, and mutual aid agreements. Interview DOE/NNSA Field Element and contractor personnel responsible for establishing and maintaining interfaces with offsite authorities. Interview representatives of offsite organizations relied upon for coordination, mutual aid, emergency assistance, and implementing protective actions within the site's EPZ.

Inspection Lines of Inquiry:

- Do plans, procedures, and agreements accurately describe offsite interfaces?
- Do plans and procedures outline the relationship between onsite and offsite response organizations, particularly with regard to incident command and control?
- Are there any additional interfaces relied upon that is not described in the emergency plan?
- Are interfaces maintained through routinely scheduled meetings, and do mechanisms exist to keep those not in attendance informed of discussions and agreements?
- Are agreements with offsite authorities current and accessible?
- Are expectations for mutual aid clearly documented, and are resources available to provide the mutual aid?
- Have clear lines of communication been established for use during an emergency and their effectiveness verified during exercises?
- Are the persons responsible for receiving notification of a DOE/NNSA emergency knowledgeable of the site's emergency response concept of operations?
- Is training made available to offsite responders at least annually?

Functional Area: Emergency Facilities and Equipment

Inspection Criteria: Establishing requirements for, obtaining, and maintaining the facilities and equipment necessary to support an emergency response is necessary to ensure that emergency response capabilities are consistent with the results of the site's emergency planning activities, and hence can adequately protect workers, the public, and the environment.

- Facilities and equipment adequate to support emergency response are available, operable, and maintained.
- The characteristics of the dedicated command center facility and other facilities are adequate to reliably support the designated functions and assignments.
- Adequate personnel protective equipment, and other emergency equipment and supplies, are readily available and operable.
- Designated response facilities, especially multi-use facilities, are adequately maintained to ensure timely activation and availability to support an emergency response.

Inspection Activity: Review relevant discussions in the previous Independent Oversight inspection report. Review the emergency plans, procedures, hazards surveys, emergency planning hazards assessments, and fire department baseline needs assessment (as applicable). Interview DOE/NNSA Field Element and contractor personnel responsible for managing and maintaining emergency response facilities and equipment, and conduct selected facility and equipment walkdowns.

Inspection Lines of Inquiry:

- Do emergency plans require backup power supplies for essential facilities and equipment?
- Does the surveillance, maintenance, and testing program provide reasonable assurance that essential equipment will function as required?
- Are warning alarms and site emergency notification systems routinely tested?
- Are personnel knowledgeable of the location and status of emergency management facilities, equipment, and supplies?
- Are appropriate types and quantities of chemical and radiological monitoring instruments available and strategically located for ready access and use in an emergency?
- Have emergency responders been sufficiently trained to ensure proper employment of protective gear and monitoring instruments?
- Are communication systems compatible for all potential response teams without interference from non-participants?
- Are inventories and locations of necessary response equipment and supplies accurate and periodically reviewed?
- Are the range, units, and instrument set points of instruments consistent with the HS/HA and procedures?
- Are communication systems available for transmittal of classified information?
- Are evacuation routes, shelters, staging areas and assembly points clear of debris, clearly marked, and adequately lighted?
- Are emergency response facilities and command centers adequately sized and equipped to facilitate the response effort?
- Are access controls in place to preclude unnecessary or unauthorized personnel from entering response areas and facilities?

Functional Area: Emergency Response Decision-Making

Inspection Criteria: DOE/NNSA and contractor emergency responders are able to apply their skills, procedures, training, and experience to make appropriate decisions and to properly execute actions to protect emergency responders, workers, and the public. Critical elements of the initial response include event recognition, formulation of protective actions, categorization and classification of the emergency, and notifications to onsite personnel and offsite decision-making authorities.

- Emergency responders and decision-makers are proficient in executing their assigned functions and duties in a timely manner so as to protect the health and safety of site personnel and the public during an incident or event.
- Adequate data are obtained and analyzed to assess and mitigate emergency events.
- Based on current knowledge of the situation, decision-makers determine and implement a reasonable, well-planned course of action.
- Procedures and processes have been implemented to ensure that estimates of onsite and offsite consequences of actual or potential releases of hazardous materials are correctly computed and assessed in a timely manner throughout an emergency.
- Consequence assessments are integrated with classification and protective action decisions, incorporate facility and field indications and measurements, and are coordinated with offsite agencies.

Inspection Activity: Review the emergency plan, emergency plan implementing procedures, and job aids used by emergency responders. Conduct interviews and limited-scope performance tests.

Inspection Lines of Inquiry:

- Are mechanisms available and thresholds identified that permit prompt categorization and classification of all events that may affect facilities and the site?
- Do notification and communication systems provide accurate, timely notice of off-normal events to response organizations, facility personnel, co-located site workers, and offsite agencies?
- Are mechanisms (including warning systems) available to promptly determine and implement protective actions for responders, site personnel, and the public throughout emergencies?
- Are implementing procedures, work instructions, job aids, and emergency response equipment available?
- Are lines of authority and an on-scene incident command structure adequately defined and effectively implemented for security and operational emergency events affecting hazardous materials on or associated with the site?
- Is proficiency in effective emergency response demonstrated by decision-makers through timely and accurate event recognition, determination and implementation of protective actions, accurate categorization and classification, and timely notifications during performance testing?
- Is the consequence assessment process integrated with processes for categorizing and classifying an emergency and protective action decision-making?
- Are the tools used in consequence assessment, such as hardware and software for meteorological monitoring and dose modeling, available, reliable, calibrated, and consistent with DOE and industry standards?

Functional Area: DOE/NNSA Line Program Management

Inspection Criteria: Emergency management program management includes elements of the readiness assurance program as well as performance of some planning and response functions. Readiness assurance activities ensure that program plans, procedures, and resources are adequate and sufficiently maintained to mount an effective response to an emergency. Key elements of the readiness assurance program include active involvement in setting expectations; monitoring the effectiveness of the contractor and DOE/NNSA field element programs; and implementing timely and effective corrective actions for identified weaknesses and lessons learned from assessments, training, drills, exercises, or actual events. DOE/NNSA field elements also staff some emergency response organization positions.

- DOE/NNSA performance monitoring activities are sufficient to ensure that the emergency management program is implemented and maintained consistent with policies and requirements.
- DOE/NNSA reviews and approves emergency plans, the readiness assurance plan, and the emergency planning zone.
- DOE/NNSA personnel ensure that hazards survey and emergency planning hazards assessment (EPHA) processes are adequately performed and documented, plans and procedures are prepared, annually reviewed, and updated as necessary.
- DOE/NNSA conducts periodic assessments of facility emergency management programs and/or the contractor self-assessment program to ensure compliance with policy and directives and to verify the adequacy and effectiveness of corrective actions.
- DOE/NNSA ensures that resources are available to implement emergency management requirements for facilities and activities under their cognizance.

Inspection Activity: Review assessments conducted by DOE/NNSA Headquarters organizations and DOE/NNSA Field Element personnel. Interview DOE/NNSA Field Element personnel and review corrective action tracking mechanisms, line oversight plans, DOE/NNSA Field Element emergency response organization (ERO) training and qualification records, and self-assessment reports. Review the

status of implementation of selected corrective actions developed in response to findings identified during the previous Independent Oversight inspection.

Inspection Lines of Inquiry:

- Has the DOE/NNSA field element established plans and procedures for routine monitoring of the site emergency management program that integrates all types of oversight activities?
- Are formal reports of DOE/NNSA field element oversight activities prepared that document program monitoring results and issues?
- What mechanisms are in place for the DOE/NNSA field element to provide formal, routine feedback to the contractor on program performance?
- Does the DOE/NNSA field element track all open findings from external evaluations of the site program and has a mechanism been implemented for determining that findings have been closed?
- To what extent has the DOE/NNSA field element been involved with validation of corrective actions intended to address weaknesses identified in previous Independent Oversight inspections at the site?
- Does the finding closure process provide assurance that corrective actions are effective and will prevent recurrence of findings?
- Is the emergency readiness assurance plan (ERAP) being used effectively as a management planning tool to communicate the readiness of the DOE/NNSA field element emergency management program and to identify the resources necessary to implement and maintain the program?
- What mechanisms are in place for DOE/NNSA field element personnel to provide emergency management program status information and issues to Headquarters program office managers?
- Has the DOE/NNSA field element established any contract performance measures or financial incentives for the contractor to improve or maintain the quality of their emergency management program?
- Has the DOE/NNSA field element conducted any assessments of its own emergency response functions and program elements?
- Does the DOE/NNSA field element's review and approval process for emergency plans, ERAP, emergency planning zone, and EPHAs provide assurance that the reviews are thorough and will capture any inadequacies in the documents?
- Has the DOE/NNSA field element established procedures/checklists that adequately address emergency responsibilities for each ERO position staffed by a Federal employee?
- Does the DOE/NNSA field element have trained emergency response staff capable of providing program direction, support, and assistance during emergencies?
- Has the DOE/NNSA field element modified the site operating contract to include DOE O 226.1?
- Has DOE/NNSA implemented sufficient planning and preparation activities to be able to support implementation of DOE O 151.1C and DOE O 226.1 in the timeframes required by the Orders?

Functional Area: Contractor Feedback and Improvement

Inspection Criteria: Line management has established formalized mechanisms and processes (at the institutional, facility/project, and activity levels) for collecting both qualitative and quantitative information on emergency management performance as the basis for informed management decisions to improve performance through assessments, performance tests, and other feedback mechanisms. The evaluation/self-assessment program periodically validates that stated emergency capabilities are sufficient and ensures that appropriate and timely improvements are made in response to needs identified through program and exercise evaluations.

- The evaluation/self-assessment program periodically validates that stated emergency capabilities are sufficient.

- The evaluation/self-assessment and issues management programs ensure that appropriate and timely improvements are made in response to needs identified through program and exercise evaluations.

Inspection Activity: Review findings and discussions of weaknesses in the previous report of the Independent Oversight inspection of the site's emergency management program, and review the status of the associated corrective actions. Interview emergency management staff and review program management documents, status reports, evaluation process documents, and corrective action tracking mechanisms. Review assessments scheduled and conducted by the site contractor(s). Review reports of actual events at the site. Review the status of the corrective actions related to emergency management and emergency response.

Inspection Lines of Inquiry:

- Has the site contractor defined a comprehensive process for conducting annual assessments of the emergency management program?
- Are assessments conducted using standards and criteria commensurate with the complexity of the site's emergency management program?
- Are assessments effective in identifying and correcting program and performance weaknesses?
- To what extent does the site use periodic assessments to verify the status of ongoing corrective measures and to verify the effectiveness of previously-implemented corrective actions?
- Have processes and mechanisms been established to track and verify correction of findings or application of lessons learned from assessments, training, drills, and exercises and to ensure timely and effective implementation of corrective actions?
- Has the emergency management program integrated into (and implemented) the site and DOE lessons learned programs?
- What mechanisms are in place for emergency management program managers to provide information to and to raise issues and concerns to senior managers?
- Is the ERAP being used effectively as a management planning tool to communicate the readiness of the site emergency management program and to identify the resources necessary to implement and maintain the program?
- Has the site implemented an action plan to establish a contractor assurance program, including emergency management, in the time frame required by DOE O 226.1?
- Have mechanisms been established to prioritize corrective actions according to relative severity and programmatic impact?
- Have corrective actions resulting from previous Independent Oversight evaluations at the site effectively addressed the identified weaknesses?