

APPENDIX D. Evaluation Criteria

D.1 Introduction

This appendix provides a standard set of generic performance-based criteria to be used for the evaluation of the planning, implementation, maintenance, and response of emergency management programs across the DOE/NNSA complex. These evaluation criteria were developed to provide a comprehensive set of criteria applicable to the diversity of DOE/NNSA facilities/sites and activities based on meeting the performance goal(s) specified for each program element. Performance goals (or standards) were developed from DOE O 151.1C, *Comprehensive Emergency Management System*.

Differences in hazards will dictate how facilities/sites and activities approach program planning, implementation, maintenance, and response. Hence, evaluations of such programs should be conducted in a manner commensurate with hazards and missions. Criteria presented here are intentionally generic and were developed to reflect the actual or expected general performance of the emergency management element and not the specific details of plans/procedures, “tools”, organizational structure, products, resources, training, etc.

Criteria should **NOT** be used during an **exercise evaluation** *as given*. Program-specific expectations and characteristics should be developed for each emergency management program based on facility/site- or activity-specific hazards and associated program capabilities (e.g., derived from existing plans and procedures). From these attributes, generic criteria can be restated in the context of the specific program. This facilitates the evaluator’s task by bounding the general intent and scope of the function or activity, as expressed in the generic criteria, and focusing on the key program-specific attributes incorporated in the revised criteria. In contrast, during a **program evaluation**, generic criteria for programmatic and response elements are used as the standard, against which plans and procedures, and preparedness activities are judged in the context of facility/site- or activity-specific hazards, associated program capabilities, and the “commensurate with hazards” approach.

For example, a criterion that addresses “sufficient” staffing of Emergency Response Organization (ERO) positions is stated generally to cover a site with a 5 member ERO as well as a site with 100 members. An actual quantitative “sufficient” staffing requirement is program-specific. The standard set of criteria can be interpreted in the context of a particular program or activity, or a specific scenario during an exercise, in a number of ways, including the elimination of inapplicable criteria and the development of program-specific criteria from the generic criteria given in this chapter. Any modifications or additions to the set of generic criteria contained herein should be documented and well understood by all evaluating elements prior to conduct of the evaluation.

Fifteen broad sets of criteria are grouped according to Program Element in Sections D.2, D.3, and D.4 of this appendix. Each program element section includes the performance

goal of the element and a set of evaluation criteria, separated according to *response* or *programmatic* subelements, as appropriate. The set of criteria are labeled to identify applicable evaluation types:

- **P** for program evaluation only,
- **E** for exercise evaluation only,
- **P/E** for both program and exercise evaluations; and
- **CE** for evaluation of the *conduct* of an exercise.

Numbered criteria, for example, P2.1, P/E6.42, P/E12.2, and P/E14.12, represent critical criteria necessary to ensure that the performance goal for each element is satisfied. Subcriteria labeled as a, b, c . . . represent performance that supports the numbered criteria and emphasize a distinguishable function, component, or activity that merits special attention. Subcriteria do not necessarily represent or define the total performance expectations of the criterion; they help *refine* the interpretation of performance failures and specific Findings. CE criteria given in Section D.3.3 for the Exercise program element are used for evaluating planning, control, conduct, and evaluation of an exercise.

As indicated in DOE G 151.1-3, Section 4.4, several **Response** elements have programmatic functions, in addition to their primary response functions. These are given at the end of the lists of response function criteria.

D.2 Technical Planning Basis

Performance Goal:

The Hazards Survey is an examination of the features and characteristics of the facility/site or activity that identifies the generic types of emergency events and conditions and the potential impacts of such emergencies to be addressed by the DOE Comprehensive Emergency Management System. The Hazards Survey identifies key components of the Operational Emergency Base Program that provide a foundation of basic emergency management requirements and an integrated framework for response to serious events involving health and safety, the environment, safeguards, and security. For facilities/sites and activities involved in producing, processing, handling, storing, or transporting hazardous materials that have the potential to pose a serious threat to workers, the public, or the environment, the Hazards Survey provides a hazards screening process for determining whether further analysis of the hazardous materials in an Emergency Planning Hazards Assessment (EPHA) is required.

An EPHA is performed for each facility/site or activity involving at least one candidate hazardous material, as identified through the hazardous material screening process and indicated in the Hazards Survey. EPHAs involve the application of rigorous hazards analysis techniques that provide sufficient detail to assess a broad spectrum of postulated Operational Emergency (OE) events or conditions involving the potential onsite release

of (or loss of control over) hazardous materials and to analyze the resulting consequences. Each EPHA reflects both the magnitude and the diversity of the hazards and the complexity of the processes and systems associated with the hazards, and provides the technical planning basis for determining the necessary plans/procedures, personnel, resources, equipment, and analyses (e.g., determination of an EPZ) for the Operational Emergency Hazardous Material Program.

Evaluation Criteria:

Hazards Survey

- P1.1 The Hazards Survey identifies the generic types of serious emergency events or conditions to which the specific facility/site or activity may be exposed (e.g., fires; flood; tornadoes; earthquakes; hazardous material releases; regulated pollutant or oil spills; safeguards and security events; work place accidents; malevolent acts; mass casualties; wildland fires; nearby offsite non-DOE hazardous material accidents).
- P1.2 The Hazards Survey qualitatively identifies the potential impacts of different generic types of emergencies on health and safety, the environment, and national security.
- P1.3 The Hazards Survey identifies emergency management requirements that constitute the Operational Emergency Base Program:
 - a. DOE orders [other than DOE O 151.1C], other Federal agency, state, and local emergency planning and preparedness requirements associated with different generic types of emergency events or conditions and applicable to the facility/site or activity; and
 - b. Existing plans, such as earthquake self-help plans or mass casualty plans, detailing compliance with Federal, State, or local standards, are incorporated directly into the Operational Emergency Base Program or are invoked by reference.
- P1.4 Facilities/sites and activities that require a documented, quantitative EPHA are identified by a hazardous material screening process and are indicated in the Hazards Survey.
- P1.5 Hazards Surveys are reviewed and updated every three years to include changes in the hazards. If changes result in an increase in hazards, the Hazards Survey is updated immediately; otherwise, the Hazards Survey can be updated at the next scheduled review.

Hazardous Material Screening Process

- P1.6 A hazardous material screening process is developed and applied to facilities/sites and activities involved in producing, processing, handling,

storing, or transporting hazardous materials that have the potential to pose a serious threat to workers, the public, or the environment.

- P1.7 The screening process identifies candidate hazardous materials that, if released in an uncontrolled manner, would immediately threaten or endanger those who are in close proximity; have the potential for dispersal beyond the immediate vicinity in quantities that threaten onsite personnel or the public; and have a potential rate of dispersal to require a time-urgent response to implement protective actions for workers or the public. Protective Action Criteria (PACs) are used to indicate when the consequences of a release of a radioactive or chemical hazardous material threaten or endanger health and safety.
- P1.8 The hazardous material screening process identifies all hazardous materials in a facility/site or activity that require further analysis in an EPHA.
- P1.9 All radioactive materials in a facility/site or activity are subjected to a hazardous material screening process.
- P1.10 Radioactive materials excluded from further analysis in an EPHA include:
- a. Sealed radioactive sources that are engineered to pass the special form testing specified by the Department of Transportation (DOT) or the American National Standards Institute (ANSI);
 - b. Materials in solid form for which there is no plausible dispersal mechanism; materials stored in DOT Type B shipping containers with overpack, if the Certificates of Compliance are current and the materials stored are authorized by the Certificate; and
 - c. Materials used in exempt, commercially available products.
- P1.11 Radioactive hazardous materials that are analyzed in an EPHA include the radioactive materials listed in DOE-STD-1027-92 in quantities greater than the Category 3 values given in Attachment 1, Table A.1, of that Standard.
- P1.12 All chemicals in a facility/site or activity with known or suspected toxic properties are subjected to a hazardous material screening process.
- P1.13 Chemicals excluded from further analysis in an EPHA include:
- a. Materials used in the same form, quantity, and concentration as a product packaged for distribution and use by the general public;
 - b. Materials that have a Health Hazard rating of 0, 1 or 2 based on National Fire Protection Association (NFPA) 704; and

- c. Solid or liquid materials that because of their physical form or other factors (e.g., plausible dispersal mechanisms) do not present an airborne exposure hazard.
- P1.14 Quantities of chemical hazardous materials considered to be “easily and safely manipulated by one person” are determined in accordance with the provisions of 29 CFR 1910.1450(b).
- P1.15 Chemical hazardous materials in quantities greater than a quantity that can be “easily and safely manipulated by one person” that are analyzed in an EPHA include:
- a. Chemicals with an assigned Health Hazard rating of 3 or 4 based on NFPA 704; and
 - b. Chemicals without an assigned Health Hazard rating.
- P1.16 All biological hazardous materials in a facility/site or activity are subjected to a hazardous material screening process.
- P1.17 At a minimum, Federally regulated biological *Select Agents and Toxins*, identified in lists published in Department of Health and Human Services (HHS) regulations [42 CFR 73] and Department of Agriculture (USDA) regulations [7 CFR 331 and 9 CFR 121], require further analysis in an EPHA. Toxins listed in 42 CFR 73 and 9 CFR 121 must exceed the minimum quantities specified to be Federally regulated and require an EPHA.
- P1.18 If biological agents and toxins require further analysis in an EPHA, then a Hazardous Material Program is established.
- P1.19 The possibility that excluded materials could initiate, through fires, explosions, or process upsets, the release of other hazardous materials is considered. In addition, excluded asphyxiates are considered if they have the potential to affect collocated workers because of the large quantity, material characteristics, and favorable geography.
- P1.20 If the screening process identifies at least one hazardous material requiring further analysis, the Hazards Survey must indicate that an EPHA is needed for that facility/site or activity.
- P1.21 The Office of Secure Transportation (OST) develops an EPHA for OST shipments and establishes an Operational Emergency Hazardous Material Program.
- P1.22 An EPHA is developed for shipments that **do not** satisfy governing DOT regulations and specifications for commercial hazardous materials transport. No EPHA is required if the shipment satisfies these commercial transport regulations and specifications.

Emergency Planning Hazards Assessment (EPHA)

- P1.23 The EPHA describes the site and facility or activity, directly or by reference, including:
- a. Site location, facility description, operations, mission, processes, tenant activities, and facility locations (including proximity to adjacent facilities, site boundary, utility and transportation networks);
 - b. Transportation activities, including types and quantities of materials transported, containers, routes, speeds, and controls exercised; and
 - c. Characteristics of the region beyond the site boundary including summaries of demographics (including special populations), administrative boundaries, geographic features, and economic enterprises (e.g., farms, factories).
- P1.24 The EPHA contains a current, accurate compilation of hazardous material inventories or maximum quantities associated with a facility/site or activity based on reliable and comprehensive methods of hazardous material identification (e.g., walkthroughs, shipping records, local chemical inventory systems).
- P1.25 Analyzed hazardous materials are characterized in the EPHA:
- a. Storage location, process use, physical properties, and health effect parameters;
 - b. Engineered controls, administrative controls, storage segregation, safeguards and safety systems for prevention and/or mitigation of releases are identified; and
 - c. Actual barriers to release are identified, such as, containers, buildings, berms, sumps, catch basins, filters, and heating, ventilation and air conditioning (HVAC) systems.
- P1.26 A spectrum of potential emergency event/condition scenarios are postulated and realistically analyzed in the EPHA, including:
- a. Applicable initiating events (e.g., fire, explosion, natural phenomena, malevolent events, accidents, external events);
 - b. Contributing events, accident mechanisms, equipment or system failures, engineered safety system and control failures, source terms, material release chemistry and characteristics, environmental transport and diffusion, exposure considerations, and health effects;

- c. Range of event probabilities and consequences, from low probability, high consequence to high probability, low consequence, including Beyond-Design-Basis events;
 - d. Events exclusively affecting onsite personnel, as well as those affecting the offsite public; and
 - e. Potential malevolent acts applicable to the facility/site or activity based on Design Basis Threat (DBT) guidance, if available.
- P1.27 Emergency events or conditions are **NOT** excluded from analysis in the EPHA based solely on calculated occurrence probabilities or arbitrarily defined delimiters (e.g., credible or incredible, likely or unlikely).
- P1.28 Indicators of emergency event/condition scenarios that can be used for recognition purposes in developing Operational Emergency (OE) categorization criteria and Emergency Action Levels (EALs), as appropriate, are identified and documented in the EPHA.
- P1.29 Estimates of the consequences of hazardous material release scenarios (primarily radioactive and chemical) are calculated and documented in the EPHA:
- a. Receptor locations include facility and site boundaries, collocated facilities, and offsite locations, including special populations (e.g., schools, hospitals, and prisons).
 - b. Calculations are performed for the purposes of protective action determinations, response decision-making, and special planning, [e.g., Emergency Planning Zone (EPZ) determinations].
 - c. Methods and models used for calculating consequences are applicable to the releases analyzed; assumptions used are valid and documented.
- P1.30 Biological agent release scenarios are analyzed to obtain indicators for recognizing OE events/conditions and for initial protective actions. The analysis methodology is documented in the EPHA.
- P1.31 Classified material quantities and storage are analyzed and documented in a classified annex to the EPHA.

Maintenance of the EPHA

- P1.32 The EPHA is reviewed and updated every three years.
- P1.33 An accurate and timely method for tracking changes in operations processes, or accident analyses that involve hazardous materials (e.g., introduction of new materials, new uses, significant changes in inventories, modification of

material environments) is established and maintained for the facility/site or activity.

- P1.34 Management procedures are implemented to ensure that emergency planners are notified of significant changes in inventories, processes, or activities that may affect the results of the EPHA [e.g., active involvement of emergency management personnel in the Integrated Safety Management System (ISMS)].
- P1.35 Sufficient transition time is allowed for emergency management personnel to review the EPHA and modify plans or procedures, as necessary, to account for changes in the hazardous material situation.
- P1.36 Changes made in the facility/activity or activity safety analysis reports, probabilistic risk assessments, vulnerability assessments, fire hazard analyses, environmental impact statements, and other documents that address hazards or potential consequences are integrated with maintenance of the EPHA.
- P1.37 If changes result in an increase in hazardous material inventories or release potential, the EPHA is updated immediately; otherwise, the EPHA can be updated at the next scheduled review.
- P1.38 After a decontamination and decommission action is completed, the Operational Emergency Hazardous Material Program is adjusted to be commensurate with the hazards that remain.

Emergency Planning Zone (EPZ)

- P1.39 The size and shape of the EPZ is determined by the spectrum of scenarios, the consequences of the potential releases, health effect parameters, and geopolitical boundaries beyond the site boundary.
- P1.40 The EPZ is the area within which protective actions will most likely be taken to protect workers or the public from the effects of the majority of airborne hazardous material releases from the facility or site.
- P1.41 The EPZ defines an area within which protective actions will provide for substantial reduction in early lethality for all analyzed airborne hazardous material releases.
- P1.42 The EPZ is sufficiently large that the planning efforts within the defined EPZ provide a substantial basis for expansion of response activities beyond the EPZ, if warranted by actual conditions.
- P1.43 The maximum EPZ for any DOE or NNSA facility or site does not exceed a nominal radius of 10 miles (16 kilometers).
- P1.44 Biological hazardous material release scenarios are not used in determining the size of the EPZ.

D.3 Programmatic Elements

D.3.1 Program Administration

Performance Goal:

Effective organizational management and administrative control of the facility/site or activity emergency management program is provided by establishing and maintaining authorities and resources necessary to plan, develop, implement, and maintain a viable, integrated, and coordinated comprehensive emergency management program.

Evaluation Criteria:

Organizational Management and Administrative Control

- P2.1 An individual is designated to administer the facility/site or activity emergency management program with responsibility and authority to ensure:
- a. The development and maintenance of the Hazards Surveys and EPHAs, emergency plans and procedures, and related and supporting documentation;
 - b. The development of the annual Emergency Readiness Assurance Plan (ERAP);
 - c. The development and conduct of the training and exercise programs and the coordination of readiness assurance (evaluation, assessment) activities; and,
 - d. The coordination of emergency resources by identifying resource needs and ensuring the availability of adequate resources.
- P2.2 The designated administrator has the authority and resources, commensurate with assigned responsibilities, and has access to top-level management.
- P2.3 For biosafety facilities, the designated Responsible Official (RO) is responsible for implementing and maintaining the emergency management program. This designated administrator/official is responsible for tasks that involve compliance with the requirements for the Select Agent Rule(s) [i.e., HHS regulation 42 CFR 73 and USDA regulations 7 CFR 331 and 9 CFR 121] and with existing DOE/NNSA emergency management policy as expressed in DOE O 151.1C.
- P2.4 Administration of planning, preparedness, and readiness assurance activities is established and effectively maintained.
- P2.5 Formal review and approval processes are established and documented to ensure that the planning and development of components of the emergency

management program (e.g., planning analyses, plans and procedures, supporting documentation) receive sufficient oversight by staff, management and DOE elements to ensure consistency, correctness, and completeness.

- P2.6 Reasonable schedules (e.g., documentation submittals, reviews, and approvals; preparedness and readiness assurance activities) are established and enforced to ensure that program planning, preparedness, and readiness assurance activities are initiated, completed, and repeated in a timely and efficient manner.
- P2.7 An emergency management document control system is established that meets industry standards for document review, approval, distribution, and change control.
- P2.8 An auditable administrative program for ensuring the availability of vital records essential to the continued functioning or reconstitution of an organization during or after an emergency, regardless of media, is established and reliably maintained.
- P2.9 If classified information or materials are being used or generated, effective security procedures and controls are implemented, and security reviews are conducted.
- P2.10 Financial resource requirements are identified and budgeted.
- P2.11 Facilities and equipment requirements are identified, monitored, and acquired.
- P2.12 Personnel requirements are identified and addressed.

Specific Program Responsibilities

- P2.13 Emergency plans and procedures are developed, verified, validated, reviewed periodically and updated as necessary.
- P2.14 Emergency management programs and emergency plans are developed for facilities not requiring a Hazardous Material Program that address the minimum Base Program requirements.
- P2.15 Emergency management programs and emergency plans are developed for facilities requiring a Hazardous Material Program that are seamlessly integrated with Base Program requirements.
- P2.16 Facility emergency management programs on a site are consistent, and are integrated to ensure site-wide consistency.
- P2.17 A leased facility owned by DOE/NNSA effectively integrates the activities of the leased facility into the DOE/NNSA site-wide emergency management program.

- P2.18 Biosafety facility incident response plans are integrated with the site-wide emergency management program.
- P2.19 Training, drills, exercises, and evaluation activities are scheduled, conducted, monitored, and documented.
- P2.20 Development and approval of supporting documentation [e.g., Memoranda of Understanding (MOUs), Memoranda of Agreement (MOAs)] is accomplished; periodic reviews and maintenance are scheduled and conducted.
- P2.21 Emergency management documents are controlled, available, and current.
- P2.22 Correction of findings and incorporation of lessons-learned are tracked, addressed, verified and validated.
- a. Methods are in place and implemented to remain apprised of current events and lessons learned and to utilize this information for continuous improvement; and
 - b. A site-wide corrective action program is implemented and effective in correcting problems identified in the emergency management program.
- P2.23 Specific emergency management Order requirements related to administrative responsibilities and emergency management activity (i.e., planning, preparedness, readiness assurance) parameters/constraints are monitored for compliance.

Document Requirements

- P2.24 Current reviewed and approved Hazards Surveys and EPHAs are available and provide technical planning basis information for the development of the Operational Base Program and Operational Hazardous Material Program, commensurate with the hazards.
- P2.25 Emergency plans and procedures:
- a. An emergency plan documents the emergency management program, including provisions for response to an OE; Emergency Plan Implementing Procedures (EPIPs) describe how the emergency plan will be implemented;
 - b. Clearly state roles, responsibilities, and requirements associated with program administration, emergency response organizations, individual positions, operations, and interfaces; and
 - c. Describe the integration and coordination of the emergency management program with the DOE ISMS.

- P2.26 If a facility is generating classified information or Unclassified Controlled Nuclear Information (UCNI), all emergency management documents (e.g., plans and procedures, supporting program documentation, scenarios, and assessments) are reviewed by a Derivative Classifier (DC) or UCNI reviewing official.
- P2.27 Documented arrangements with leased facilities include:
- a. Description of how each of the lessee's emergency management program elements are integrated into the site-wide program; and
 - b. A requirement that the lessee's hazardous material inventories be reported to the site emergency management program annually; and
 - c. A requirement that the lessee must report significant changes to the facility or hazardous material inventories prior to implementing the changes.

D.3.2 Training and Drills

Performance Goal:

A comprehensive, coordinated, and documented program of training and drills is an integral part of the emergency management program to ensure that preparedness activities for developing and maintaining program-specific emergency response capabilities are accomplished.

Evaluation Criteria:

Training Program

- P3.1 A comprehensive and systematic training program plan for accomplishing emergency management training goals includes: training objectives, target audience, an outline and schedule of training, resources and facilities, organizational responsibilities, and training program administration.
- P3.2 The training program for all primary and alternate personnel assigned to the facility- and site-level ERO includes the following key provisions for position-specific requirements:
- a. Initial training and annual refresher training;
 - b. Refresher training when hazards or emergency plan/implementing procedures change; and
 - c. Demonstrations of proficiency through testing and drills.

- P3.3 The emergency management training program provides a current and structured view of program-specific training requirements:
- a. The training program is reviewed and updated periodically, or as required, based on changes in related emergency plans/procedures;
 - b. A detailed list of courses and drills provided by the emergency management program is developed and maintained; and
 - c. Matrices for the identification and implementation of required training topics versus ERO positions are developed and maintained.
- P3.4 Administrative program records provide the source for identifying qualified instructors, training material approval authority, and qualification signature authority.
- P3.5 The program plan defines minimum program standards for:
- a. Training required for each position (i.e., certain courses must be completed);
 - b. Proficiency (e.g., minimum grades on tests, how prior experience is credited);
 - c. Performance (i.e., acceptable performance during drills, exercises, or actual events); and
 - d. Retraining, and re-validation.
- P3.6 The emergency management training program is effectively integrated and coordinated with related training programs provided by other organizations.
- P3.7 Training courses are performance-based, customized to program-specific ERO positions, contain learning objectives, and have testing as a final validation of satisfactory completion.
- P3.8 Refresher training includes details of program changes and lessons-learned from actual events, exercises, DOE and industry operating experience, and program evaluations.
- P3.9 The training program requirements are in accordance with the National Response Plan (NRP) and National Incident Management System (NIMS).

Training Requirements - Onsite

- P3.10 Initial training and periodic drills are provided to all workers who may be required to take protective actions (e.g., shelter-in-place; assembly,

evacuation). This training is required when they are employed, when their expected protective actions change, or when the emergency plan changes.

- P3.11 Refresher training is provided annually to certified operators and supervisors, and those workers who are likely to witness a hazardous materials release and who are required to notify proper authorities of the release.
- P3.12 Both initial training and annual refresher training is provided for instruction and demonstration of proficiency by all personnel (i.e., primary and alternate) comprising the ERO for their assigned position or function.
- P3.13 Special team training is conducted for functional groups, in particular those with technical and management team assignments (e.g., consequence assessment).
- P3.14 To ensure that ERO decision makers are able to perform their duties promptly and accurately:
- a. Training emphasizes the need for prompt, accurate, and practical judgments involving event categorization and classification, protective actions, and the urgency of notifications of OEs;
 - b. EAL training is conducted periodically to improve the proficiency of ERO decision makers in timely and conservative classification of OEs, including decision-making when information is incomplete or uncertain and for events and conditions that are not covered explicitly by the EALs; and
 - c. ERO personnel authorized for initial classification and protective action decision-making validate their proficiency by participating in performance tests that employ hypothetical scenarios and available facility/site aids, such as EALs.

Training Requirements - Offsite

- P3.15 Offsite emergency response personnel and organizations, including state, local, tribal, or private hospitals, public health, medical, or ambulance services, that are expected to support onsite response efforts, are offered:
- a. Training on facility- and site-specific emergency-related information, conditions, and hazards; and
 - b. The opportunity to participate in training and drills validating procedures for response activities expected to involve integration of onsite and offsite response resources.

Drills

- P3.16 Drills provide supervised, “hands-on” training and/or validation of classroom training for members of the ERO.
- P3.17 Drills provide opportunities to demonstrate responder proficiency in infrequently performed emergency management tasks.
- P3.18 Scheduled drills include scenario driven events that provide interface practice between the ERO and site medical and security organizations.
- P3.19 Drills are developed or modified based upon feedback from actual events, exercise evaluations, and self-assessments, or to validate new or revised procedures and equipment modifications.

Training Documentation and Records

- P3.20 Lesson plans, drill plans, training materials and facilities, instructor and student manuals, and training software are maintained, formally documented, and included in an index or matrix.
- P3.21 Training records are maintained for all personnel assigned ERO positions, primary and alternate, showing in-progress, final, and upcoming re-qualification status.
- P3.22 Drill and exercise participation and performance is documented for each member of the ERO.

D.3.3 Exercises

Performance Goal:

A formal exercise program validates all elements of an emergency management program over a 5-year period. The exercise program validates facility- and site-level emergency management program elements by initiating response to simulated, realistic emergency events/conditions in a manner that, as nearly as possible, replicates an integrated emergency response to an actual event. Planning and preparation use an effective, structured approach that includes documentation of specific objectives, scope, time lines, injects, controller instructions, and evaluation criteria for realistic scenarios. Each exercise is conducted, controlled, evaluated, and critiqued effectively and reliably. Lessons-learned are developed, resulting in corrective actions and improvements.

Evaluation Criteria:

Exercise Program

- P4.1 A *formal* exercise program includes the validation of elements of an emergency management program over a 5-year period.

- a. The exercise program includes a plan (e.g., a matrix) for validating all the elements of each program by incorporating specific objectives in exercises over the 5-year period.
 - b. The exercise program also includes provisions for incorporating objectives in each exercise that are designed to validate revised plans/procedures, implemented corrective actions, and program improvements.
 - c. The exercise program includes provisions for evaluating all exercises and establishes a critique process, which includes gathering and documenting observations of participants.
- P4.2 The exercise program involves testing emergency response capabilities by initiating response to simulated, realistic emergency events/conditions in exercises of varying scope over the 5-year period:
- a. Facility Operations-Based Exercise - A facility or group of facilities (i.e., with common facility-level ERO positions) annually tests the proficiency of personnel in facility-level ERO positions in accomplishing facility-specific emergency response duties and responsibilities.
 - b. Site Operations-Based Exercise - At least annually, the site tests the integrated emergency response capabilities of personnel in facility- and site-level ERO positions, and includes both facility- and site-level evaluation and critique. For multi-facility sites, the basis for the exercise is rotated among facilities or groups of facilities.
 - c. Full Participation Operations-Based Exercise - A site-level exercise is considered *full participation* if offsite organizations participate. Offsite response organizations are invited to participate in a site-level exercise at least once every 3 years.
- P4.3 The schedule of exercises includes:
- a. Periodic participation by appropriate DOE or NNSA radiological response assets, if the facility/site plans to use the assets in response to an emergency.
 - b. Security scenario events to test the interfaces between site security and the facility/site ERO.
- P4.4 Exercises of each of the Department's radiological emergency response assets are conducted at least once every three years. These assets include the Accident Response Group (ARG), Nuclear Emergency Support Team (NEST), Federal Radiological Monitoring and Assessment Center (FRMAC), Aerial Measuring System (AMS), National Atmospheric Release Advisory

Center (NARAC), Radiation Emergency Assistance Center/Training Site (REAC/TS), and Radiological Assistance Program (RAP).

- P4.5 At a minimum, building evacuation exercises are conducted annually consistent with Federal regulations [e.g., (41 CFR 102-74-360)], local ordinances, or NFPA standards, to ensure that employees are able to safely evacuate their work area.
- P4.6 Communications with DOE Headquarters (HQ), the Cognizant Field Element, and offsite agencies are tested at least annually or as often as needed to ensure that communications systems are operational.
- P4.7 Failed objectives of an exercise (i.e., “Deficiencies”), as determined by a DOE or NNSA organization responsible for evaluating the exercise, are re-evaluated during a drill or through a selected functional test within a fixed time period following the exercise.
- P4.8 Corrective actions and lessons-learned identified as a result of facility- and site-level exercise evaluation findings are addressed by the emergency management program.
- a. Completion of corrective actions for facility and site exercises includes a verification and validation process, which verifies that the corrective action has been put in place and validates that the corrective action has been effective in resolving the original finding;
 - b. The verification and validation process is independent of those who performed the corrective action; and
 - c. Corrective actions involving revision of procedures or training of personnel are completed before the next exercise.

Exercise Planning

- CE4.1 Exercise planning is effectively coordinated among onsite and offsite organizations or groups regarding their respective participation and exercise objectives. Any limitations or simulations regarding their participation are identified and documented.
- CE4.2 An exercise is fully documented by an Exercise Plan (EXPLAN) that includes: specific exercise objectives, scope, scenario, participants, simulations, time lines, injects (i.e., messages), technical data, safety and security provisions, controller instructions, and evaluation criteria.
- CE4.3 The EXPLAN is completed in sufficient time before the conduct of the exercise to allow for review and comments by DOE or NNSA line management and the DOE Associate Administrator of Emergency Operations.

- CE4.4 The EXPLAN contains sufficient information for effective conduct, control and evaluation of the exercise.
- a. The roles, responsibilities, and interfaces among exercise participants (i.e., players/responders, controllers, evaluators, and observers) are clearly addressed;
 - b. The provisions for exercise conduct and control are clearly identified; and
 - c. The provisions for exercise evaluation are clearly identified.
- CE4.5 Specific exercise objectives provide the basis for evaluating/validating the performance of response capabilities by each participating organization.
- CE4.6 The scenario is consistent with the set of exercise objectives and explicitly supports an evaluation/validation of each objective.
- CE4.7 The exercise evaluation criteria used are facility/site- or activity-specific, based on existing plans and procedures, and correlate with the exercise objectives.
- CE4.8 The scenario reflects current facility/site- or activity-specific hazards, correlates technically with the EPHA, and is technically accurate in terms of operations and radiological, chemical, biological, and meteorological data.
- CE4.9 The technical data that supports the scenario (e.g., operational, radiological, chemical, biological, medical, meteorological) is technically accurate and clearly and unambiguously presented.
- CE4.10 Simulations and limitations pertaining to participants and exercise activities are clearly identified and documented.
- CE4.11 Injects/messages contain accurate, unambiguous, and non-prompting information and technical data for the players/responders and provide proper direction for the exercise.
- CE4.12 Provisions for safety, security, and public/media interface are clearly identified and documented.

Exercise Preparation

- CE4.13 Coordination among participants includes provisions for exercise initiation, interruption, and termination.
- CE4.14 Controllers and Evaluators are provided generic and exercise-specific training.
- CE4.15 Controllers and Evaluators are provided with training on the scenario package, and safety and security/safeguards provisions.

CE4.16 Preparations, including participant briefings, safety provisions, staging of simulation props, positioning of controllers/evaluators, and establishing of initial conditions, are completed prior to exercise initiation.

CE4.17 Security of the exercise scenario is properly managed; pre-staging of players and/or prior knowledge of scenario material by players are effectively prevented.

Exercise Conduct/Control

CE4.18 Controller organization(s) are adequately staffed and positioned for effective exercise conduct/control.

CE4.19 Controllers conduct/control the exercise in accordance with the EXPLAN.

CE4.20 Controllers permit free play when free play would not interfere with the scenario.

CE4.21 Controllers prevent interference and/or prompting by non-responders.

CE4.22 The simulation of activities is sufficiently realistic to provide confidence that the activity could have been performed during a real emergency.

CE4.23 Players/responders perform their respective functions, initially and throughout the exercise, in a professional manner as if the situation were an actual emergency.

Exercise Evaluation

CE4.24 The evaluator organization is sufficiently staffed to evaluate the performance and key decision-making of the responders in satisfying the exercise objectives.

CE4.25 Evaluators display familiarity with responder organizations, functions, procedures, and anticipated responder decisions and response activities.

CE4.26 Responders/players are evaluated with respect to demonstrated proficiency of their respective responsibilities and functions, communication and coordination with other responders, familiarity and use of applicable procedures and equipment, and overall professional response.

CE4.27 Facilities and equipment are evaluated with respect to adequacy of functions/operability.

CE4.28 Procedures are evaluated with respect to their use by the responders, specifically, their adequacy of content for the tasks performed.

CE4.29 Notifications and communications are evaluated during every exercise.

Exercise Critique

CE4.30 Controllers conduct a post-exercise critique(s) to gather and document observations and solicit feedback from the players/responders.

CE4.31 A formal critique process is conducted by the controller/evaluator organization to determine whether the individual exercise objectives were accomplished based on a synthesis of all the observations and information/data gathered during the conduct of the exercise.

Documentation

CE4.32 An After Action Report (AAR) documents the results of the exercise critique and evaluation.

D.3.4 Readiness Assurance

Performance Goal:

The emergency management Readiness Assurance Program provides a framework and associated mechanisms for assuring that emergency plans, implementing procedures, and resources are adequate by ensuring that they are sufficiently maintained, exercised, and evaluated (including evaluations and assessments) and that appropriate and timely improvements are made in response to needs identified through coordinated and comprehensive emergency planning, resource allocation, training and drills, exercises, and evaluations.

Evaluation Criteria:

General

P5.1 An effective formal and structured Readiness Assurance Program is implemented consisting of evaluation and improvement programs, and documentation of the readiness of the emergency management program based on emergency planning and preparedness activities and the results of the readiness assurance program [e.g., in ERAPs]

Evaluation Program

P5.2 An evaluation program assures that emergency plans, implementing procedures, and resources are adequate and sufficiently maintained, exercised, and evaluated (including evaluations and assessments).

P5.3 Evaluations, including program evaluations and exercise evaluations, are based on a consistent set of performance-based evaluation criteria, issued by the Associate Administrator, Office of Emergency Operations [see DOE G 151.1-3, Chapter 4, Appendix D].

- P5.4 Self-evaluations:
- a. A self-assessment of the emergency management program is conducted annually by the facility/site or activity.
 - b. Findings (i.e., weaknesses or deficiencies) are identified in all program and exercise evaluations.
 - c. Records are maintained of readiness assurance self-evaluations (e.g., program or exercise self-assessments) and any related findings.
- P5.5 External evaluations:
- a. Evaluation schedules are coordinated with all involved organizations to minimize impacts and maximize benefits. Evaluation schedules are forwarded to the Associate Administrator, Office of Emergency Operations to ensure maximum coordination.
 - b. Personnel responsible for developing or maintaining the emergency management program as well as associated program documentation are made available during periodic external evaluations.
 - c. Findings (i.e., weaknesses or deficiencies) are identified in all external program and exercise evaluations.
 - d. Evaluated findings from program and exercise evaluations by organizations external to the facility/site or activity are acknowledged within 30-working days of receipt of the final evaluation report.
- P5.6 Formal evaluation reports are prepared that document evaluation results and specific findings.
- P5.7 Performance indicators (including performance measures and metrics) capture and track objective data regarding the performance of emergency management programs in key functional areas; the results are shared with the Cognizant Field Element and Associate Administrator, Office of Emergency Operations.
- P5.8 No-Notice Exercises (NNXs), conducted at the discretion of the Associate Administrator, Office of Emergency Operations, determine if the ERO accomplishes selected objectives based on applicable plans, procedures, and/or other established requirements. Involvement is limited to providing trusted agents and responding when the exercise is conducted.

Improvement Program

- P5.9 An improvement program provides assurances that appropriate and timely improvements are made in the emergency management program in response to needs identified through coordinated emergency planning, resource

allocation, program assistance activities, evaluations, training, drills, and exercises.

- P5.10 Continuous improvement in the emergency management program results from implementation of corrective actions for findings (e.g., deficiencies, weaknesses) in all types of evaluations, including both self-assessments and external evaluations.
- P5.11 Evaluated findings from program and exercise evaluations by organizations external to the facility/site or activity are acknowledged and include corresponding corrective action plan.
- P5.12 Corrective action plans are developed within 30-working days of receipt of the final evaluation report.
- P5.13 Corrective actions are completed as soon as possible. Corrective actions addressing revision of procedures or training of personnel are completed before the next annual self-assessment of the program.
- P5.14 Completion of corrective actions includes a verification and validation process, independent of those who performed the corrective action, that verifies that the corrective action has been put in place, and validates that the corrective action has been effective in resolving the original finding.
- P5.15 Closure of findings from program and exercise evaluations by organizations external to the facility/site or activity is validated by the evaluating organization.
- P5.16 The improvement program prepares corrective action plans, and establishes and maintains a tracking system to monitor and verify correction of findings from all program and exercise evaluations, or from actual responses.
- P5.17 The improvement program includes a system for incorporating and tracking lessons learned from training, drills, actual responses, and a site-wide lessons learned program.
- P5.18 An established improvement program ensures that relevant lessons learned (i.e., complex-wide; other non-DOE sources) are received at the facility/site or activity, are reviewed for applicability, and incorporated in the emergency management program as appropriate.
- P5.19 An effective and reliable improvement program is ensured through sustained management commitment to continuous improvement of the emergency management program.

Emergency Readiness Assurance Plan (ERAP)

- P5.20 The ERAP highlights program status, including, significant changes in emergency management programs (i.e., planning basis, organizations, exemptions) and comparison of previous ERAP goals, milestones, and objectives to achievements.
- P5.21 The ERAP identifies what the program goals were for the fiscal year that ended coincident with the due date for the report and the degree to which these goals were accomplished. The ERAP also identifies the goals for the next fiscal year.
- P5.22 The ERAP documents evaluation results and the status (i.e., open/unresolved or closed) of associated corrective actions. Evaluation results include facility/site and activity self-assessments and performance measures.
- P5.23 The ERAP contains a sufficient level of accurate information and analysis to provide management at all levels with an adequate tool for gauging emergency management program readiness.
- P5.24 Accurate site (i.e., facilities consolidated into one site document) ERAPs are developed and submitted to the responsible DOE/NNSA Cognizant Field Elements.

D.4 Response Elements

D.4.1 Emergency Response Organization (ERO)

Performance Goal:

An ERO, a structured organization with overall responsibility for initial and ongoing emergency response and mitigation, is established and maintained for each facility/site and activity. The ERO establishes effective control at the scene of an event/incident and integrates ERO activities with those of local agencies and organizations that provide onsite response services. An adequate number of experienced and trained personnel, including designated alternates, are available on demand for timely and effective performance of ERO functions.

Evaluation Criteria [RESPONSE Functions]:

ERO Organizational Structure

- P/E6.1 The organizational configuration of the ERO is based on actual or potential emergency conditions.
- P/E6.2 Management structure of the emergency response facility provides for the collecting and disseminating accurate data, setting priorities, assigning work

to functional groups, and keeping key emergency response staff abreast of emergency response status.

- P/E6.3 An “Emergency Director (ED)” or equivalently titled individual manages and controls all aspects of the facility/site or activity overall response, and has the authority to use necessary resources to mitigate the emergency.
- P/E6.4 The ED has the authority and responsibility to perform the required functions, including initial activation of onsite response assets, notification of offsite authorities, and requests for offsite assistance, in accordance with the National Response Plan (NRP) and the National Incident Management System (NIMS).
- P/E6.5 The division of authority and responsibility between the Incident Commander (IC) and the ED position is clearly established and maintained.
- P/E6.6 Control of operations, monitoring, and repair teams is clearly vested in a single ERO position or clearly defined between multiple ERO positions.

ERO Activation

- P/E6.7 The ERO activation is based on actual or potential emergency conditions.
- P/E6.8 The on-shift operations staff performs initial ERO response functions.
- P/E6.9 The ERO is functionally staffed and activated in a timely manner; key emergency response facilities are operational within an hour after declaration of an OE.
- P/E6.10 Staffing of ERO positions following the declaration of an OE is orderly, controlled, and verifiable:
 - a. Personnel assigned to ERO positions gain access to their response stations without impediment.
 - b. Non-ERO personnel are excluded from emergency response work areas.
 - c. Individuals in key response positions/functions are readily identifiable by other ERO staff (e.g., through use of status board(s) or badging).
- P/E6.11 Procedures and/or checklists, which describe the major activation and initial response activities of key members of the ERO, are used.
- P/E6.12 The order of succession of management personnel responsible for managing the emergency in the absence of the primary designated ED is clearly designated/ implemented.
- P/E6.13 Extended operations (i.e., shift arrangements to cover 24-hour operations) are anticipated and planned.

ERO Operations

- P/E6.14 The ED, in the lead role responsible for emergency response, adequately and effectively performs assigned functions utilizing sufficient and practical knowledge of the effected facility/site or activity and its operations, the emergency response team and its mission, and the available tools and resources necessary to affect an appropriate response and mitigate the emergency.
- P/E6.15 Transfer of a command and control function to another emergency facility, within an emergency facility, or to a command external to the ERO or ICS (e.g., another Federal agency, such as DOJ/FBI) is completed in an orderly and formal manner, and ERO personnel are informed of the transfer.
- P/E6.16 The fully staffed ERO establishes effective internal and external interfaces with other agencies and organizations; external interfaces may include: local, state, tribal, and federal agencies, and non-governmental groups such as concerned citizens and the media.
- P/E6.17 An individual in the ERO is assigned liaison responsibilities for coordinating with offsite agencies to ensure that effective communications are initiated and maintained during an emergency.
- P/E6.18 Members of the ERO:
- a. Perform in their roles, functions, and interfaces and in their use of emergency equipment, facilities, and resources in a timely, effective and efficient manner;
 - b. Clearly acknowledge and understand authorities and responsibilities in functional areas; and
 - c. Identify and access available response resources (e.g., personnel, equipment, consumables, and replacement parts), and, as appropriate, take account of resource limitations and specific capabilities.
- P/E6.19 Based on current knowledge of the situation, the responsible ERO operations and technical support staff determine and implement a reasonable, well-planned course of action within their sphere of responsibility.
- P/E6.20 When priority actions are identified, tasking is clearly made to emergency response staff, and actions are followed through to completion.
- P/E6.21 Specialty groups (e.g., consequence assessment, maintenance, operations, technical staff) supporting the emergency response staff provide timely information to the decision-making process.

- P/E6.22 Adequate data are obtained and analyzed to support the operations staff in assessing and mitigating the emergency events.
- P/E6.23 Information is accurately and efficiently transmitted in an orderly and documented manner throughout the chain of command and between/within emergency facilities.
- P/E6.24 The use of acronyms, code words, convention and/or technical terminology causes no misunderstandings related to the response and associated data.
- P/E6.25 Periodic briefings are provided on the status of the emergency and current significant response priorities and activities.
- P/E6.26 Communications are maintained with and information is provided regularly to the DOE Headquarters Emergency Management Team (EMT).
- P/E6.27 The ERO management effectively coordinates State and DOE site requests for use of DOE/NNSA assets.
- P/E6.28 An individual is assigned liaison responsibilities with personnel representing DOE/NNSA assets (e.g., NARAC, FRMAC, AMS, RAP, REAC/TS, ARG, and/or NEST) involved in the response to coordinate logistics, ensure that effective communications are initiated and maintained, and ensure that data is exchanged using consistent units of measure.
- P/E6.29 ERO personnel are provided with adequate briefings concerning safety, operations, communications, and hazards before being deployed.
- P/E6.30 ERO teams are debriefed upon return from assigned missions and their accomplishments, failures, exposures, and status information are recorded and made available to other teams and emergency facilities.
- P/E6.31 The responsible individual authorizes emergency response personnel to receive exposures in excess of site administrative limits (or other Federal criteria) for carrying out lifesaving or other emergency activities.
- P/E6.32 An individual trained to recognize, categorize, and classify events and to conduct appropriate notifications is available 24-hours a day, 7-days a week. This individual's authority is unambiguous and clearly communicated throughout the ERO.

Evaluation Criteria [Special RESPONSE Functions/Positions]:

Incident Command System (ICS)

- P/E6.33.1 An IC is in charge at the event scene:

- a. Control and coordination at the event/incident scene is consistent with the NRP and the NIMS/Incident Command System (ICS), which integrates local agencies and organizations that provide onsite response services.
 - b. The ICS is identified in the emergency plan and memoranda of understanding/agreement with local response organizations.
- P/E6.33.2 The ICS is organized in the five major functional areas of NIMS/ICS: Command, Operations, Planning, Logistics, and Finances and Administration.
- P/E6.33.3 The incident is assessed and priorities are established with life saving, safety, and incident stabilization receiving top priority.
- P/E6.33.4 Incident command strategic goals and tactical objectives are clear and a flexible action plan is implemented.
- P/E6.33.5 Incident command evolves from providing oral direction to the development of a written Incident Action Plan (IAP).
- P/E6.33.6 The incident command staff continually assesses the situation, develops a mitigation strategy, and requests additional assets as needed.
- P/E6.33.7 Incident command coordinates internal and external response assets in an effective manner.
- P/E6.33.8 An ICS command post is strategically located in a safe area, where command and control may take place safely and effectively.
- P/E6.33.9 Command post and staging area(s) habitability is periodically assessed and moved, as necessary, for safety purposes.
- P/E6.33.10 Incident command staff ensures that response personnel take necessary precautions for personal safety and contamination control, as follows:
- a. Incident command staff establishes a staging area where arriving asset personnel are briefed; communications are checked; special equipment is issued; and the assets are deployed upon request.
 - b. Asset personnel being released are debriefed; personnel are accounted for; personnel and equipment are surveyed for contamination; decontaminated as necessary; and issued equipment is returned.

Hazardous Material Survey, Sampling, and Sample Analysis Teams

- P/E6.34.1 Teams implement survey and sampling procedures in a timely manner:

- a. Field teams are provided with adequate monitoring equipment and Personnel Protective Equipment (PPE) to accomplish field monitoring and plume tracking within and beyond the EPZ; and
 - b. Teams correctly use protective equipment, such as protective clothing and respirators, filter masks, and dosimetry.
- P/E6.34.2 Equipment required for emergency response is adequate, accessible, functional, and calibrated.
- P/E6.34.3 Teams make effective use of maps or general arrangement drawings showing pre-determined and potential monitoring points.
- P/E6.34.4 Teams are briefed on facility and meteorological conditions, and exposure control procedures before deployment and when changes occur.
- P/E6.34.5 Teams maintain effective communications to transmit accurate and timely readings and results to their team coordinator.
- P/E6.34.6 Field teams are well directed and effectively controlled by emergency response management, who:
- a. Provide directions to survey specific areas;
 - b. Provide directions to minimize hazardous material exposure by exiting high airborne and whole body dose areas (i.e., for radiological materials), or high concentration areas (i.e., for toxic non-radiological materials), when not actively engaged in sample and survey activities; and
 - c. Set exposure limits for survey and tracking teams, and collect and record survey results.
- P/E6.34.7 Teams utilize proper survey equipment and log results accurately.
- P/E6.34.8 Teams collect samples, bag and mark them, and log results accurately and efficiently.
- P/E6.34.9 Samples are received, properly packaged, and labeled with information such as sample time and date, sample location, volumetric data, sample media, and sample or survey collection person's name.
- P/E6.34.10 Analysis procedures and equipment are used to support processing of samples received, either properly analyzing the samples in the field or transporting them to a laboratory.
- P/E6.34.11 Analysis results are promptly and accurately communicated to other emergency response organizations.

Security Staff

- P/E6.35.1 Security procedures of protective forces for carrying out their responsibilities during response to OEs are promptly, safely, efficiently, and effectively implemented.
- P/E6.35.2 An ICS, in accordance with NIMS/ICS requirements, is implemented for security emergencies.
- P/E6.35.3 Response of protective force personnel and equipment is characterized by effective command and control.
- P/E6.35.4 Access and egress control is quickly and properly maintained for the facility/site or activity, facility/site areas, impacted areas (i.e., safe perimeters), and emergency response facilities.
- P/E6.35.5 Security practices facilitate timely movement and access of facility/site operating and response personnel (including offsite personnel) to required areas during the emergency situations.
- P/E6.35.6 Under emergency conditions, material accountability and protection for Special Nuclear Material (SNM) and other critical DOE assets are handled in a timely and effective manner.
- P/E6.35.7 Common protocol for local law enforcement backup of the onsite security force is used (e.g., use of deadly force, weapons employment, tactics, code words, radio frequencies, etc.).
- P/E6.35.8 A mutual understanding of authorities and responsibilities, response plans, utilization of command and control facilities, and terminology enables site security to effectively coordinate and correlate response activities with other components of the ERO.

Fire and Rescue

- P/E6.36.1 Fire/rescue personnel and equipment are assembled and deployed to the scene of the emergency in a safe and timely manner.
- P/E6.36.2 Fire/rescue personnel take necessary precautions for contamination, exposure, heat, and personal safety.
- P/E6.36.3 Search and rescue operations are carried out in an efficient manner, coordinating their efforts with medical, industrial hygiene, and health physics personnel.
- P/E6.36.4 Injured personnel are properly extricated, immobilized, and moved during search and rescue operations.

P/E6.36.5 When responding onsite, both onsite and offsite fire personnel are outfitted with the appropriate specialized equipment and supplies specific to the onsite hazards.

Repair and Maintenance

P/E6.37.1 Facility and field repair and maintenance activities are carried out in a timely and efficient manner:

P/E6.37.2 Proper tools are available for repair and maintenance activities and the procurement of replacement parts is expedited.

P/E6.37.3 Emergency work order procedures are used and emergency tagging (e.g., lockout/tagout or clearance) is implemented.

P/E6.37.4 Repair and maintenance activities include personnel protection and monitoring as well as coordination with support groups, such as health physics and chemistry personnel.

Evaluation Criteria [PROGRAMMATIC Functions]:

ERO Staffing

P6.38 ALL personnel who may be needed to perform duties, beyond those specified by 29 CFR 1910.120 for the first responder awareness level, during a response to any of a broad range of emergencies defined in the Hazards Survey or EPHA are members of the ERO.

P6.39 Fully trained personnel are assigned to facility- and site-level ERO positions to ensure adequate staffing for emergency response.

P6.40 All personnel assigned to facility- and site-level ERO positions demonstrate their proficiency in their assigned positions through periodic participation in an exercise, an evaluated drill, or an actual response. All primary and alternate personnel accomplish this participation on a rotating basis.

P6.41 An adequate number of experienced and trained personnel for initial and ongoing response, including designated alternates, are assigned to each functional area.

ERO Maintenance

P6.42 To ensure that personnel are available on demand for timely and effective performance of ERO functions, the ongoing, standby staffing of ERO emergency facility positions and response teams is effectively accomplished by:

- a. Using a technique, such as duty-cycle or static roster, to ensure that qualified personnel are available on-demand and properly assigned.
- b. Ensuring that sufficient trained personnel for initial and ongoing response, including designated alternates, are candidates for call-up in each functional area.
- c. Periodically reviewing ERO rosters for accuracy (e.g., current qualifications, correct phone number, correct response time etc.).
- d. Periodically reviewing and updating ERO personnel qualifications.

P6.43 Communication systems used to activate both on-shift and off-shift emergency response personnel are periodically tested to ensure their adequacy and reliability.

D.4.2 Offsite Response Interfaces

Performance Goal:

Effective interfaces are established and maintained to ensure that emergency response activities are integrated and coordinated with the Federal, Tribal, State, and local agencies and organizations responsible for emergency response and protection of the workers, public, and environment, in accordance with the NRP and NIMS.

Evaluation Criteria [RESPONSE Functions]:

Activation

- P/E7.1 Interfaces with Federal, Tribal, State, and/or local authorities responsible for protection of the public and the environment are identified and established.
- P/E7.2 Support is requested, as required, from Federal, Tribal, state, and/or local response agencies/organizations responsible for augmenting site resources in response to an onsite emergency event.
- P/E7.3 Offsite authorities are informed of the availability of assistance from DOE or NNSA national assets (i.e., RAP, FRMAC, NARAC, AMS, and REAC/TS) and subsequent requests for support activate the applicable assets.

Communication and Information Exchange

- P/E7.4 Methods of communication (e.g., telephone circuits and/or radio channels) and communication protocols with the offsite agencies/organizations are in place, identified, and operable.
- P/E7.5 Communication capabilities allow effective communication with offsite officials, the Cognizant Field Element, and the DOE HQ EMT.

- P/E7.6 Offsite officials are briefed upon activation of their respective facilities.
- P/E7.7 Offsite agencies/organizations, responsible for emergency response and for the protection of workers, the public, and the environment, are provided initial and ongoing information sufficient to perform their respective functions.
- P/E7.8 Timely, clear, accurate, and effective information exchange occurs between the ERO and offsite personnel.
- P/E7.9 Mutual understanding of acronyms, code words, conventions, and/or technical terminology (e.g., units) provides effective information exchange.
- P/E7.10 Incoming offsite agency inquiries/concerns are directed to the appropriate personnel for resolution.

Coordination and Integration

- P/E7.11 A mutual understanding of capabilities, especially the command and control system, supports an integrated and effective response.
- P/E7.12 An effective working relationship exists between the offsite officials and their ERO counterparts.
- P/E7.13 Coordination and integration with offsite response agencies and organizations follow established, pre-arranged and documented plans and protocols, including, responsibilities and authorities, coordination of response, notifications, facility activations, communications, Emergency Operations Center (EOC) interfaces, public information activities, and logistic protocols (e.g., working space and site access)
- P/E7.14 Provisions are in place and implemented with State, Tribal, and local agencies and organizations for coordinating the release of information about the emergency to the public.
- P/E7.15 There is a mutual understanding of response measures to be implemented by the facility/site in anticipation of the involvement of local and State public health agencies or agricultural authorities following an actual or potential release of a biological hazardous material.

Evaluation Criteria [PROGRAMMATIC Functions]:

Maintaining Interfaces

- P7.16 An individual (s) with the appropriate authority, knowledge, and training is responsible for establishing and maintaining ongoing and effective interfaces with offsite political, technical, security (e.g., local law enforcement), public health, and emergency services officials.

- P7.17 Agreements to provide mutual assistance to or to receive assistance from offsite organizations (e.g., hospitals, fire departments) are documented in a formal memorandum of agreement or memorandum of understanding, which are accessible in the emergency plan and maintained current through periodic reviews.
- P7.18 Offsite response agencies and organizations are provided with specific information and/or offered training on the nature and characteristics of the biological agents and/or toxins present at the DOE/NNSA Biosafety facility.
- P7.19 Effective coordination with offsite response agencies and organizations is accomplished and maintained through routinely scheduled meetings.
- P7.20 Through formal agreements, DOE supports offsite agencies under the “good neighbor” policy, in areas of emergency assistance including: fire, medical, and hazardous material releases (including, field monitoring resources)
- P7.21 Routine coordination and interfaces through training, drills, and “good neighbor” support ensure that offsite services (e.g., fire and medical, law enforcement), as indicated in the documented agreements, will be integrated with onsite resources.
- P7.22 Planned response functions to be provided by offsite organizations are periodically tested and verified.
- P7.23 Offsite response organizations are invited to participate in a site-level exercise at least every 3 years.
- P7.24 Organizations which may be needed in a supporting role and/or needed for long-term support have been identified and pre-designated offsite points-of-contact, including organization, names, and telephone numbers are documented, maintained, and available to the response organization.

D.4.3 Emergency Facilities and Equipment

Performance Goal:

Facilities and equipment adequate to support emergency response are available, operable, and maintained. At a minimum, facilities/sites include an adequate and viable command center. Equipment includes, but is not limited to, PPE, detectors, and decontamination equipment.

Evaluation Criteria [RESPONSE Functions]:

General

- P/E8.1 Facilities and equipment adequate to support emergency response are available, operable and maintained.

Facilities

- P/E8.2 A facility is available for use as a command center by the ED, the EMT, and other members of the ERO during an emergency response.
- P/E8.3 Characteristics of the dedicated command center, and other auxiliary facilities, are adequate to reliably support the designated functions and assignments.
- P/E8.4 As required, facilities are available to accommodate classified discussions at the appropriate clearance levels.
- P/E8.5 Provisions are established for use of an alternative location if the primary command center is not available.
- P/E8.6 Facility systems and installed equipment (e.g., HVAC, sanitation, lighting, radiation monitors, computer systems, communications, and visual displays) are adequate to support facility functions and level of staffing.
- P/E8.7 Emergency response facilities use backup or alternate power supplies in the event of loss of power.
- P/E8.8 As necessary, conversion of facilities to response facilities for the emergency is accomplished in a timely and efficient manner.
- P/E8.9 Command center access control is adequate and results in the efficient and timely identification of assigned staff.

Equipment

- P/E8.10 The capability to notify employees of an emergency to facilitate the safe evacuation of employees from the work place, immediate work area, or both is available.
- P/E8.11 Provisions are established to ensure operational compatibility between facility response capabilities and DOE or NNSA assets.
- P/E8.12 Adequate PPE, and other emergency equipment and supplies are readily available and operable to meet the needs determined by the results of the EPHA.
- P/E8.13 Actual function(s) and operating characteristics of specific equipment adequately support the intended function(s) during emergency response.
- P/E8.14 Secure communication equipment is available to support classified discussions and transmittal of classified documents/reports.
- P/E8.15 Equipment needed during the emergency response functioned as expected and intended (or was repaired or obtained in a timely manner), including: current

reference materials (e.g., maps, facility drawings); decisional aids (including computers); area and process monitors; public address system; PPE; portable monitoring instruments and personnel monitoring devices; siren and alarm systems; decontamination equipment; communication equipment.

Evaluation Criteria – [PROGRAMMATIC Functions]:

Facilities

P8.14 Designated response facilities, especially multi-use facilities, are adequately maintained to ensure timely activation and availability to support an emergency response.

Equipment

P8.15 Inventories of all emergency equipment and supplies are maintained with the equipment location identified.

P8.16 Periodic inspections, operational checks, calibration, preventive maintenance and testing of equipment and supplies are carried out as required in accordance with manufacturer's instructions or industry standards.

P8.17 Communication systems with DOE HQ, Cognizant Field Elements, and offsite organizations are periodically tested.

P8.18 Communication systems used to activate both on-shift and off-shift emergency response personnel are tested and maintained regularly.

D.4.4 Categorization and Classification

Performance Goal:

Major unplanned or abnormal events or conditions that: involve or affect DOE/NNSA facilities/site and activities by causing or having the potential to cause serious health and safety or environmental impacts; require resources from outside the immediate/affected area or local event scene to supplement the initial response; and, require time-urgent notifications to initiate response activities at locations beyond the event scene, are recognized promptly, categorized, and declared as OEs.

In general, to be considered an OE, an event or condition involving the uncontrolled release of a hazardous material will: immediately threaten or endanger personnel who are in close proximity of the event; have the potential for dispersal beyond the immediate vicinity of the release in quantities that threaten the health and safety of onsite personnel or the public in collocated facilities, activities, and/or offsite; and have a potential rate of dispersal sufficient to require a time-urgent response to implement protective actions for workers and the public. In addition to being categorized as OEs, events involving the actual or potential airborne release of (or loss of control over) hazardous materials from an onsite facility or activity also require prompt and accurate classification as an Alert,

Site Area Emergency, or General Emergency, based on health effects parameters measured or estimated at specific receptor locations (e.g., facility and site boundaries) and compared with PACs. Predetermined conservative onsite protective actions and offsite protective action recommendations are associated with the classification of these OEs.

Evaluation Criteria [RESPONSE Functions]:

Process

- P/E9.1 Authority and responsibility for categorizing an event/condition, and if necessary, determining the emergency classification, is clearly defined, recognized, and understood by ERO personnel.
- P/E9.2 The designated (authorized) individual with the responsibility for categorization and classification makes the determination(s).
- P/E9.3 Recognition/categorization/classification process of OEs is effectively integrated with existing operations, management, emergency response, reporting activities, and the security classification scheme.

Categorization

- P/E9.4 Categorization of abnormal events/conditions as OEs is accomplished accurately using facility/site- or activity-specific criteria.
- P/E9.5 An OE event is categorized as promptly as possible, but no later than 15-minutes after event recognition/identification/discovery.
- P/E9.6 The set of facility/site- or activity-specific criteria is readily accessible to the responsible decision maker.
- P/E9.7 Criteria for categorizing OEs are clear, straightforward, usable, and unambiguous to the decision maker, and stated in terms of readily available indications or observable conditions.
- P/E9.8 If the event or condition is categorized as an OE involving an airborne release of (or loss of control over) hazardous materials (i.e., from a facility/site), the decision maker recognizes the requirement to promptly classify the event. This does not apply to biological hazardous materials.
- P/E9.9 A tool (i.e., an EAL-like tool) for recognizing and categorizing biological OEs, based on recognition factors identified in the EPHA, is part of the DOE/NNSA emergency management program for Biosafety facilities. Default initial protective actions are associated with each biological OE.
- P/E9.10 An abnormal event/condition, categorized as an OE, is only downgraded (e.g., to Significance Level 1-4) if the original categorization was incorrect. A

properly categorized OE remains in effect until the emergency response is terminated.

Classification

- P/E9.11 Classification of an OE involving the actual or potential airborne release of (or loss of control over) hazardous material is accomplished promptly and accurately using a current set of a facility/site-specific EALs. [Classification does not apply to biological hazardous materials.]
- P/E9.12 Facility/site-specific EALs are applicable to the spectrum of potential OEs identified by the EPHA.
- P/E9.13 Appropriate facility/site-specific EALs are readily accessible to the responsible decision maker.
- P/E9.14 Classification of an OE involving the actual or potential airborne release of hazardous material as Alert, Site Area Emergency, or General Emergency is based on the distance at which estimated consequences exceed the applicable health effect threshold [i.e., PAC for the specific hazardous material released].
- P/E9.15 EALs for classifying OEs are clear, straight forward, usable, and unambiguous to the decision maker.
- P/E9.16 EALs for classifying OEs provide for early recognition, are reliable, redundant, and internally consistent, and are comprehensive and anticipatory of potential/future consequences.
- a. EALs are stated in terms of readily available indications or observable conditions.
 - b. Facility/site-specific EALs are developed and approved for the spectrum of OEs resulting in the actual or potential airborne release of (or loss of control over) hazardous material OEs, as analyzed in the EPHA.
 - c. Facility/site EALs provide for classifying events on the basis of measured or predicted hazardous material consequences at specific receptor locations (i.e., facility and site boundaries).
- P/E9.17 If a suspected release of (or loss of control over) hazardous material fails to meet or exceed an EAL, then a common sense, conservative assessment of the indications or observable conditions leads to an initial default estimate of the classification of the emergency event/condition using the discretionary EAL (i.e., a discretionary EAL is included in the EAL set to compensate for possible incompleteness and to ensure that a decision can be made rapidly based on the current understanding of the situation).

- P/E9.18 Associated with a specific OE event EAL, the decision maker obtains default (i.e., pre-determined), conservative Protective Actions (PAs), for immediate implementation onsite, and Protective Action Recommendations (PARs), for immediate recommendation offsite.
- P/E9.19 The current classification is modified (i.e., upgraded) based on continuous monitoring for event degradation or a reassessment that indicates that the event is more severe than originally perceived.
- a. An OE is reclassified at a lower classification if the original classification decision was in error (e.g., the decision maker used the wrong EAL or received incorrect information).
 - b. A properly classified OE remains in effect until the emergency response is terminated.
- P/E9.20 Site-wide, non-facility-specific EALs are used to classify events such as: terrorist threats, major natural phenomena, external events that can affect site operations, etc.

Evaluation Criteria [PROGRAMMATIC Functions]:

- P9.21 OE categorization criteria and EALs are reviewed and tested regularly against a range of initiating conditions and emergency event/condition scenarios to validate the indicated emergency categorization/classification.

D.4.5 Notifications and Communications

Performance Goal:

Initial emergency notifications are made promptly, accurately and effectively to workers and emergency response personnel/organizations, appropriate DOE/NNSA elements, and other Federal, Tribal, State, and local organizations and authorities. Accurate and timely follow-up notifications are made when conditions change, when the emergency classification (as an Alert, Site Area Emergency, General Emergency) is upgraded, or when the emergency is terminated. Continuous, effective, and accurate communication among response components and/or organizations is reliably maintained throughout an OE.

Evaluation Criteria:

Notifications

- P/E10.1 For OEs, prompt initial emergency notifications are accurately and efficiently made to workers and emergency response personnel/organizations, including DOE or NNSA Cognizant Field Element EOCs and the HQ Operations Center; other Federal, Tribal, State, and local response organizations; as well as all other appropriate organizations and authorities.

- P/E10.2 Tribal, State, and local officials, the Cognizant Field Element EOC, and the HQ Operations Center are notified within 15 minutes of classification of an OE as an Alert, Site Area Emergency, or General Emergency; all other organizations are notified within 30 minutes.
- P/E10.3 The Cognizant Field Element EOC and the Headquarters Operations Center are notified within 30 minutes of the declaration of an OE that does not require classification; local, State, and Tribal, and all other organizations are notified within 30 minutes or as established in mutual agreements.
- P/E10.4 Points of contact for emergency notifications are accurate and readily available to response personnel.
- P/E10.5 Emergency notifications to the HQ Operations Center consist of a phone call providing as much information as is known at the time. The same information is also provided by e-mail or a fax either immediately prior to or following the phone call. Information for initial notification includes as much as possible of the following:
- (a) An OE has been declared and, if appropriate, the classification of the emergency;
 - (b) Description of the emergency;
 - (c) Date and time the emergency was discovered;
 - (d) Damage and casualties;
 - (e) Whether the emergency has stopped other facility/site operations or program activities;
 - (f) Protective actions taken and/or recommended;
 - (g) Notifications made;
 - (h) Weather conditions at the scene of the emergency;
 - (i) Level of any media interest at the scene of the emergency or at the facility/site; and
 - (j) Contact information for the DOE or NNSA on-scene point of contact.
- P/E10.6 A rapid notification and recall system is used to make initial and follow-up notifications to primary and alternate response staff. The system provides for authentication and feedback indicating unsuccessful contact.
- P/E10.7 Follow-up notifications use pre-arranged and standardized content and format that supports the inclusion of critical information concerning: the nature of the

event, description and status; key times; classification and release status (as required); meteorology; protective actions; affected facility; and, notification authority.

- P/E10.8 Follow-up notifications are made when conditions change or when the emergency classification is upgraded or the emergency is terminated.
- P/E10.9 The ED or designee personally approves release of notification information.
- P/E10.10 Emergency status reports (also referred to as situation reports or SITREPs) are forwarded to the next-higher EMT on a continuing basis throughout the OE.

Communications

- P/E10.11 A formally established communication chain for reporting and notification within the facility, site-wide, and to offsite organizations is properly followed.
- P/E10.12 Installed public address and siren systems adequately accomplish the notifications of workers and onsite or neighboring public.
 - a. Installed building and area alarms or public address systems alert facility personnel to emergency conditions.
 - b. Systems are in place for notification of onsite workers and public present onsite but outside the immediate vicinity of the affected facility.
 - c. Where agreements with offsite agencies dictate, systems alert the public outside the site boundary.
- P/E10.13 Communications systems are in place to support management and tracking of evacuation of facility personnel, personnel accountability and assembly.
- P/E10.14 Installed voice communications systems adequately accomplish notification and information exchange processes.
 - a. Reliable equipment exists for communications with emergency organizations and response personnel.
 - b. Dedicated primary and backup voice communications links are provided between key emergency response facilities and sufficient non-dedicated voice communication links are provided to access offsite organizations.
 - c. Mobile and commercial phone lines are available.
- P/E10.15 Continuous, effective, and accurate communications among response components and/or organizations (e.g., event scene responders, emergency managers, response facilities, and workers who have taken protective actions) is reliably established and maintained throughout an OE.

Documentation/Reports

- P/E10.16 Notifications and key communications are properly documented and displayed in emergency response facilities.
- P/E10.17 A formal system is in place to record, sequence, validate, and track the flow and chronology of emergency information.
- P/E10.18 Logs are maintained and other record-keeping methods utilized to support post-event analysis, report production, and a legally defensible chronology of notification and communications activities.
- P/E10.19 All reports and releases are reviewed for classified or Unclassified Controlled Nuclear Information (UCNI) prior to being provided to personnel without security clearances, entered into unclassified databases, or transmitted using non-secure communications equipment.
- P/E10.20 Following termination of the emergency response, and in conjunction with the Final Occurrence Report, each activated EMT develops and submits a final report on the emergency response to the ED for submission to the Associate Administrator, Office of Emergency Operations.

D.4.6 Consequence Assessment

Performance Goal:

Estimates of onsite and offsite consequences of actual or potential releases of hazardous materials are computed and assessed correctly and in a timely manner throughout the emergency. Consequence assessments are: integrated with event classification and protective action decision-making; incorporated with facility and field indications and measurements; and coordinated with offsite agencies.

Evaluation Criteria [RESPONSE Functions]:

Process

- P/E11.1 A Timely Initial Assessment (TIA) of the actual or potential consequences of an emergency is performed effectively and efficiently, shortly after initial classification, using any available real-time event and meteorological data to provide an event-specific estimate of consequences.
- P/E11.2 Timely in-depth assessments of event consequences are made continuously throughout an emergency.
 - a. Consequence estimates performed by hand and/or from computer calculations are accomplished in a timely and efficient manner throughout the emergency to adequately assess the actual or potential onsite and offsite consequences.

- b. Assessments are updated when there are actual and projected changes in facility status, release conditions, or meteorology, or when there are data from field monitoring teams.
 - c. Different models, assumptions, and input data are used, as available, to add to the understanding of the event and its consequences.
 - d. Indicators (e.g., system pressures, flow rates, radiation levels, release rates, etc.), necessary to continually assess the consequences of the emergency events/conditions, are identified and monitored.
- P/E11.3 Consequence assessment process is integrated with processes for categorizing an event as an emergency, determining the appropriate emergency class, protective action decision-making, and locating and recovering materials.
- P/E11.4 Provisions are made for requesting support from the DOE radiological emergency response assets (e.g., AMS or NARAC) to assist in accident and consequence assessments as well as to estimate the integrated impact of a hazardous materials release to onsite and offsite populations.
- P/E11.5 Facilities have access to NARAC or have procedures in place to activate or request NARAC capabilities:
- a. If a facility has the potential for an OE classified as a General Emergency, connectivity to NARAC capabilities is established and procedures are in place to use the NARAC capability effectively as part of near real-time consequence assessment activities for the mode (primary, backup, corroborating) selected by the facility.
 - b. If a facility has the potential for an OE classified as a Site Area Emergency, procedures are in place to activate or request NARAC capabilities and to use those capabilities as part of near real-time consequence assessment activities.
- P/E11.6 For facilities with access to NARAC, or that have procedures in place to activate or request NARAC capabilities, meteorological data and information on source terms for actual or potential releases of hazardous materials to the atmosphere are available or can be made available to NARAC in a timely manner to facilitate near real-time computations.
- P/E11.7 Natural phenomena (e.g., tornados, floods, severe wind, ice, or snow), which may result in or exacerbate an emergency condition at the facility, operation, and/or activity, are monitored.
- P/E11.8 A formal document control system is implemented during an emergency to record, sequence, validate, and track the flow and chronology of information.

- P/E11.9 A primary function of the consequence assessment process for releases of biological agents, either *observed* or *unobserved*, involves the confirmation that a release to the environment from a biosafety facility has occurred.

Consequence Calculations

- P/E11.10 Tools used in consequence assessment, such as system hardware and software for meteorological monitoring and dose modeling, etc., are available, reliable, calibrated, and consistent with DOE and industry standards.
- P/E11.11 The type of hazard and source term for the release of a hazardous material is successfully determined either with available and reliable facility system parameters and effluent monitors or with data that is not normally monitored and measured.
- a. Data for source term estimates is available from reliable sources (e.g., stack or process flow rates, concentrations, tank volumes, and containment or process building leak rates).
 - b. Methodology for determining the type of hazard and source term is compatible with instrumentation/monitor values (e.g., engineering units, range, and conversion factors).
 - c. Instruments used for detection of chemical releases to the atmosphere have sufficient range to accurately determine the concentration of the released chemical(s) in air versus the chemical Protective Action Criterion (PAC).
 - d. Indicators that are not continually monitored (e.g., chemical analyses of fluids, contamination levels, etc.) are sampled to identify the particular indicators to be continually monitored to assess the consequences of potential events, in addition to occurring events, by identifying trends, relationships, etc., that would indicate degrading conditions.
- P/E11.12 Adequate meteorological information is obtained for use in transport and dispersion calculations to project the consequences of the hazardous material release to the environment, onsite and offsite.
- P/E11.13 Onsite and offsite receptors of interest are identified quickly and are readily available to emergency managers (e.g., receptor locations at the facility and site boundaries, to or beyond the EPZ boundary, and populations with special needs).
- P/E11.14 Consequence estimates for actual or potential releases of hazardous materials:
- a. Are made in a timely manner, efficiently, and accurately (i.e., consistent with the accuracy of the input data);

- b. Account for releases from ground level and elevated release points, or monitored and unmonitored pathways; make use of post-accident analysis results and field monitoring team data, as appropriate;
- c. Include calculations of radioactive dose or toxic chemical exposure for the external, inhalation, and ingestion pathways, as appropriate;
- d. Are provided for receptor locations at the facility and site boundaries, to or beyond the EPZ boundary, and for populations with special needs; and
- e. Use the appropriate facility-specific PAC, which is identified and readily available to consequence assessment teams for estimating health effects at a specified distance from the event.

Field Measurements

- P/E11.15 Field teams receive initial, conservative estimates of projected consequences in a timely manner prior to being dispatched for sampling, monitoring, and plume tracking activities.
- P/E11.16 Field sampling and monitoring activities are used to verify, update, and refine the source term and projected consequences through coordination with those responsible for consequence estimates.
- P/E11.17 Field teams (i.e., radiological and non-radiological field teams) successfully accomplish field monitoring and plume tracking within and beyond the EPZ, and, similarly, verify the absence of consequences in specific areas.
- P/E11.18 As available, data from environmental monitoring programs is used to support consequence assessment, including data from installed air monitors, area radiation monitors, and in-plant surveys.

Coordination

- P/E11.19 Effective coordination is established with Federal, Tribal, State, and local organizations to estimate the impact of the release on the public and the environment, locate and track hazardous materials released, and locate and recover materials, especially those with national security implications.
- P/E11.20 Field monitoring and data collection by facility and site teams, State and local teams, and Federal teams is coordinated to facilitate exchanges and correlation of information.
- P/E11.21 Assessments and analyses are clearly communicated to offsite emergency management decision makers.

- a. Engineering units used in facility/site consequence assessment are understood and compatible with the units used by offsite emergency response authorities.
- b. Differences in modeling methods are well understood by onsite and offsite emergency response personnel.

Evaluation Criteria [PROGRAMMATIC Functions]:

P11.22 A formal Quality Assurance Program is implemented and maintained for control of the tools used in consequence assessment, such as the meteorological monitoring system hardware and software and dose modeling hardware and software.

D.4.7 Protective Actions and Reentry

Performance Goal:

Protective actions are promptly and effectively implemented or recommended for implementation, as needed, to minimize the consequences of emergencies and to protect the health and safety of workers and the public. Protective actions are implemented individually or in combination to reduce exposures to a wide range of hazardous materials. Protective actions must be reassessed throughout an emergency and modified as conditions change. Reentry activities must be planned, coordinated, and accomplished properly and safely.

Evaluation Criteria:

Protective Action Decision-Making

- P/E12.1 All emergency response activities, including search and rescue, incident mitigation activities, field monitoring, and reentry, are planned and controlled with a focus on health and safety of emergency responders within pre-planned protective action exposure guidelines.
- P/E12.2 Applicable PACs are used in protective action (e.g., sheltering, evacuation) decision-making for the actual or potential release of hazardous materials to the environment.
- a. For radioactive materials, Protective Action Guides (PAGs), promulgated by the Environmental Protection Agency (EPA), are used.
 - b. Listed in order of preference, PACs used for toxic chemicals are: Acute Exposure Guideline Levels (AEGs), promulgated by the EPA; Emergency Response Planning Guidelines (ERPGs), published by the American Industrial Hygiene Association; and Temporary Emergency Exposure Limits (TEELs), developed by DOE.

- c. For hazardous biological materials, PACs are considered exceeded and immediate protective actions are required for any actual or potential release of agents or toxins outside of secondary containment barriers. Long-term PACs are specified by State or local public health officials.
- P/E12.3 Protective actions reflect a conservative assessment of the level of health effect and extent of potentially affected/impacted area and populations.
- P/E12.4 The notification and implementation of onsite PAs and notification of offsite PARs are made in a timely, efficient, and unambiguous manner confirmed and monitored by the ERO.
- P/E12.5 Initial onsite PAs and offsite PARs are linked to facility-specific OE event classification criteria [i.e., EALs]
- P/E12.6 Initial onsite PAs and offsite PARs are linked to facility-specific biological OE event recognition and categorization criteria.
- P/E12.7 Protective actions are implemented individually or in combination to reduce exposures to a wide range of hazardous materials.
- P/E12.8 Modifications to initial protective actions are developed and implemented based on updated and refined data generated from the continuous consequence assessment process.
- P/E12.9 Decision makers consider other possible protective actions for onsite and offsite populations, such as thyroid blocking agent, chemical neutralizing agents, water and food intervention levels, transportation route access controls, and impromptu respiratory protection.
- P/E12.10 Onsite PA decision-making is coordinated with site organizations such as security and safety.
- a. Security and law enforcement measures implemented during a physical attack that impact worker and responder access and egress (e.g., lockdown) are coordinated with emergency management and site security.
 - b. The identification of necessary PPE is coordinated with emergency management and safety professionals, including industrial safety, industrial hygiene, health physics, and fire protection engineering.

Onsite - Protective Actions (PAs)

- P/E12.11 Plans are followed for the timely evacuation and/or sheltering of onsite personnel, along with provisions to account for employees after emergency evacuation has been completed.

- P/E12.12 Emergency evacuations for site personnel:
- a. Evacuation route selection and logistical details are implemented promptly and efficiently;
 - b. Multiple evacuation egress routes provide options based upon release type and wind direction;
 - c. Evacuation routes avoid hazards, are familiar to site personnel, and are coordinated with offsite authorities;
 - d. The reception/relocation center is sufficient to accommodate the expected number of personnel; and
 - e. Adequate personnel are assigned to control evacuees and are kept aware of changes in onsite protective action modifications.
- P/E12.13 Accountability in emergency evacuations for site personnel:
- a. Trained and assigned individuals assume and carry out responsibilities for building or facility accountability in the event of personnel evacuation;
 - b. Initial accounting for all evacuated personnel is completed in a timely manner to support initial search and rescue activities; and
 - c. Accountability is continued to support ongoing search and rescue activities following an emergency evacuation.
- P/E12.14 Provisions are implemented to protect workers, covered by 29 CFR 1910.120, involved in response and cleanup. This includes measures to ensure that security, fire, medical, and other response personnel are protected from exposure to hazards during the course of their movements while supporting response.
- P/E12.15 Habitability of onsite facilities, including emergency facilities, is periodically determined using dosimetry and survey instruments, and relocation/evacuation measures are taken, if necessary.
- P/E12.16 Actions that may be taken to increase the effectiveness of protective actions (i.e., HVAC shutdown during sheltering) are implemented in a timely and efficient manner.
- P/E12.17 Access to and egress from actual or potentially contaminated areas, or the site, is monitored and controlled.
- a. People, vehicles, and equipment are effectively monitored before leaving contaminated areas and the site, if possible, and also upon arrival at designated decontamination, relocation, or assembly areas.

- b. Sufficient staffing and equipment are available to activate designated monitoring locations.

P/E12.18 Emergency facilities, equipment, personnel, and implemented methods and criteria provide effective decontamination of personnel and equipment for various levels and types of contamination (e.g., skin contamination).

Offsite - Protective Action Recommendations (PARs)

P/E12.19 Timely PARs, such as sheltering, evacuation, relocation, and food control, are made to appropriate Tribal, State, or local authorities.

P/E12.20 Candidate PARs are coordinated with offsite authorities and well-defined geographic areas for sheltering and evacuation, special needs areas or special populations, and evacuation routes are readily available.

P/E12.21 Ingestion pathway PARs are formulated, when appropriate, and communicated to offsite authorities.

Reentry Activities

P/E12.22 Reentry and approval of extended dose or exposure limits is within the authority and responsibility of the ED.

P/E 12.23 Facility personnel estimate exposure to hazardous materials to protect workers and the public during reentry and recovery activities.

P/E12.24 Reentry activities are performed safely and efficiently, with specific team composition (e.g., minimum of one medically trained member) and equipment that accomplishes the mission.

P/E12.25 Reentry planning addresses the following: conduct of operations during reentry; range of hazardous materials which may be encountered; hazard control procedures; type and nature of potential safety failures; guidelines for prioritization of reentry activities; team selection, personnel safety, job planning, communications during reentry; record keeping; and provisions for backup to every reentry.

P/E12.26 Reentry planning includes contingency planning to ensure the safety of reentry personnel, such as planning for the rescue of reentry teams. The reentry plan must include a hazards/safety briefing, consistent with Federal, Tribal, State, and local laws and regulations, for all individuals involved in reentry.

P/E12.27 Exposure criteria are established and available for each type of reentry activity, including search and rescue, and repair. 10 CFR 835, Subpart N, limits are observed for radiological events, such as lifesaving, protection of

health and property, and recovery of deceased. Volunteers are used for high-risk situations.

- P/E12.28 Responders involved in reentry receive pre-reentry hazards/safety briefings prior to emergency response activities and post-reentry briefings consistent with Federal, Tribal, State, and local laws and regulations.

Record Keeping

- P/E12.29 Records of personnel exposures to hazardous materials (radioactive, chemical, and biological) are effectively controlled, monitored, and maintained.
- P/E12.30 Names of individuals surveyed, the extent of any contamination found, the instruments used and the methods employed, and results of any decontamination efforts are recorded.
- P/E12.31 Contaminated individuals are scheduled for follow-up actions (e.g., subsequent whole body counts and/or bio-assays).

D.4.8 Emergency Medical Support

Performance Goal:

Medical support for contaminated or injured personnel is planned and promptly and effectively implemented. Arrangements with offsite medical facilities to transport, accept, and treat contaminated, injured personnel are documented.

Evaluation Criteria [RESPONSE Functions]:

General

- P/E13.1 Provisions for response to emergency medical situations and medical treatment of injured personnel are implemented.
- P/E13.2 Medical treatment is provided for mass casualty situations (Cf. DOE O 440.1A).
- P/E13.3 Onsite personnel who respond to a medical emergency show proficiency in first aid or emergency medical treatment comparable with that of any offsite team employed and similarly equipped.
- P/E13.4 Employee medical records and treatment history are readily available and accessed as needed.
- P/E13.5 Onsite and offsite coordination:
- a. Treatment protocols are coordinated among onsite and offsite mutual aid response units.

- b. Offsite and onsite medical support services and capabilities are effectively integrated.
 - c. Standing orders/protocols ensure that patients are transported to the receiving facility best equipped to provide the appropriate level of care for the patient's condition.
 - d. Onsite and offsite medical communications systems are compatible and effective.
- P/E13.6 Ambulance crews initiate communications with receiving medical facilities while en route.
- P/E13.7 Procedures are in place in biosafety facilities that allow rapid and effective communications among public health officials, emergency rooms, law enforcement, and emergency management officials about unusual biological events.
- P/E13.8 During an event involving the release of hazardous biological material, medical personnel assume the role of primary responders. Medical personnel assist in release detection/confirmation, consequence assessment, and development of protective actions.
- P/E13.9 Security clearance issues do not impede medical treatment or transport of injured personnel.

Contaminated Injured

- P/E13.10 Medical support for contaminated or injured personnel is promptly and effectively implemented.
- P/E13.11 Appropriate recognition and emphasis is focused on medical treatment versus radioactive or chemical contamination for contaminated/injured personnel; proper and effective decisions are made.
- P/E13.12 Onsite and offsite medical facilities are outfitted and staffed to utilize specialized equipment and supplies specific to onsite hazards.
- P/E13.13 Immediate, effective onsite first aid and emergency medical treatment is provided for injured workers, including those with hazardous material contamination:
- a. Onsite radiation protection, industrial hygiene personnel, and infectious disease specialists are properly equipped to assist medical and Emergency Medical Service (EMS) staff in performing patient survey, decontamination, contamination and exposure control, urine and fecal analysis, and in-vivo counting methods.

- b. Proper contamination control procedures are implemented in handling injured and contaminated personnel; and
- c. Decontamination facilities are available and adequately equipped.

P/E13.14 Personnel, vehicles, facilities, and equipment are adequate for treating and transporting injured, contaminated, or exposed individuals in a safe and effective manner.

- a. Onsite and offsite medical and emergency medical technician personnel use required equipment for assessing patient conditions, including PPE and medical service protective clothing;
- b. Exposure and contamination information is sent with victims, and expert technical support is provided to the receiving hospital(s); and
- c. The site takes responsibility for removal of contaminated material in offsite medical facilities or vehicles.

P/E13.15 Additional medical assistance and treatment procedures, and associated points of contacts, are accessed, as necessary, including: search and rescue resources, REAC/TS assistance, Public Health Service coordination, long-term longitudinal health testing, chelation, handling contaminated remains, and other sophisticated medical procedures.

Evaluation Criteria [PROGRAMMATIC Functions]:

P13.16 Arrangements with offsite medical facilities to transport, accept, and treat contaminated, injured personnel are established, documented, and periodically reviewed.

P13.17 The sharing of patient information between onsite and offsite health care providers during emergencies, consistent with the requirements of Health Insurance Portability and Accountability Act of 1996 (42 USC 300), is coordinated in advance.

P13.18 Onsite and offsite medical personnel are offered information and training on facility-specific hazardous materials and offered opportunities for participation in drills and exercises.

P13.19 Biosafety surveillance plans for detecting unusual medical events are established onsite and specific responsibilities for surveillance and reporting are identified. The veterinary profession is involved in surveillance activities, as appropriate. Key indicators and medical surveillance baselines for agent/toxin are effectively implemented.

P13.20 An information system is installed at biosafety facilities for patient monitoring, management, and tracking.

- P13.21 Key indicators and medical surveillance baselines for facility-specific agents/toxins are provided to offsite medical surveillance programs for detecting unusual medical events that may have resulted from a release at a DOE/NNSA biosafety facility.

D.4.9 Emergency Public Information

Performance Goal:

Emergency Public Information (EPI) provides accurate, candid, and timely information to workers, news media, and the public during an emergency to establish facts and avoid speculation. EPI efforts are coordinated with DOE and NNSA (if appropriate); Tribal, State, and local governments; and Federal emergency response organizations, as appropriate. Workers and the public are informed of emergency plans and planned protective actions before emergencies.

Evaluation Criteria [RESPONSE Functions]:

General

- P/E14.1 Information distributed by EPI to workers, site personnel, and the public during an OE is:
- a. Accurate, candid, and understandable;
 - b. Current and timely;
 - c. Provided to ensure the health and safety of workers and the public;
 - d. Provided to establish facts, and avoid rumors and speculation;
 - e. Responsive to public concern and information needs; and
 - f. Consistent with the requirements of the Freedom of Information Act and the Privacy Act.
- P/E14.2 The Cognizant Field Element public affairs director or his designee, responsible for EPI review and dissemination, approves initial news releases or public statements.
- P/E14.3 Following initial news releases and public statements, updates are coordinated with the DOE/NNSA Cognizant Field Element public affairs director and the HQ ED.

Functions/Staffing

- P/E14.4 Functions and staff of the EPI organization:

- a. Functions of the EPI during an OE response include information collection, coordination, production, dissemination, and monitoring and analysis of media coverage, public concerns, and information needs.
 - b. Functions and staffing are consistent with the nature, severity, duration, and public and media perception of the event or condition.
 - c. Trained spokespersons provide support in media interface.
 - d. A news writer and other trained personnel provide support in media services, public inquiry, media inquiry, management and administrative services, and media monitoring.
- P/E14.5 Rumors and misinformation are detected, controlled, and corrected; accurate information disclaiming rumors and correcting misinformation is incorporated in media briefings and press releases as necessary.
- P/E14.6 Communications with the media and public are timely and responsive to public concerns.
- a. Information released to the public through the news media regarding the emergency is accurate and relevant.
 - b. An initial press statement is released as soon as possible, but within one hour of event categorization.
 - c. Frequency and content of news conferences are consistent with information needs of the public and media.
 - d. Press briefings are held with regular frequency and whenever new or breaking information is available concerning emergency conditions, protective actions, or response.
 - e. Technical briefers are utilized and are knowledgeable and effective in communicating with the news media.
- P/E14.7 EPI staff is proactive in obtaining emergency information from the facility command center or EOC.
- P/E14.8 Medical personnel associated with the biosafety program are involved in the development of materials to be used in news releases to ensure that characterization of the hazard is conveyed accurately.
- P/E14.9 Public announcements in areas involving classified information or unclassified controlled information:

- a. The appropriate official (e.g., DC) reviews news releases or announcements before release to the public to ensure that no information is provided that may present a security risk.
- b. Sufficient publicly releasable information is provided to adequately explain the emergency response and protective actions required for the health and safety of workers and the public.

Joint Information Center (JIC)

P/E14.10 The JIC is established, directed, and coordinated by a senior DOE or NNSA Cognizant Field Office public affairs manager or alternate.

P/E14.11 The designated JIC location:

- a. Is available, equipped, maintained and controlled to accommodate members of the news media, DOE, contractor, and offsite agency representatives, and to facilitate the preparation and coordination of emergency information release to the public through the news media.
- b. Provides adequate space, equipment, communications lines, security provisions, and information resources to accommodate personnel (both media and staff) and to accomplish required functions.

P/E14.12 JIC functions and staffing:

- a. The JIC is adequately staffed with personnel trained to serve as spokesperson and news writer.
- b. Persons with technical expertise related to the emergency and with spokesperson training are assigned to the JIC.
- c. Personnel are assigned to the JIC to provide support in media services, public inquiry, media inquiry, JIC management and administrative activities, and media monitoring.
- d. The JIC supports response to public inquiries in a timely manner.
- e. The JIC has provisions in place to detect, correct, and control rumors and misinformation.

P/E14.13 An alternate JIC is available in the event that the primary JIC becomes uninhabitable.

P/E14.14 JIC access control is adequate and there is a means to readily identify media representatives and staff.

- P/E14.15 Prepared relevant information concerning affected facilities, emergency plans, hazards, and logistics is provided to news media in the JIC.
- P/E14.16 Appropriate visual aids are available and utilized for briefing news media regarding events, impacted areas, consequences and protective actions.

Offsite Coordination

- P/E14.17 The management team and outside agency representatives effectively, openly, and readily share and coordinate information.
- P/E14.18 An EPI communications system is established among DOE/NNSA HQ, the Cognizant Field Element, and on scene locations.
- P/E14.19 Public information functions and efforts during the emergency are coordinated with DOE HQ, other Federal agencies, and Tribal, State, and local government organizations and are a part of Federal emergency response plans, as appropriate.
- P/E14.20 Information (written and verbal) that is to be released to the news media is coordinated with DOE, and other Federal, state, tribal and local response organizations, as appropriate.
- P/E14.21 The DOE/NNSA Cognizant Field Office public affairs director and HQ ED are notified of all DOE/NNSA emergency public information actions. These notifications are made as soon as practicable.
- P/E14.22 A public information officer is assigned to a facility/site or activity emergency response team deployed offsite to provide mutual aid to a significant response.

Evaluation Criteria [PROGRAMMATIC Functions]:

- P14.23 An EPI Plan, which can cover more than one facility on a site, provides the following:
- a. Identification of personnel, resources, facilities, and coordination procedures necessary to provide emergency public information;
 - b. Training and exercises for personnel who will interact with the media;
 - c. A methodology for informing workers and the public of DOE/NNSA emergency plans and protective actions, before and during emergencies;
 - d. Coordination of public information efforts with local, State, and Tribal governments, and Federal emergency response plans, as appropriate.
- P14.24 The EPI program has provisions for establishing a media center to operate as the single source of information during an OE. [A media center is a

designated location where the DOE/NNSA Cognizant Field Element and contractor personnel can conduct the necessary briefings and press conferences regarding an OE at the facility.]

- P14.25 For Hazardous Material Program facilities/sites, the EPI program has provisions to establish a Joint Information Center (JIC), where multiple jurisdictions gather, process, and disseminate public information during an OE.
- P14.26 The EPI program is integrated with facility/site emergency management program plans and procedures.
- P14.27 Prior to emergencies, workers and site personnel are informed of emergency response plans, response capabilities, and planned protective actions.
- P14.28 Continuing education is provided to the area news media for the purpose of acquainting media with the facility, management personnel, facility/site hazards, emergency plans, and points of contact.
- P14.29 In coordination with Tribal, State and local governments, information is disseminated periodically to the public regarding facility hazards, how they will be alerted and notified of an emergency, what their actions should be in the event of an emergency, and points of contact for additional information.
- P14.30 Internal and external organizational relationships for EPI are documented and maintained in the public information program.
- P14.31 A list of 24-hour media points-of-contact is available and maintained current.

D.4.10 Termination and Recovery

Performance Goal:

An OE is terminated only after a predetermined set of criteria has been met and termination has been coordinated with offsite agencies. Recovery from a terminated OE includes: communication and coordination with Tribal, State, and local government and other Federal agencies; planning, management, and organization of the associated recovery activities; and ensuring the health and safety of the workers and public.

Evaluation Criteria:

Termination

- P/E15.1 The decision to terminate emergency response for an OE is made by the site ERO and is coordinated with all principle participating response organizations (i.e., local, State, Tribal, DOE HQ, other participating Federal agencies). Internal and external communications that are associated with termination are performed.

- P/E15.2 The decision to terminate an OE not requiring classification formally announces or acknowledges that the situation is stabilized and that the response activity is ending or has been substantially scaled back. Termination criteria are observables associated with the event/condition.
- P/E15.3 The decision to terminate an OE requiring classification is based on the need for the ERO to remain fully active to monitor and manage the situation and is a declaration that a decision has been reached that the full ERO is no longer needed and the ERO may now begin to reduce its support. The termination criteria represent decision criteria to be satisfied.
- P/E15.4 An approved, predetermined set of criteria for terminating an OE requiring classification [e.g., an airborne release of (or loss of control over) hazardous material] is met. Selected termination criteria may include the following:
- Recovery plan is developed
 - Recovery staff is identified
 - Event scene/facility is in stable condition
 - Event scene/facility is isolated and can be preserved
 - Resources are available to begin recovery activities
 - All releases of hazardous materials are ended or below level of regulator concern
 - Accountability of all personnel is complete
 - Contaminated areas are identified, isolated and secured
 - All injured and contaminated personnel have been treated and transported
 - Notification of next-of-kin of victims
 - Protective actions have been adjusted according to extended conditions
 - Recovery manager and staff have been fully briefed by the Emergency Director
 - Notifications are made to DOE, other Federal, Tribal, State, and local response organizations.
- P/E15.5 An approved, predetermined set of criteria for terminating an OE not requiring classification are met. Selected **general** termination criteria that apply may include the following:

- Recovery plan is developed
- Recovery staff is identified
- Event scene/facility is in stable condition
- Event scene/facility is isolated and can be preserved
- Resources are available to begin recovery activities
- Next-of-kin of victims have been notified
- Recovery manager and staff have been fully briefed by the ED
- Notifications are made to DOE/NNSA, other Federal, Tribal, State, and local response organizations.

P/E15.6 Additional OE-specific criteria for emergencies not requiring classification are met.

P/E15.7 Termination criteria for a hazardous biological material release OE are similar to criteria for an OE that requires classification, such as the release of toxic or radioactive materials. The decision to terminate a biological OE is based on the perceived need for the ERO to remain fully active to monitor and manage the situation. Termination is a declaration that a decision has been reached that the full ERO is no longer needed and the ERO may now begin to reduce its support.

P/E 15.8 Facility personnel estimate exposure to hazardous materials to protect workers and the public during reentry and recovery activities.

Recovery

P/E15.9 Prior to terminating the emergency response, the site ERO establishes the recovery organization and determines the resources needed to begin recovery operations.

P/E15.10 The beginning of the recovery phase is marked by the termination decision and subsequent notifications that an event no longer constitutes an OE.

P/E15.11 The recovery plan to return the affected facility/area to normal operations following the termination of the OE is developed by the recovery organization, and depends on (i.e., is commensurate with) the severity and nature of the emergency event or condition.

P/E15.12 The plan and recovery organization address the following areas, as needed:

- Dissemination of information to Federal, Tribal, State, and local organizations regarding the emergency and possible relaxation of protective actions;
- Notifications associated with termination;
- Accident assessment and investigation;
- Recovery planning and scheduling;
- Establishment of a recovery organization;
- Repair and restoration;
- Planning for cleanup and decontamination;
- Waste management;
- Regulatory (e.g., environmental) compliance;
- Security;
- Crime scene investigation;
- Communication and notifications;
- Development and approval of recovery procedures;
- Repair or replace emergency equipment, replenish consumables;
- Health and safety (e.g., medical follow-up planning);
- Reporting requirements; and
- Criteria for the resumption of normal operations.

P/E15.13 Accident assessment and investigation are performed, consistent with event severity, including root cause analysis, accident reporting, event documentation collection, assessment of facility condition, and assessment of contamination effects, if relevant.

P/E15.14 Root cause(s) of the emergency are investigated and corrective action(s) to prevent recurrence are developed according to Departmental requirements.

P/E15.15 Recovery activities are coordinated with Federal, Tribal, State, local and other agencies, and are in compliance with their requirements.