

INSPECTION OF THE IMPLEMENTATION OF MITIGATION STRATEGIES ORDER REGULATING THE USE OF NATIONAL SAFER RESPONSE CENTERS

PROGRAM APPLICABILITY: IMC 2507

43006-01 INSPECTION OBJECTIVE

To verify that vendors storing, handling, and supplying portable equipment to be used by licensees comply with 10 CFR 50.155 "Mitigation of beyond-design-basis events," and NRC Order EA-12-049 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12056A045), which added requirements for mitigation strategies for beyond-design-basis external events. The NRC will perform an inspection of the Strategic Alliance for FLEX Emergency Response (SAFER) program every 3 years alternating between National SAFER Response Centers (NSRC) located in Memphis, Tennessee and Phoenix, Arizona.

43006-02 INSPECTION REQUIREMENTS

- 02.01 The inspector reviews the program, instructions, procedures, plans, and policies and verifies, by observing vendor activities, document reviews, and interviewing vendor staff, that the selected vendor has implemented effective programmatic controls for FLEX-related activities. The vendor's chosen program to ensure licensees are in compliance with the NRC order should be based on the appropriate criteria contained in the contractual agreement between the vendor and the licensees. The vendor's program should be based on the criteria contained in the NRC-approved revision of NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," and 10 CFR 50.155 "Mitigation of beyond-design-basis events".
- 02.02 The lead inspector will prepare an inspection plan in accordance with IMC 2507, "Vendor Inspections." The inspection plan should provide the scope and basis for the inspection; describe the proposed evaluation of the vendor's activities, including the chosen program procedures and its implementation; and identify the work assignments for each inspector. The inspection plan shall consider inspection of the critical and quality attributes identified in the Phase 3 site response plans

43006-03 INSPECTION GUIDANCE:

The vendor's program should contain procedures, policies, and instructions that meet the minimum capabilities of off-site resources. NEI 12-06, section 12.2, describes an acceptable scope and provisions envisioned for the proper management for off-site FLEX-related activities. The inspector will take into consideration the 10 areas described in Section 12.2 while conducting the inspection to ensure the vendor has implemented adequate controls for these

inspection areas: procurement of materials, equipment and services, conduct of tests, maintenance of equipment, storage and staging of equipment, and corrective actions.

Specific Guidance. The lead inspector should focus the inspection effort based on the program elements specified in the NEI 12-06 and the SAFER program documents to meet the requirements of 10 CFR 50.155 and NRC Order EA-12-49. This Inspection Procedure (IP) is a modified version of IP 43002, "Routine Inspections of Nuclear Vendors" because the vendor is not required to implement a program that complies with Appendix B to 10 CFR Part 50. This is because the equipment is for beyond-design-basis events.

To prepare for the inspection, the inspector should become familiar with:

- 10 CFR 50.155, "Mitigation of beyond-design-basis events"
- RG 1.226, "Flexible Mitigation Strategies for Beyond-Design-Basis Events"
- Interim staff guidance (ISG) JLD-ISG-2012-01, Revision 0, "Compliance with Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ML12229A174), and
- Nuclear Energy Institute (NEI) 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0 (ML12242A378).

These documents describe the NRC's expectations for off-site support including what Phase 3 equipment is necessary. The NRC endorsed the licensees' proposed plans for off-site support via letter dated September 26, 2014 (ML14265A107). The NRC sought reasonable assurance that the National SAFER Response Centers (NSRCs) would be capable of delivering the FLEX equipment to support licensees' compliance with 10 CFR 50.155 and NRC Order EA-12-049. The inspection scope focused on the programmatic elements delineated in Section 12 of NEI 12-06. The focus of the NRC's inspection of the NSRC is to verify deployment capabilities are met against 10 CFR 50.155 and NRC Order EA-12-049.

After the inspector becomes familiar with the vendor's program and implementing procedures, the inspector will select a sample of activities and equipment for review. For the selected activities, the inspector should request that the vendor provide (or make available for review) a complete package of the pertinent records. The inspector should include procurement documents, equipment specifications, maintenance records, calibration records, and associated documentation pertinent to the area of review. The inspectors should also review the vendor's programs and procedures, controlling processes and activities. In addition, the inspector may use the results of the most recent NUPIC audit to verify licensee's assessment of their vendor and to verify that any deficiencies identified are being properly addressed in the corrective action program.

The inspector should evaluate the effectiveness of the vendor's implementation of its program using the guidance below.

03.01 SAFER Program.

Verify the vendor's program implementation in accordance with NEI 12-06 by performing the following:

- a. Verify that the vendor program identifies the items and activities to which it applies, and that these activities are accomplished under suitably controlled conditions.
- b. Verify that the organizational description addresses the organizational structure, functional responsibilities, levels of authority, and interfaces.
- c. Verify qualifications, responsibilities, and duties of personnel performing activities affecting FLEX equipment. In order to verify that personnel have been adequately trained, the inspector may conduct interviews with the personnel to ensure that they have an understanding of the activities they are performing commensurate with their responsibilities.
- d. Verify that vendor's emergency response process and systems, as described in the site response plans, operate as designed by reviewing documentation of established maintenance and testing program activities.
- e. Verify that vendor's employees know, in case of an emergency, who is responsible for receiving the activation call and what would be the staff's responsibilities for responding to the call in case of emergency.
- f. Verify that the vendor is implementing procedures to control changes that could affect the procurement, program procedures, testing, and maintenance of FLEX equipment and that changes do not impact any critical function (e.g., revision to Equipment Technical Requirements Document does not omit important parameters). Verify that any changes were properly communicated between licensees and the vendor (i.e., review SAFER Equipment Committee meeting minutes and recent update to FLEX strategies).
- g. Verify that the vendor has established and implemented FLEX equipment handling, maintenance, calibration, test, and inspection procedures including any such activities applicable to sub-vendor activities (i.e., contracted testing or calibration services). Also ensure they include quantitative and qualitative acceptance criteria for determining that activities have been satisfactorily accomplished.

03.02 Procurement Document Controls and Internal Audits

Select a sample of procurement **and internal audit** documents and verify the implementation of procurement document controls and **internal audits** by performing the following:

- a. Verify that the vendor has established and implemented procedures are established and implemented for the control and release of procurement documents and subsequent changes.
- b. Verify that the vendor's (i.e., PEICo's) procurement documents to its suppliers include the licensees' quality requirements, including: technical, administrative, regulatory, and reporting requirements, such as, specifications, codes, standards, settings, parameters, critical characteristics, tests, and inspections. Verify that procurement documents comply with the FLEX equipment critical functions.
- c. Verify that equipment procured and stored at the NSRCs is 1) as specified in the purchase orders and 2) as required for their intended use per the applicable **licensees'** specifications (e.g., use of appropriate standard mechanical and electrical connections).

- d. Verify that any necessary equipment to support the deployment of the FLEX equipment is available and properly maintained.
- e. Verify that contracts with **trucking** and air providers are in place, valid and updated to ensure assumptions (i.e., no single external event will preclude capability to supply needed resources to licensees) for deployment of FLEX equipment remain valid.
- f. Verify that the vendor has a documented method for the identification and control of nonconforming material and components to preclude inadvertent use.
- g. **Verify that the vendor performed an adequate internal audit.**
- h. **Verify that the vendor used a purchase order to acquire the services of an independent contractor to perform the internal audit.**

03.03 Measuring & Test Equipment (M&TE) Control. Assess M&TE controls by performing the following:

- a. Verify that the vendor calibrates, adjusts, and maintains M&TE at prescribed intervals prior to use. Verify that the vendor defines the method of calibration for each device. Verify that the vendor performs calibration using certified equipment having known valid relationships to nationally recognized standards. When M&TE is found to be out of calibration, provisions in the procedures should require an evaluation to verify if previous inspection or test results are affected.

03.04 Test and Maintenance. Assess test and maintenance controls by performing the following:

- a. Verify that the vendor has established and implemented procedures for testing and maintenance. Examples of tests and maintenance activities include receipt inspection, preventive and post-maintenance testing, post-modification, tests after operational or emergency use, and proper use of M&TE.
- b. Verify that test procedures include or reference test objectives, test requirements, applicable prerequisites, and acceptance criteria contained in the applicable technical documents.
- c. Verify that preventive maintenance tests are properly challenging the critical function (i.e pump discharge pressure is verified) and when deficiencies are identified verify that the proper corrective actions are taken (i.e., FLEX strategies require action within 90 days).
- d. Verify that the vendor documents test results and results are evaluated by a qualified individual to ensure satisfactory test requirements. Test records, as a minimum, should identify the item tested, date of test, tester or data recorder, type of observation, instruments used and the validity of their calibration, results and acceptability, action taken in connection with any deviations noted, and the individual evaluating test results.
- e. Verify controls are in place to document and prevent nonfunctional Phase 3 equipment from deployment.

- f. Verify maintenance history is communicated and evaluated against both NSRCs to support all deployment configurations.
- g. Verify NSRCs generators have adequate load sharing capabilities, pairing availability, and are identifiable.
- h. When possible, observe the vendor or its contractor performing maintenance on the vendors equipment and verify they performed their safety pre-job brief and followed warnings, cautions, and notes per the work instruction procedures. Verify equipment settings were appropriate to ensure compliance with work instructions.
- i. Verify personnel performing test and maintenance were qualified from reviewing their training records.

03.05 Handling, Storage, and Deployment. Assess handling, storage, and deployment controls of FLEX equipment by performing the following:

- a. Verify that the vendor has established and implemented procedures for the control of deployment activities when the response centers are activated. This includes proper staging, loading of trucks, marking and labeling, storing of site-specific and generic licensee equipment, out of service status, shipment of items and components, and control of limited shelf-life materials.
- b. Verify that personnel are familiar with the bill of lading and is already prepared and stored for immediate use and ensure it matches the different storage areas as they pertain to the different licensees. The bill of lading should specify all the FLEX equipment to be shipped in case of activation and the available means of transportation to meet the deployment requirements, including current agreements with shipping companies.
- c. Verify that operators responsible for ensuring the right equipment is shipped and properly stored post maintenance activities are experienced or trained.
- d. Verify that spare parts for the FLEX equipment are available and in good condition for use at the NSRC and potentially to support licensee needs.
- e. Verify that the storage facility would provide the necessary protection of the equipment and meet the availability requirements in accordance with the mitigation strategies requirements in 10 CFR 50.155.
- f. Verify that all samples of equipment verified for storage condition were adequately preserved and maintained.
- g. Verify that all the documentation at the facility for deployment of equipment when called upon during an emergency was up to date and reflected the current conditions of the warehouse.
- h. Verify NSRCs Site Response Plan (SRP) contain measures to deploy site specific Phase 3 FLEX equipment

03.06 Corrective Action Program

Select a sample of corrective action reports, **nonconformance reports** and related documents for review. Assess corrective action controls by performing the following:

- a. Verify that the vendor has established and implemented procedures for correcting conditions affecting **Phase 3** FLEX equipment as defined by the vendors program.
- b. Verify that corrective action reports **and/or nonconformance reports** provide for documentation and description of the condition, the cause and corrective action taken to prevent recurrence when applicable, review and approval by the responsible authority, status of corrective actions reviewed, and follow-up action taken to verify timely and effective implementation of corrective action.
- c. Verify that the vendor adequately assesses and documents program deficiencies (e.g., program deficiencies, receipt inspection rejections, equipment malfunction, maintenance test failures etc.) in its corrective action program. **Verify that vendor personnel, licensees or sub-suppliers may report program deficiencies and operating experience.**
- d. **Verify corrective actions include reviews of operational experience from Phase 2 equipment issues and failures.**

43006-04 REPORTING REQUIREMENT

Inspectors will document any issues in accordance with IMC-0617, "Vendor and Quality Assurance Implementation Inspection Reports." Any issues identified will be processed in accordance with the more-than-minor criteria in the IMC. The highest enforcement action will be issuance of a nonconformance (NON) with the expectation that the vendor will address these issues in their corrective action program because these facilities are implementing beyond-design-basis requirements. Currently any findings identified will be associated with the requirements of the NRC order and the programmatic documents established by the Vendor. If numerous deficiencies are identified, it is expected that licensees address how they are coordinating with the vendor on the resolution of these issues. In this case the inspector should capture in the cover letter the number of repetitive findings identified.

43006-05 RESOURCE ESTIMATE

This inspection procedure is used for the triennial assessment of the off-site national response centers SAFER program that supports licensees in a beyond-design-basis event. The resource estimate for this inspection procedure is approximately 64 hours of direct inspection effort. The resource estimate is based on a 32-hour week inspection performed by two inspectors alternating per NSRC site on a three-year basis.

43006-06 REFERENCES

IMC 2507, "Vendor Inspections"

NEI 12-06, Rev 4, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide"

JLD ISG 2012 01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ML12229A174)

Staff Assessment of National SAFER Response Centers established in response to Order EA-12-049, dated September 26, 2014 (ML14265A107)

Updated Staff Assessment of National SAFER Response Centers established in response to Order EA 12-049, dated September 20, 2018 (ML18157A014)

Regulatory Guide 1.226, Rev. 0, "Flexible Mitigation Strategies for Beyond-Design-Basis Events"

Staff Assessment of Nuclear Procurement Issues Corporation (NUPIC) SAFER Commitment to NRC Order EA-12-049 (ML20015A553)

END

Attachment:

Attachment 1: Revision History for IP 43006

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Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment and Feedback Resolution Accession Number (Pre-Decisional, Non-Public)
N/A	ML16271A278 09/30/16 CN 16-025	This is the initial issuance of an Inspection Procedure which will be used to verify licensee's satisfactory implementation of NRC Order EA-12-049, as it pertains to the Phase 3 implementation plan for off-site support during a beyond-design-basis emergency.	N/A	ML16271A292
N/A	ML20283A573 10/16/20 CN 20-051	Periodic review. Add guidance from lessons learned during inspections at both facilities (ML17117A576- Memphis, ML17012A186- Phoenix) to address alternating tri-annual inspection frequency, nonfunctional/spare (N+1) equipment controls, maintenance communication and evaluations, and load sharing.	N/A	N/A
N/A	ML22147A060 06/16/22 CN 22-013	Updated to include 10 CFR 50.155 guidance and lessons learned from the inspection (ML20329A183 at Phoenix Safer Facility). Update corrective action to include review of operational experience from phase 2 equipment issues and failures.	N/A	N/A