
INSPECTION PROCEDURE 71114

REACTOR SAFETY—EMERGENCY PREPAREDNESS

Effective Date: 07/01/2021

PROGRAM APPLICABILITY: IMC 2515 App A

71114-01 INSPECTION OBJECTIVES

01.01 The objective of this procedure is to gather information to determine, in conjunction with the performance indicators, whether a licensee is meeting the Cornerstone Objective and Performance Expectation.

- a. The Cornerstone Objective is “To ensure that the licensee is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency.”
- b. The Cornerstone Performance Expectation is “Demonstration that reasonable assurance exists that the licensee can effectively implement its emergency plan to adequately protect the public health and safety in the event of a radiological emergency.”

71114-02 INSPECTION REQUIREMENTS

02.01 Baseline inspection requirements are identified in each of the attached inspectable areas:

- a. Exercise Evaluation (Attachment 01)
- b. Alert and Notification System Evaluation (Attachment 02)
- c. Emergency Response Organization Staffing and Augmentation System (Attachment 03)
- d. Emergency Action Level and Emergency Plan Changes (Attachment 04)
- e. Maintenance of Emergency Preparedness (Attachment 05)
- f. Drill Evaluation (Attachment 06)
- g. Exercise Evaluation – Hostile Action (HA) Event (Attachment 07)
- h. Exercise Evaluation – Scenario Review (Attachment 08)

02.02 The requirements found in the attached inspectable areas represent the minimum inspection activity to be conducted at each reactor site. The expected frequency of inspection is given in each inspectable area.

02.03 The accuracy of licensee reported performance indicator (PI) data will be inspected annually using Inspection Procedure (IP) 71151, "Performance Indicator Verification."

02.04 The licensee program for problem identification and resolution will be inspected annually using IP 71152, "Identification and Resolution of Problems."

02.05 10 CFR 50, Appendix E, Section IV.F.2 (challenging drills and exercises) requires each licensee to conduct a hostile action exercise no later than December 31, 2015. The first eight-year exercise cycle will begin in the calendar year of the first hostile action exercise. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a. All the new exercise cycle requirements described in Section IV.F.2 must be completed/ implemented no later than the end of the first eight-year exercise cycle.

71114-03 INSPECTION GUIDANCE

General Guidance

03.01 Performance Indicators.

- a. The "Drill/Exercise Performance" PI (DEP PI) monitors licensee performance of event classification, offsite authority notification and protective action recommendation (PAR) development.
- b. The "Emergency Response Organization Drill Participation" PI (ERO PI) monitors licensee efforts to develop and maintain key skills within the ERO through participation in proficiency enhancing evolutions, such as drills.
- c. The "Alert and Notification System Reliability" PI (ANS PI) monitors reliability of the alert and notification system. This system has been identified as the most risk-significant equipment system maintained by nuclear plant emergency preparedness programs.
- d. DEP and ERO PIs are linked in that ERO drill participation is only credited when performance is assessed for contribution to DEP. The details and exceptions to this linkage are contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline."

03.02 Disposition of Findings.

- a. The need for inspection beyond the Baseline Inspection Program (BIP) is determined through the significance and number of inspection findings and the status of PIs.
- b. A Significance Determination Process (SDP) has been developed for assessing the significance of inspection findings. The details of the Emergency Preparedness (EP) SDP are contained in Manual Chapter 0609, Appendix B.

- c. The BIP is designed for programs operating in the “licensee response band,” that is, a program with green PIs and only green findings. The resources allocated in the BIP are not intended to be sufficient for the characterization of potential white, yellow, or red findings. Should it be necessary to characterize such findings, and the time involved exceeds a few hours, the time should be allocated to the SDP rather than the BIP.

03.03 Failure to Implement Corrective Actions.

- a. Licensee failures to implement corrective actions necessary to maintain the effectiveness of the EP program, to resolve weaknesses observed in a drill or exercise, to restore compliance with regulatory requirements, or to address an inspection finding should be summarized and provided to the team leader for the annual problem identification and resolution inspection.
- b. Weaknesses (see Attachment 1 “Evaluating Exercise Player Prompting” and 2 “ERO Weaknesses” to this procedure) in ERO performance appropriately critiqued by the licensee in evaluated exercises, drills, and training are not considered to be findings. However, the inspector must ensure that such items are entered into the licensee corrective action system in a manner that will allow review during the subsequent off-year exercise and next biennial exercise. If the licensee fails to identify the weakness, the failure should be documented as a failure to comply with a regulatory requirement and its significance assessed using the EP SDP.
- c. Section IV.F.2.g of Appendix E to 10 CFR 50 requires that all weaknesses or deficiencies that are identified in a critique of exercises, drills, or training be corrected. Inspectors should review the correction of licensee and NRC-identified weaknesses. However, a repeat ERO performance weakness may not in itself, represent a failure to correct a weakness. The inspector must review licensee efforts to correct the weakness and the reasons for the repeat problem. If the problem is localized it would not be appropriate to determine that it represents a failure to correct. Guidance on determining the adequacy of licensee efforts to resolve weaknesses is contained in Manual Chapter 0612, in the EP SDP, and Inspection Procedure 71152.

03.04 Risk-Significant Areas.

Implementation of the emergency plan (E-Plan) is dependent on the performance of the ERO in their EP assignments. There are many areas important to E-Plan implementation, but the most risk-significant areas of performance are:

- a. Timely and accurate classification of events. This includes the recognition of events as potentially exceeding emergency action levels. [10 CFR 50.47(b)(4) and Section IV.C.2 of Appendix E to 10 CFR Part 50]
- b. Timely and accurate notification of offsite governmental authorities. This includes adequate performance of notifications to state and local authorities as specified in the E-Plan. [10 CFR 50.47(b)(5) and Appendix E to 10 CFR Part 50 sections IV.D.1 and IV.D.2]

- c. Timely and accurate development of PARs for offsite authorities. This includes providing PARs to governmental authorities, and the decision-making process to develop the PARs. [10 CFR 50.47(b)(10)]
- d. Assessment of offsite consequences. This includes the ability to assess and monitor the magnitude and dose consequences of potential or actual radioactive releases. [10 CFR 50.47(b)(9) and Appendix E to 10 CFR Part 50 sections IV.G and IV.E.2]

In general, NRC oversight in EP is focused on adherence to the E-Plan with an emphasis on these most risk-significant areas, and inspection resources should be deployed in a manner to cover these areas. However, within the constraint of resources, a broad range of response areas should be inspected.

03.05 Inspection Resource Planning.

The inspector should use corrective action system data to identify response areas of concern and deploy inspection resources accordingly. Areas, (e.g., OSC, field monitor teams) that have had few critique findings or more than average (as compared to the TSC or EOF) findings should be selected for observation. Inspection resources usually deployed in the TSC, EOF, or Control Room may be used to observe other areas should the inspector identify a need.

- a. If the licensee's performance in previous baseline inspections in these risk-significant areas in conjunction with its performance under the DEP PI indicates reliable acceptable performance, within the licensee response band, inspectors should reduce the inspection sampling of these areas and instead use a portion of available inspection resources to sample a selection of less risk significant areas from Attachment 3 "Prioritization of Additional Areas for Inspection," regardless of the results of the review of critique findings.
- b. In order to facilitate review of critique related corrective actions, the inspector should request a corrective action system listing sorted for drill and exercise critique findings of the last 2-3 years. If possible, the findings should be sorted by response center.
- c. The inspector should remain alert to the impact that the licensee's performance in less risk-significant areas (e.g., staffing, training, etc.) may have on the licensee's performance in the risk-significant areas.

03.06 Prioritization of Additional Areas for Inspection.

Guidance for deployment of inspection resources beyond the most risk-significant areas is provided below. These areas may generally be considered in order of importance. Selection for deployment of inspection resources should be based on knowledge of the program, previous problems and logistics.

- a. Adequacy of worker protection including accountability, evacuation, exposure authorization and thyroid protection, including actions during a hostile action [10 CFR 50.47(b)(10) & (11) and Appendix E to 10 CFR Part 50 sections IV.E and IV.I].

- b. Adequacy of interface with offsite authorities (e.g., in the area of PAR communication and technical support). [10 CFR 50.47(b)(6) and Appendix E to 10 CFR Part 50 sections IV.A.7, IV.E.9, and IV.D].
- c. Adequacy of arrangements for offsite resources responding to an emergency, including hostile actions, at the licensee's site [10 CFR 50.47(b)(6) and Appendix E to 10 CFR Part 50 section IV.A.7.]
- d. Readiness and adequacy of EP equipment and facilities, including alternate and backup facilities [10 CFR 50.47(b)(8) and Appendix E to 10 CFR Part 50 section IV.E].
- e. Timely activation of facilities [10 CFR 50.47(b)(2) and Appendix E to 10 CFR Part 50 sections IV.C and IV.E].
- f. Ability to prioritize mitigation and assessment efforts to protect the public health and safety.
- g. Command and control [10 CFR 50.47(b)(1)].
- h. Ability to diagnose plant accident conditions, other than offsite consequences addressed in the risk-significant area discussion.
- i. Ability to formulate mitigating actions.
- j. Ability to implement mitigating actions (e.g., damage control teams) under accident and hostile action event conditions.
- k. Adequacy of communications between licensee facilities [10 CFR 50.47(b)(6) and Appendix E to 10 CFR Part 50 section IV.E.9].
- l. Accuracy and completeness of licensee-approved press releases [10 CFR 50.47(b)(7)].

03.07 Scheduling

Attachment 1 should be scheduled for evaluation of the biennial exercise, except those exercises involving hostile action based scenarios, which are evaluated under Attachment 7. An exercise is to be evaluated biennially at each licensee site, including one biennial exercise for each licensee at a co-located site. IP71151 is to be performed annually and should be performed in conjunction with Attachment 1. Attachment 2, "Alert and Notification System Evaluation," Attachment 3, "Emergency Response Organization Staffing and Augmentation System," and Attachment 5, "Maintenance of Emergency Preparedness," may be conducted during a single inspection in the off biennial exercise year. Attachment 6, "Drill Evaluation," is conducted annually by the resident inspector and may be done whenever convenient to the licensee and inspector schedule. Attachment 7, "Exercise Evaluation – Hostile Action Event," should be conducted once every eight year planning cycle in lieu of Attachment 1. Attachment 8 is to be scheduled prior to any evaluated biennial exercise.

71114-04 RESOURCE ESTIMATE

Estimates of inspection resources are identified within each inspectable area attachment.

71114-05 REFERENCES

NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and revisions.

NSIR/DPR-ISG-01, "Interim Staff Guidance Emergency Planning for Nuclear Power Plants"

Regulatory Guide 1.101, "Emergency Planning and Preparedness For Nuclear Power Reactors," all revisions.

Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors"

Regulatory Issue Summary (RIS) 2003-18, "Use of NEI 99-01, 'Methodology for Development of Emergency Action Levels'," and Supplements.

RIS 2005-02, "Clarifying the Process for Making Emergency Plan Changes."

Inspection Procedure 71152, "Identification and Resolution of Problems."

Inspection Procedure 71151, "Performance Indicator Verification."

FEMA-REP-10, "Guide For the Evaluation of Alert And Notification Systems For Nuclear Power Plants."

Bulletin 2005-02, "Emergency Preparedness and Response Actions For Security-Based Events."

END

Attachments:

- .01 Exercise Evaluation
- .02 Alert and Notification System Evaluation
- .03 Emergency Response Organization Staffing and Augmentation System
- .04 Emergency Action Level and Emergency Plan Changes
- .05 Correction of Emergency Preparedness Weaknesses
- .06 Drill Evaluation
- .07 Exercise Evaluation - Hostile Action (HA) Event
- .08 Exercise Evaluation – Scenario Review

ATTACHMENT 1

EVALUATING EXERCISE PLAYER PROMPTING

Introduction

This attachment provides guidance for inspectors in the identification of player prompting during drills and exercises conducted to meet the requirements of 10 CFR 50.47(b)(14) and Section IV.F.2 of Appendix E to 10 CFR Part 50.

Not all of the information that may be provided by controllers to players is coaching. Some information, namely “injects” are generally appropriate.

Inject

An inject is a verbal or written communication between a controller and a player that provides information regarding simulated conditions, analysis results, instrument readings, etc., all of which would reasonably be expected to be known or discoverable during an actual event. An inject may also be used to change the course of exercise play if that play threatens successful completion of the exercise.

The first part of this definition is the primary objective of an inject. An inject provides information that the player(s) would otherwise have readily available but doesn't because of the artificiality of a drill or exercise situation. For example, it is acceptable for a controller to tell a field team member that his survey instrument is reading X.X, if the field team member performed the survey activity and then asked for the reading. It is similarly acceptable for a controller to hand a auxiliary operator passing through a plant area a card identifying that a simulated fire is burning in that area. However, a controller providing information that the player(s) have not earned will likely constitute prompting. The player “earns” the information by performing the procedures that would govern his or her actions during an actual emergency to the extent allowed by plant and personnel safety

The second part of the definition addresses a verbal or written communication intended to prevent or correct an unanticipated situation that would result in an inability to evaluate exercise objectives (e.g., a delayed general emergency declaration could prevent evaluation of offsite agency objectives). These situations could be due to an ERO performance deficiency or a deficiency in the exercise scenario either of which is an exercise weakness that needs to be critiqued and corrected. However, the exercise need not be terminated.

Prompting

Prompting is an inject or other action by a controller or evaluator that prevents a true evaluation of a player's performance in an evaluated drill or exercise by masking performance weaknesses that would have otherwise become apparent if the prompting had not occurred.

Controller actions that could fall within the above definition include the following examples to the extent that the controller actions prevent a true evaluation of a player's performance or mask player or program weaknesses:

1. A controller who directs a player to perform an activity that the player would not have performed absent the prompt.
2. A controller who provides information that would not have yet been discoverable by any player.
3. A controller who by direct statements or facial expressions or other body language indicates to a player that the just-completed action is incorrect, such that the player re-performs the action and reaches a different endpoint than he would have absent the prompting.
4. A controller who provides a player with information that was not “earned” via simulation of an activity, if in doing so the player is alerted to his failure to perform the simulated activity. Specifically:
 - a. It is prompting for a controller to provide a field team with sample readings when the field team did not simulate taking or analyzing that reading or sample.
 - b. It is prompting for a controller to ask a field team what their dosimeter reads when the field team hasn’t read their dosimeters since they left the plant.
 - c. It is not prompting for a controller to provide information to a player if, during an actual event, the information would have been readily obvious, for example, a controller telling a player doing a plant tour that an explosion had just occurred in that plant area or an adjacent area. Note, however, that a controller telling the ED in the TSC of an explosion in a HPSI quadrant is prompting because the ED had no reason to know the information, even in an actual event.
5. Controller statements to a player such as:
 - a. “Are you sure that’s correct?”
 - b. “Is that what the procedure calls for?”
 - c. “That’s not correct. Try this approach.”
 - d. “Did you see this change in the display?”
 - e. “Are you aware the ED just declared an Alert?”
 - f. “Have you made the notification yet?”

Prompting of exercise participants is not a finding under the ROP because it has no risk significance in itself. However, prompting could prevent the identification and correction of ERO performance weaknesses as required by § IV.F.2.g of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(14). Accordingly, the failure of the licensee to identify the weaknesses, which would have been identified if not for the prompting, may be a performance deficiency that should be evaluated as a failure to comply and assessed for significance. Prompting may also be a basis for failing a DEP PI opportunity.

Relationship of Injects and / or Prompting to Scoring a Performance Opportunity

An inspector identifying an inject or prompting situation needs to consider the reason (causal factors) for the inject in assessing whether a particular player’s performance needs to be

considered as an opportunity failure or success.

1. Prompting that affects the outcome of a performance indicator opportunity should generally be categorized as a failed opportunity. This is consistent with the guidance in NEI 99-02.
2. In an inject situation, a player who successfully completes a performance opportunity prior to the inject should generally be credited with an opportunity success.
3. If the timing of the inject is such that a player's performance is a failure to this point, but changes to a success because of the inject, the player should be credited with an opportunity failure as without the inject, the endpoint would have been a failure.
4. A player who successfully completes a performance opportunity prior to the inject and successfully completes the re-performance should be credited with a single opportunity success since the second opportunity was the result of the inject and was not envisioned in the scenario.
5. In these inject situations, it is important to note that the ERO weaknesses or scenario deficiency that made the inject necessary must be critiqued and corrective actions taken.
6. Even if identified in the critique, prompting during a DEP PI opportunity should be considered as a failure. (See ROP FAQ No. 405 dated July 21, 2005.)
7. It is also possible that prompting throughout an exercise could be so extensive as to bring into question whether the exercise was a satisfactory test of the E-Plan. This determination, which would involve Regional management, would be made based on the extent of the coaching and the risk-significance of the associated weaknesses.

Consider a case:

1. A player properly classifies an emergency based on displayed indications (which, because of performance weaknesses in the control room, are in error).
2. Before the player could confirm the indicated value with the control room, as required by his procedure, and before declaration, the controller injects, stating that the displayed value is in error and provides the correct value.
3. The player now properly classifies the emergency based on the indication as revised by the controller (and as expected by the scenario.) The revised emergency classification level is declared and notifications made.
4. The player has performed two correct classifications, one based on erroneous data from the control room, and one based on the inject information. In such a case, the classification opportunity should be considered a success.
5. There is, however, a performance weakness in the control room handling of data and relaying data to the TSC that needs to be critiqued and corrective action taken.

ATTACHMENT 2

ERO WEAKNESSES

Introduction

A weakness is defined as a level of ERO performance demonstrated during an exercise, drill, or training (that provide performance opportunities to develop, maintain, or demonstrate key skills) that would preclude effective implementation of the E-Plan (i.e., loss of a planning standard function) if the weakness were to occur during an actual emergency. Further:

1. A weakness identified by the licensee in its critique is not a performance deficiency and is, therefore, neither a failure to comply nor a failure to implement.
2. A deficient program element uncovered by the exercise and identified by the licensee in its critique is a licensee-identified performance deficiency and should be evaluated as a failure to comply. If identified by the inspector, the deficient program element is an NRC-identified performance deficiency and is evaluated as a failure to comply with the related planning standard.
3. A licensee's failure to identify a weakness in a critique or failure to take timely corrective actions, is a performance deficiency and is evaluated as a failure to comply with planning standard 10 CFR 50.47(b)(14).

Clarification

1. A mistake or a miss-step by ERO members that only detracts from the overall ERO performance should generally not be treated as a weakness. Mistakes are likely to happen in the course of an exercise and many are corrected by the ERO (e.g., peer checking), which should be viewed as an organizational strength. Failure to identify these mistakes as weaknesses in the critique is generally not an issue of concern.
2. Classifications, PARs, and notifications could be accurate and timely (i.e., DEP PI opportunity successes) and there still be a weakness (e.g., a correct classification based on misinformation, a correct PAR based on an incorrect dose assessment). Such weaknesses need to be identified and corrected since, under different circumstances, they could affect functions necessary for protecting the health and safety of the public.

ATTACHMENT 3

PRIORITIZATION OF ADDITIONAL AREAS FOR INSPECTION

General

In general, NRC oversight in EP is focused on adherence to the E-Plan with an emphasis on these most risk-significant areas, and inspection resources should be deployed in a manner to cover these areas. However, within the constraint of resources, a broad range of response areas should be inspected.

The inspector should use corrective action system data to identify response areas of concern and deploy inspection resources accordingly. Areas, (e.g., OSC, field monitor teams) that have had few critique findings or more than average (as compared to the TSC or EOF) findings should be selected for observation. Inspection resources usually deployed in the TSC, EOF, or Control Room may be used to observe other areas should the inspector identify a need.

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2. In order to facilitate review of critique related corrective actions, the inspector should request a corrective action system listing sorted for drill and exercise critique findings of the last 2-3 years. If possible, the findings should be sorted by response center.
3. The inspector should remain alert to the impact that the licensee's performance in less risk-significant areas (e.g., staffing, training, etc.) may have on the licensee's performance of the risk-significant areas.

Prioritization of Additional Areas for Inspection

Guidance for deployment of inspection resources beyond the most risk-significant areas is provided below. These areas may generally be considered in order of importance. Selection for deployment of inspection resources should be based on knowledge of the program, previous problems, and logistics.

1. Adequacy of worker protection including accountability, evacuation, exposure authorization and thyroid protection, including actions during a hostile action [10 CFR 50.47(b)(10) & (11) and Sections IV.E and IV.I of Appendix E to 10 CFR Part 50].
2. Adequacy of interface with offsite authorities (e.g., in the area of PAR communication and technical support). [10 CFR 50.47(b)(6) and Sections IV.A.7, IV.E.9, and IV.D of Appendix E to 10 CFR Part 50].

3. Adequacy of arrangements for offsite resources responding to an emergency, including hostile actions, at the licensee's site [10 CFR 50.47(b)(6) and Section IV.A.7 of Appendix E to 10 CFR Part 50.]
4. Ability to prioritize mitigation and assessment efforts to protect the public health and safety.
5. Command and control [10 CFR 50.47(b)(1)].
6. Ability to diagnose plant accident conditions, other than offsite consequences addressed in the risk-significant area discussion.
7. Ability to formulate mitigating actions.
8. Ability to implement mitigating actions (e.g., damage control teams) under accident conditions.
9. Adequacy of communications between licensee facilities [10 CFR 50.47(b)(6) and Section IV.E.9 of Appendix E to 10 CFR Part 50].
10. Accuracy and completeness of licensee-approved press releases [10 CFR 50.47(b)(7)].

ATTACHMENT 4

Revision History for IP 71114

| Commitment Tracking Number | Accession Number Issue Date Change Notice | Description of Change | Description of Training Required and Completion Date | Comment Resolution and Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
|----------------------------|---|---|--|--|
| N/A | 06/29/06 | Completed four-year historical CN search. Revised to reflect changes to the procedure attachments, add new procedure Attachment 07, simplify using acronyms, and add new references. | None | ML061580314 |
| | ML12100A241 05/29/12 CN 12-008 | Revised to reflect some aspects of the final EP rulemaking, add new procedure in Attachment 08, Increase priority ranking for evaluation of EP facilities and equipment, and clarify language regarding weaknesses. Added Inspection Requirement 02.05 to address 10 CFR 50, Appendix E, Section IV.F.2 (challenging drills and exercises) requirement for each licensee to conduct a hostile action exercise no later than December 31, 2015 and that the first eight-year exercise cycle will begin in the calendar year of the first hostile action exercise. Added new section title of "Inspection Resource Planning" to Inspection Guidance section. Added Attachments 1 and 2. | Provided at EP Face to Face counterpart meeting 09/09/11 | ML12095A250 |
| N/A | ML20351A226 04/02/21 CN 21-018 | Revised to only match current expectations for IP format. No changes to technical content were made, i.e., admin (formatting) changes only. | None | N/A |