

## APPENDIX B

### EMERGENCY PREPAREDNESS SIGNIFICANCE DETERMINATION PROCESS

#### 1.0 INTRODUCTION

The framework of the Emergency Preparedness (EP) Cornerstone is described in SECY-99-007, dated January 8, 1999, and SECY-99-007a, dated March 22, 1999. The Cornerstone Objective and Performance Expectation (repeated here for convenience) are the bases for the related inspection program and performance indicators:

- The Emergency Preparedness Cornerstone Objective is to “Ensure that the licensee is capable of implementing adequate measures to protect public health and safety in the event of a radiological emergency.”
- This Objective is supported by a Performance Expectation to “Demonstrate that reasonable assurance exists that the licensee can effectively implement its emergency plan to adequately protect public health and safety in the event of a radiological emergency.”

To meet the Cornerstone Objective and Performance Expectation, the staff of the U.S. Nuclear Regulatory Commission (NRC) assesses licensee performance in this cornerstone by considering the relationship of performance indicators (PIs) with regard to thresholds and the significance of inspection findings. The significance determination process (SDP) provides a method to place inspection findings in context for risk-significance in a manner that allows them to be combined with PI results. This information is used to determine the level of NRC engagement in accordance with (IAW) the Reactor Oversight Process Action Matrix (found in Inspection Manual Chapter 0305, “Operating Reactor Assessment Program”).

Inspection Manual Chapter 0612, “Power Reactor Inspection Reports” contains criteria for determining which inspection issues the staff should evaluate through the SDP. The EP SDP is structured such that any finding that enters the SDP will be at least green. The EP SDP is designed such that the significance of a finding reflects the impact on public health and safety, the potential impact on the public health and safety should an accident occur, or the impact on the efficacy of the licensee’s PI response band.

During the development of the EP Cornerstone, the most risk-significant EP PROGRAM ELEMENTS were identified as being distinct from other EP PROGRAM ELEMENTS. These development efforts were performed by a group of EP subject matter experts, including NRC staff and industry stakeholders, with input from members of the public. On that basis, the EP SDP methodology recognizes findings in the identified risk-significant elements as being more significant than findings in other PROGRAM ELEMENTS.

Title 10, Part 50, of the *Code of Federal Regulations* codifies a set of EP planning standards in 10 CFR 50.47(b) and supporting requirements in Appendix E to 10 CFR Part 50. The SDP logic identifies the LOSS OF PLANNING STANDARD FUNCTION as being more significant than noncompliance with administrative REGULATORY REQUIREMENTS. The risk-significant EP PROGRAM ELEMENTS are a subset of the EP PLANNING STANDARDS (PSs) and supporting requirements. A loss of function of the RISK-SIGNIFICANT PLANNING STANDARDS (RSPSs) results in a finding of greater significance than a loss of function of the other PLANNING STANDARDS (i.e., a yellow finding rather than a white finding). The stratification of the planning standards in 10 CFR 50.47(b) and the supporting requirements in Appendix E to 10 CFR Part 50 is as follows:

- RSPS 10 CFR 50.47(b)(4), (5), (9), and (10) and related sections of Appendix E to 10 CFR Part 50
- PS 10 CFR 50.47(b)(1), (2), (3), (6), (7), (8), (11), (12), (13), (14), (15), and (16) and related sections of Appendix E to 10 CFR Part 50
- other EP-related regulations, including various sections of Appendix E not identified in the specific PS sections; 10 CFR 50.54(q), 50.54(t), or 50.72; the Emergency Plan; and other regulatory commitments

While the EP SDP assigns a color-coded safety significance to findings, it should be understood that a green finding (very low safety significance) does not mean that the performance is acceptable. Such a finding may, in fact, represent a violation of a REGULATORY REQUIREMENT. The green determination simply means that the safety significance of the finding is very low and correction of the item is considered to be within the “licensee response band.”

## **2.0 DEFINITIONS AND GENERAL GUIDANCE**

The following terms, those listed in Section 2.1, and the guidance provided in Section 2.2 are essential to understanding of this appendix.

**PLANNING STANDARD (PS):** Any of the sixteen Emergency Preparedness Planning Standards defined in 10 CFR 50.47(b), including the RISK-SIGNIFICANT PLANNING STANDARDS and related sections of Appendix E to 10 CFR Part 50.

**RISK-SIGNIFICANT PLANNING STANDARD (RSPS):** Any of the following four Planning Standards defined in 10 CFR 50.47(b): 10 CFR 50.47(b)(4), (5), (9), or (10), including the related sections of Appendix E to 10 CFR Part 50.

## 2.1 Definitions

Note: Defined terms (listed in alphabetical order) are capitalized throughout the text of this appendix.

- (a) **CRITIQUE:** For the purposes of this SDP, all formal or documented assessments of a drill or exercise containing PI opportunities.
- (b) **CRITIQUE PROBLEM:** Indicates that a CRITIQUE did not identify a drill or exercise WEAKNESS. A finding in this area means that licensee evaluators failed to identify a WEAKNESS in a drill or exercise.
- (c) **DEGRADATION OF THE RSPS FUNCTION:** PROGRAM ELEMENTS are not adequate or are noncompliant, but the function of the RSPS, although degraded, is still met. It may be that (1) certain Plan commitments are not met, (2) the Plan is less than adequate, (3) implementing procedures are not effective, or (4) the program design is not fully adequate; however, if the PROGRAM ELEMENT is implemented as designed, it would meet the intended function of the RSPS. DEGRADATION OF THE RSPS FUNCTION has been incorporated into the EP SDP to allow an intermediate level of significance (i.e., a white finding rather than yellow) to be determined, where appropriate. Sections 4.4, 4.5, 4.9, and 4.10 of this Appendix present examples of DEGRADATION OF THE RSPS FUNCTION for each RSPS.
- (d) **FAILURE TO COMPLY:** A program is noncompliant with a REGULATORY REQUIREMENT.
- (e) **FAILURE TO IMPLEMENT:** FAILURE TO COMPLY with REGULATORY REQUIREMENTS during an actual event in which the failure precluded effective *implementation* of PROGRAM ELEMENTS. Most likely, the failure is a result of a performance problem. In this case, the PROGRAM ELEMENT is adequate as designed and, if implemented as designed, the program would meet the PS FUNCTION. However, a FAILURE TO IMPLEMENT is not always a result of a performance problem and may, in fact, reveal that a PROGRAM ELEMENT is not adequate. In this case, inspection is appropriate to determine whether there is a LOSS OF PS FUNCTION. Resulting issues would be assessed for significance IAW the criteria for a LOSS OF PS FUNCTION.
- (f) **FULL-SCALE DRILL OR EXERCISE:** Multiple Emergency Response Facilities (ERFs) participating or simulated with a team of evaluators. A FULL-SCALE DRILL OR EXERCISE is not limited to the evaluated biennial exercise.
- (g) **INSPECTION CYCLE:** The period of time between, and including, sequential biennial evaluated exercises.

- (h) **LOSS OF PLANNING STANDARD FUNCTION:** PROGRAM ELEMENTS are not adequate, not compliant with the PSs of 10 CFR 50.47(b), or otherwise not functional to such an extent that the function of the PS is not available for emergency response. It may be that the Plan commitments are not met or are inadequate, implementing procedures are inadequate, program design is inadequate, training is inadequate, etc. The result is that if the suspect PROGRAM ELEMENT was implemented as designed, or personnel are not capable of implementing the PROGRAM ELEMENT, the PS FUNCTION would not be met.
- (i) **PLANNING STANDARD FUNCTION:** Defined for each PS, the function does not restate the regulations, but rather identifies the significant function of the PS. All regulations must be complied with, but a LOSS OF PS FUNCTION may have greater significance than a failure to meet other REGULATORY REQUIREMENTS.
- (j) **PROGRAM ELEMENT:** Items that comprise the implementation aspects of a planning standard function. These items correspond to the criteria (e.g., contained in NUREG-0654/FEMA-REP-1 or the licensee's Emergency Plan) that provides specific acceptable methods for complying with the PLANNING STANDARDS of 10 CFR 50.47(b). Note that the failure of a single PROGRAM ELEMENT does not always constitute a LOSS OF PLANNING STANDARD FUNCTION.
- (k) **REGULATORY REQUIREMENT:** As used in this appendix, any EP-related requirement, including the PLANNING STANDARDS of 10 CFR 50.47(b), Appendix E to 10 CFR Part 50, the Emergency Plan, Commission Orders, and other commitments.
- (l) **TIME OF DISCOVERY:** The time the licensee "knew or should have known" of a problem. This could include some delay after raw data is collected (e.g., an analysis is necessary to realize that the problem exists). If an activity (e.g., a surveillance) should have identified the problem but did not, or the results of the activity were available but not acted upon, the licensee "should have known" about the problem. It should be assumed that the problem occurred at the time of its discovery (i.e., when the licensee "knew") unless there is firm evidence, based on a review of relevant information such as equipment history and the cause of the problem, to indicate that the problem existed before it was discovered (i.e., the licensee "should have known").
- (m) **WEAKNESS:** As applied to emergency preparedness, a WEAKNESS is a level of performance demonstrated during a drill or exercise that could have precluded effective implementation of the Emergency Plan in the event of an actual emergency. WEAKNESSES are not confined to performance problems that result in a LOSS OF PS FUNCTION. For example, an inaccurate or untimely classification, notification, or Protective Action Recommendation (PAR) development is a WEAKNESS associated with an RSPS (i.e., a Drill and Exercise Performance (DEP) PI opportunity failure). However, a WEAKNESS also exists if

a performance problem occurs associated with an accurate and/or timely classification, notification or PAR development that was anticipated by the scenario (i.e., a DEP PI successful opportunity). For instance, a correct classification may have been made based on misinformation, lack of information or invalid indicators. The NRC staff expects licensees to identify and critique this performance problem as a WEAKNESS associated with an RSPS. Thus, if the licensee's CRITIQUE fails to identify a performance problem associated with the process of classification, notification, or PAR development, even though it may have been determined to be a successful DEP PI opportunity per the scenario, the performance problem is a LOSS OF PS FUNCTION 10 CFR 50.47(b)(14). However, since it was a successful PI opportunity and did not affect the outcome of protecting the health and safety of the public, its significance warrants a green finding. Failure to correct a WEAKNESS should be analyzed against the compliance criteria in PLANNING STANDARD 10 CFR 50.47(b)(14) and the Emergency Plan. A failure to identify and/or correct a WEAKNESS associated with an RSPS FUNCTION represents a LOSS OF PS FUNCTION 10 CFR 50.47(b)(14) function for which Section 5.0 of this appendix provides guidance regarding the correction of WEAKNESSES. For purposes of this SDP, this includes a deficiency, as the term is used in PLANNING STANDARD 10CFR50.47(b)(14) and Section IV.F.2.g of Appendix E to 10 CFR Part 50.

## **2.2 Guidance**

- (a) The NRC Policy Statement on "Safety Goals for the Operations of Nuclear Power Plants," states that EP is a defense-in-depth measure. EP and many other elements of reactor safety (e.g., remote siting and containment) are implemented as a matter of prudence, rather than in response to a quantitative analysis of accident probabilities. Consequently, the probability of a reactor accident requiring implementation of a licensee's Emergency Plan has no relevance in determining the significance of an EP problem. Rather, in determining the significance of an EP problem, it is assumed that the licensee's Emergency Plan is being implemented in response to an emergency and the impact of the problem assessed against the licensee's ability to effectively implement adequate measures to protect the public health and safety.
- (b) The EP SDP has two distinct branches for "FAILURE TO COMPLY" (Sheet 1) and "Actual Event Implementation Problem" (Sheet 2). Findings should be assessed through both paths, where applicable, and the most significant finding issued. Additionally, some findings have multiple contributing issues, and the significance of each issue should be assessed. Parallel issues (i.e., more than one issue associated with a given finding), shall be noted in the inspection report, but only the most significant finding shall be issued. For example, an implementation problem during an actual event may also reveal a LOSS OF PS FUNCTION. If the LOSS OF PS FUNCTION is more significant, it would dictate the color of the finding. Alternatively, a FAILURE TO COMPLY with an RSPS may be accompanied by a

FAILURE TO COMPLY with a PS. Inclusion of all associated issues in the inspection report provides a complete record and is particularly important when additional information from the licensee causes the staff to reconsider its preliminary finding (e.g., the FAILURE TO COMPLY with the RSPS but not the FAILURE TO COMPLY with the PS in the above example).

- (c) Regulatory Guide (RG) 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," revision 3, states that the criteria and recommendations contained in Revision 1 of NUREG-0654/FEMA-REP-1 are considered to be acceptable methods for complying with the standards in 10 CFR 50.47 that must be met in onsite and offsite emergency response plans. Further, except in those cases in which the licensee proposes an acceptable alternative method for complying with specific portions of the Commission's regulations, the methods described in RG 1.101 (e.g., NUREG-0654, NUMARC/NESP-007) will be used in evaluating Emergency Plans.
- (d) LOSS OF PS FUNCTION constitutes noncompliance with the applicable regulation (e.g., 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50). However, the regulatory wording of the PS may not be exact, and the determination of a LOSS OF PS FUNCTION may not be obvious. The determination of a LOSS OF PS FUNCTION will be based on the criteria provided in this SDP.

There are many elements to a PS, and a program may be noncompliant with some and still be able to meet the PS FUNCTION. In this case, there may be a noncompliance with the Emergency Plan or an inappropriate change to the Plan may have removed commitments. Thus, the PS FUNCTION remains, but a noncompliance exists that should result in a finding.

- (e) NUREG 1600, "The Enforcement Policy," indicates that a failure to make reports required by NRC regulations constitutes a noncompliance that cannot be assessed through the SDP. Nonetheless, under the EP Cornerstone, failures to classify and notify are integral to the EP SDP and guidance is provided (e.g., a failure to activate ERDS or maintain an open, continuous communications channel with the NRC Operations Center upon request by the NRC during an actual event constitutes a FAILURE TO COMPLY with the requirements of 10 CFR 50.72 and should be considered a FAILURE TO IMPLEMENT under the EP SDP).

Findings that potentially impede the regulatory process (i.e., violations that impact the NRC's ability to oversee licensee's activities) are not to be evaluated through the SDP. Noncompliances may be significant because they may challenge the regulatory envelope within which certain activities were licensed. These types of violations include failures to receive prior NRC approval for changes that result in a decrease in effectiveness of the Plan (10 CFR 50.54(q) issues). Such violations are to be evaluated in accordance with the guidance in Section IV of the Enforcement Policy (traditional enforcement).

- (f) Time limits and percentages are provided in order to inject objectivity and thus consistency, when characterizing significance. It is expected that these values will be implemented for all applicable findings. However, it is understood that extenuating circumstances may require an evaluation of the predetermined value(s) upon the significance of the finding. In this rare case, a different characterization of the finding would be warranted so long as the basis for the deviation is justified and agreed to by the SERP.

### **3.0 ACTUAL EVENT IMPLEMENTATION PROBLEM**

#### **3.1 Background**

This branch of the SDP is used when a FAILURE TO COMPLY with REGULATORY REQUIREMENTS occurs during an actual event.<sup>1</sup> Performance problems exhibited during an actual event should be noted as opportunities to improve; however, they do not raise a regulatory issue unless they involve a FAILURE TO COMPLY.

As defined in Section 2.1 of this appendix, a FAILURE TO IMPLEMENT is a FAILURE TO COMPLY with REGULATORY REQUIREMENTS during an actual event in which the failure precluded effective implementation (only) of PROGRAM ELEMENTS. Generally, a FAILURE TO IMPLEMENT occurs as a result of a performance problem. In such instances, the PROGRAM ELEMENT is adequate as designed and, if implemented as designed, the Plan meets the PS FUNCTION.

A FAILURE TO IMPLEMENT is an item of noncompliance. It is important to note, however, that some performance problems that occur during an actual event may not rise to the level of a FAILURE TO IMPLEMENT (e.g., an Operations Support Center (OSC) team is not fully briefed and must return for tools, engineering efforts initially misdiagnose the accident sequence, miscommunication detracts from effectiveness, etc.).

However, a FAILURE TO IMPLEMENT is not always a result of a performance problem and may, in fact, reveal that a PROGRAM ELEMENT is not adequate. In this case, inspection is appropriate to determine whether there is a LOSS OF PS FUNCTION. Resulting issues would be assessed for significance IAW the criteria for a LOSS OF PS FUNCTION.

The definitions of “timely” and “accurate” for the DEP PI are not universally appropriate for determining whether an RSPS is implemented during an actual event. The performance expectation is that licensees will make classifications as soon as possible after indications are available that an EAL has been exceeded. A 15 minute goal is considered a reasonable period of time to assess and classify an emergency. EPOS No. 2, dated

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<sup>1</sup> Sheet 2 is used when determining the significance of an actual event implementation problem.

August 1, 1995, further clarifies the staff's position with regard to the timeliness of event classification. Similarly, licensees are required to initiate notifications within 15 minutes of classification. EAL classifications and notifications that take longer than 15 minutes should be examined and a determination rendered as to adequacy. Such determinations should recognize that there may be good reason for the delay and it may have minimal impact on the EP Cornerstone Objective. It is not the staff's intent to issue findings for classifications or notifications that take longer than 15 minutes when the delay occurred because the licensee was performing safety-related activities to protect the public health and safety. However, errors in recognition, delays not based on competing safety-related activities, or delays that deny offsite authorities the opportunity to protect the public health and safety should be assessed as a FAILURE TO IMPLEMENT the RSPS. Each event response must be assessed on a case-by-case basis.

Similarly, the definition of "accurate" for the DEP PI indicates the efficacy of PROGRAM ELEMENTS, such as training, drills, procedure quality, corrective actions, etc. During an actual event, an error on the notification form may have little or no impact on offsite agency response efforts, but would be considered a failure under the PI definition. The staff should evaluate the effects of such errors against the RSPS function to determine if the errors rise to the level of a FAILURE TO IMPLEMENT an RSPS.

### **3.2 Criteria**

The Plan was not implemented as appropriate for the declared emergency classification. This is generally determined by reviewing licensee performance during an actual event for compliance with regulations and Plan commitments.

### **3.3 Considerations**

Review the affected PS FUNCTION. If the poor performance had little impact on the affected PS FUNCTION, it may be appropriate to note the performance problem as an opportunity to improve (or perhaps a minor violation), rather than a FAILURE TO IMPLEMENT a PS.

## **4.0 FAILURE TO COMPLY**

As defined in Section 2.1 of this appendix, "FAILURE TO COMPLY" means that a program is noncompliant with a REGULATORY REQUIREMENT<sup>2</sup>. LOSS OF PS FUNCTION means that PROGRAM ELEMENTS are not adequate, not compliant with the planning standards of 10 CFR 50.47(b), or otherwise not functional to such an extent that the function of the PLANNING STANDARD is not available for emergency response. It may be that the Plan commitments are not met or are inadequate, implementing procedures are inadequate, program design is inadequate, training is inadequate, etc. The result is that

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<sup>2</sup> Sheet 1 is used when determining the significance of a FAILURE TO COMPLY.



if the suspect PROGRAM ELEMENT was implemented as designed, or personnel are not capable of implementing the PROGRAM ELEMENT, the PS FUNCTION would not be met. The PS FUNCTION is taken from 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. Compliance with all NRC requirements is necessary. However, the PS FUNCTION is identified for the purpose of determining the significance of a FAILURE TO COMPLY. Sections 4.1 through 4.16 provide examples of the LOSS OF PS FUNCTION for each of the 16 PLANNING STANDARDS defined in 10 CFR 50.47(b).

A LOSS OF PS FUNCTION is more significant than a FAILURE TO COMPLY with individual requirements associated with a given PLANNING STANDARD. The PLANNING STANDARDS often have several elements, and Appendix E to 10 CFR Part 50 contains supporting requirements that generally align with each PLANNING STANDARD. Those supporting requirements are cited within the guidance for each PLANNING STANDARD. However, PLANNING STANDARD functionality does not require compliance with every requirement. The failure of a program to comply with one or even a few of the associated requirements does not necessarily mean a LOSS OF PS FUNCTION. Consequently, the staff must determine whether the PS FUNCTION is met, even with the noncompliance. If the function is met, there is a FAILURE TO COMPLY without a LOSS OF PS FUNCTION.

A LOSS OF RSPS FUNCTION results in a yellow finding. However, there may be instances in which the RSPS FUNCTION is degraded, but not lost. These cases warrant a finding, but do not rise to the level of a yellow finding. Sections 4.4, 4.5, 4.9, and 4.10 provide examples for the degraded RSPS contingency under each RSPS, and these findings would be white. A FAILURE TO COMPLY that does not rise to the level of a degraded RSPS results in a green finding.

#### **4.1 10 CFR 50.47(b)(1)**

The PS FUNCTIONS are:

- Responsibility for emergency response is assigned.
- The response organization has the staff to respond and augment on a continuing basis (24-hour staffing) IAW the Plan.

Supporting requirements are found in Sections IV.A.1 – 8 of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.A of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- The organization assigned responsibilities in the Plan no longer has the authority, staff, or resources to respond on a continuing basis (24-hours).

Examples of a green finding include –

- An individual plant staffing change created an inability to assign responsibility on a continuous basis.

Examples that do not rise to the level of a finding include –

- A temporary plant staffing change created a lapse in a responsibility assignment for no longer than 24-hours.

#### **4.2 10 CFR 50.47(b)(2)**

The PS FUNCTIONS are:

- Process ensures that on-shift emergency response responsibilities are staffed and assigned.
- Process for timely augmentation of on-shift staff is established and maintained.

Supporting requirements are found in Sections IV.A.2.a, b, and c; IV.A.3 and IV.C of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.B of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- EP responsibilities for any key Emergency Response Organization (ERO) member function (per NEI 99-02) is not assigned.
- Scheduling and/or processes (not personnel error) for on-shift staffing allow 2 or more shifts to go below Plan minimum staffing requirements within 30 days (e.g., 2 of 4 weekends in a month, 2 or more backshifts over a 30-day period).
- Staffing augmentation processes are routinely not capable of ensuring timely augmentation of the on-shift emergency response staff to the extent that more than one required ERO function (IAW Plan commitments to NUREG-0654,

Table B-1), would not be filled. This example includes a large percentage of test failures and repeated demonstration of process design inadequacies.

- Changes to the facility organization have resulted in a staff that no longer meets applicable guidance of NUREG-0654 Table B-1, or an NRC approved alternative staffing level, or is not consistent with previously approved staffing to the extent that more than one required ERO function is not staffed.

Examples of a green finding include –

- Staffing processes permit a shift to go below Plan minimum staffing requirements, but there were no actual instances in which such shortages occurred.
- Failure to recognize loss of minimum ERO staffing for more than a short duration (e.g., 2 hours) on 2 or more shifts in a 30-day period.

Examples that do not rise to the level of a finding include –

- On-shift staffing does not comply with Plan commitments for a short period (e.g., 2 hours) while qualified personnel are being called in.
- An individual random occurrence of inadequate on-shift staffing occurred during the INSPECTION CYCLE.
- A lapse in ERO augmentation capability occurs for no longer than 24-hours, perhaps as a result of equipment failure or scheduling errors, for which compensatory measures or corrective actions are implemented.

#### **4.3 10 CFR 50.47(b)(3)**

The PS FUNCTIONS are:

- Arrangements for requesting and using offsite assistance have been made.
- State and local staff can be accommodated at the EOF IAW the Plan.

Supporting requirements are found in Sections IV.A.6 and IV.A.7 of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.C of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- Emergency Plan commitments for offsite assistance can no longer be met for medical, fire, or law enforcement support.
- The EOF has been changed in such a manner that it can no longer accommodate offsite authorities IAW the Plan.<sup>3</sup>

Examples of a green finding include –

- Agreements with organizations committed in the Plan as supporting the response effort have been allowed to lapse and is currently not being sought, but the agency remains willing to support the Plan.
- Plan elements have degraded to the point that Plan commitments for offsite assistance can no longer be met for support other than medical, fire, or law enforcement support.

Examples that do not rise to the level of a finding include:

- A Memorandum of Understanding (MOU) or Letter of Agreement has lapsed but is under revision, and there is a commitment for continuing support.

#### **4.4 10 CFR 50.47(b)(4)**

The RSPS FUNCTION is:

- A standard scheme of emergency classification and action levels is in use.

Supporting requirements are found in Sections IV.B and IV.C of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.D of NUREG-0654 and the licensee's Emergency Plan.

In RG 1.101, the NRC endorsed the criteria and recommendations contained in Revision 1 of NUREG-0654/FEMA-REP-1 and Revision 2 of NUMARC/NESP-007 (January 1992) as acceptable standard schemes of emergency classification. Additionally, the NRC has allowed certain modifications to the classification scheme as outlined in EPPOS-1, dated June 1, 1995.

As presented in Section 2.2.e of this appendix, EAL changes not approved by the NRC that result in a decrease in effectiveness of the Plan shall be processed in

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<sup>3</sup> Some Plans accommodate offsite authorities through means other than the physical presence of personnel in the EOF.

accordance with the guidance in Section IV of the Enforcement Policy (traditional enforcement).

Examples of LOSS OF RSPS FUNCTION (yellow finding) include –

- The EAL classification process would not declare more than two Alerts, or more than one Site Area Emergency, or any General Emergency that should be declared.
- Changes to facility procedures, systems, or equipment creates a condition such that an existing EAL would not be declared for more than two Alerts, or more than one Site Area Emergency, or any General Emergency that should be classified.

Examples of DEGRADATION OF THE RSPS FUNCTION (white finding) include –

- The EAL classification process would not declare more than one Alert, or any Site Area Emergency that should be declared.
- Changes to facility procedures, systems, or equipment creates a condition such that an existing EAL would not be declared for more than one Alert, or any Site Area Emergency.

Examples of a green finding include –

- The EAL classification process would not declare any Alert or Notification of Unusual Event that should be declared.
- Changes to facility procedures, systems, or equipment creates a condition such that an existing EAL would not be declared for any Alert or Notification of Unusual Event .
- Annual EAL review is not conducted with State and local governmental authorities.
- Non-editorial EAL changes are not discussed and agreed on by State and local governmental authorities prior to implementation.

Examples that do not rise to the level of a finding include –

- A typographical or minor error in an EAL, not affecting the declaration of the proper Emergency Class, is identified for correction.
- Editorial changes have been made, but do not change the intent of the EAL.

The following table summarizes the significance of an EAL classification finding:

	Yellow	White	Green
General Emergency	1 or more		
Site Area Emergency	2 or more	1	
Alert	3 or more	2	1
Unusual Event			Any

**4.5 10 CFR 50.47(b)(5)**

The RSPS FUNCTIONS are:

- Procedures for notification of State and local governmental agencies are capable of initiating notification within 15 minutes after declaration of an emergency.
- Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway.
- The public alert and notification system meets the design requirements of FEMA-REP-10 or is compliant with the FEMA approved Alert and Notification System (ANS) design report and supporting FEMA approval letter.

Supporting requirements are found in Sections IV.D.1 and IV.D.3 of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.E of NUREG-0654 and the licensee’s Emergency Plan.

Criteria are found in FEMA-REP-10. These criteria are integral to the RSPS FUNCTION.

Case law includes ASAB-935, Appeal of Seabrook ANS Issues; Atomic Safety and Licensing Board Panel (ASLBP) No. 82-472-03, Shearon Harris ANS issues; and ASAB-852, Appeal of Shearon Harris ANS issues. It may be noted that ASAB rulings set national precedent. ASLBP rulings do not, but the guidance therein can inform deliberations.

EPPOS No. 2, dated August 1, 1995, discusses the connection between the notification of offsite authorities and the timeliness of event classification.

Examples of LOSS OF RSPS FUNCTION (yellow finding) include –

- Procedures will not enable personnel to initiate offsite notifications within 15 minutes after declaring an emergency.
- Communications systems will not enable personnel to initiate offsite notifications within 15 minutes after declaring an emergency.
- The public alert and notification system (e.g., sirens, other supporting primary notification methods) has design flaws or deficiencies in the test program, maintenance program, or procedures that result in a major loss of the system for a significant period from the TIME OF DISCOVERY (e.g., 100% over 35 days, greater than 80% over 45 days, greater than 40% over 90 days, greater than 20% over 6 months).

Examples of DEGRADATION OF THE RSPS FUNCTION (white finding) include –

- The public alert and notification system (e.g., sirens, other supporting primary notification methods) has design flaws or deficiencies in the test program, maintenance program, or procedures that degrade a portion of the system for a significant period from the TIME OF DISCOVERY (e.g., 100% over 25 days, greater than 48% over 45 days, greater than 24% over 90 days, greater than 12% over 6 months).
- Loss of the capability to notify 100% of the population in the plume exposure pathway Emergency Planning Zone (EPZ) through the primary alert notification system and/or sirens, and compensatory measures (e.g., backup route alerting) take longer than 45 minutes.
- Loss of the capability to determine whether the primary alert notification system activated (e.g., siren feedback system failure), and compensatory measures (e.g., backup route alerting) take longer than 45 minutes.

Examples of a green finding include –

- An individual siren has not been available for a continuous period of greater than 4 months with inadequate and/or delayed corrective actions.<sup>4</sup>

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<sup>4</sup> This finding is not necessary if the ANS PI has fallen below the green band threshold during the period under consideration.

- An individual siren has been available less than 70% of the time over a period of 12 months as a result of inadequate and/or delayed corrective actions.<sup>4</sup>

Examples that do not rise to the level of a finding include –

- An individual siren has been available for more than 70% of the time over a period of 12 months during which the ANS PI has been within the green band and compensatory measures (e.g., backup route alerting) have been in place.

#### **4.6 10 CFR 50.47(b)(6)**

The PS FUNCTIONS are:

- Systems are established for prompt communication among principal emergency response organizations.
- Systems are established for prompt communication to emergency response personnel.

Supporting requirements are found in Section IV.E.9 of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.F of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- Communications systems have degraded such that no communications channel between any two key ERO members (IAW NEI 99-02) is available in the Technical Support Center (TSC), Emergency Operations Facility (EOF), or Control Room, for longer than 24 hours from the TIME OF DISCOVERY without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power) or planned outages, compensatory measures are acceptable while repair activities proceed with high priority.
- Loss of communications capability, for longer than 7 days from the TIME OF DISCOVERY such that no communications channel between any key ERO member (IAW NEI 99-02) and any individual, group, or organization with whom that key ERO member is expected to interface with (e.g., field monitoring team, emergency news facility, OSC, or damage control team) without compensatory measures. In the event of major disruptive events



(e.g., hurricane, fire, explosion, loss of power, etc.) or planned outages, compensatory measures are acceptable while repair activities proceed with high priority.

- Backup power supplies for at least one onsite and one offsite communications systems, as required by Appendix E to 10 CFR Part 50, are not functional for more than 30 days from the TIME OF DISCOVERY, in the absence of compensatory measures.

Examples of a green finding include –

- Communications equipment for key ERO members (IAW NEI 99-02) in an emergency facility is degraded (e.g., many phones) at the TIME OF DISCOVERY without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outages, compensatory measures are acceptable while repair activities proceed with high priority.
- Backup power supplies for at least one onsite and one offsite communications systems, as required by Appendix E to 10 CFR Part 50, are not functional for more than 3 days from the TIME OF DISCOVERY, in the absence of compensatory measures.

Examples that do not rise to the level of a finding include –

- A few phones are out of service in any emergency center.
- Communications equipment is significantly degraded (e.g., many phones and more than two circuits) in any emergency center, such that implementation of the Plan would be impacted for a short time (e.g., less than a day) before repair and compensatory measures are implemented.

#### **4.7 10 CFR 50.47(b)(7)**

The PS FUNCTIONS are:

- EP information is made available to the public on a periodic basis within the plume exposure pathway EPZ.
- Coordinated dissemination of public information during emergencies is established.

Supporting requirements are found in Section IV.D.2 of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.G of NUREG-0654, NUREG-0696, and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- Processes do not provide for the complete dissemination of EP-related public information such that the licensee does not provide information to all transient areas, EPZ segments, or other specialized/localized groups (e.g., hotels, recreational parks, select phone books, zip codes).
- EP-related public information documents do not contain the required information (e.g., how the public will be notified, what their actions should be, and principal points of contact for information during an emergency).
- Locations routinely visited by the public or worker locations within the licensee's owner-controlled area do not receive appropriate EP-related public information to which the licensee committed in the Plan or in the absence of Plan commitment, Federal regulation (Section IV.D.2 of Appendix E to 10 CFR Part 50).<sup>5</sup>
- The lack of coordination for the dissemination of information during emergencies will not allow timely and accurate information releases to such an extent that the health and safety of the public would be compromised during emergencies (e.g., the ERO members are not knowledgeable with regard to emergency news center operations, procedures for disseminating information are not established, augmentation (call-out) processes will not ensure timely activation of emergency news center, or untimely methods for information approval).
- Coordination of news briefings is lacking on the part of the licensee to such an extent that the health and safety of the public would be compromised during emergencies (e.g., information is inaccurate, contradictory, and/or delayed).

Examples of a green finding include –

- EP-related public information has not been disseminated for a period longer than that to which the licensee committed in the Plan or, in the absence of Plan commitment, Federal regulation (Section IV.D.2 of Appendix E to 10 CFR part 50).

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<sup>5</sup> For some locations, signs, and the like, may be appropriate for disseminating public information.

- Processes and/or procedures for disseminating information to the public are not maintained, such that significant elements of the public information process are degraded (e.g., contact lists are not effective, approval process cannot be implemented because of organizational changes, news releases are untimely, licensee news briefings are not coordinated with offsite agencies, etc.).
- Locations routinely visited by the public or worker locations within the licensee's owner-controlled area do not receive EP-related public information for a period longer than that to which the licensee committed in the Plan or, in the absence of Plan commitment, Federal regulation (Section IV.D.2 of Appendix E to 10 CFR part 50).<sup>6</sup>
- The joint information center does not issue a news release during an Unusual Event or Alert declaration IAW Plan commitments.

Examples that do not rise to the level of a finding include –

- In an isolated instance, inaccurate, contradictory, or delayed information is released to the public; however, it is corrected in a subsequent news release.
- Documentation of the dissemination of EP-related public information documents is incomplete.
- There is confusion on the part of the news media as to where to assemble for briefings.

#### **4.8 10 CFR 50.47(b)(8)**

The PS FUNCTIONS are:

- Adequate facilities are maintained to support emergency response.
- Adequate equipment is maintained to support emergency response.

Supporting requirements are found in Sections IV.E.1–4, IV.E.8 and IV.G of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.G of NUREG-0654, NUREG-0696, and the licensee's Emergency Plan.

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<sup>6</sup> For some locations, signs, and the like, may be appropriate for disseminating public information.

Examples of LOSS OF PS FUNCTION (white finding) include –

- The OSC, TSC, or EOF is not functional for a period of longer than 7 days from the TIME OF DISCOVERY, to the extent that any key ERO member (IAW NEI 99-02) could not perform his/her assigned Plan functions, in the absence of compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outages, compensatory measures are acceptable while repair activities proceed with high priority.
- The backup or alternate EOF is not functional (or capable of being activated IAW the Emergency Plan) for a period of longer than 30 days from the TIME OF DISCOVERY, without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outages, compensatory measures are acceptable while repair activities proceed with high priority.
- Equipment necessary to implement the Plan is not available or not functional, to the extent that any key ERO member (IAW NEI 99-02) could not perform his/her assigned functions, for a period of longer than 7 days from the TIME OF DISCOVERY, without compensatory measures (e.g., lack of damage control equipment would prevent the OSC Manager from performing functions, lack of engineering documents would prevent TSC Technical Support from performing function). The availability of additional onsite equipment, in a reasonably timely manner, is considered to be a compensatory measure for the PS FUNCTION.

Examples of a green finding include –

- A significant amount of equipment necessary to implement the Plan is not available or functional to the extent that any key ERO member (IAW NEI 99-02) could not perform his/her assigned functions, in the absence of compensatory measures.
- The backup or alternate EOF is not functional (or capable of being activated IAW the Emergency Plan) for a period of longer than 7 days from the TIME OF DISCOVERY, without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outages, compensatory measures are acceptable while repair activities proceed with high priority.
- Changes have been made to the OSC, TSC, or EOF that do not comply with the Plan, but the facilities remain functional.

- The OSC, TSC, or EOF is not functional for a period of longer than 24 hours from the TIME OF DISCOVERY, to the extent that any key ERO member (IAW NEI 99-02) could not perform his/her assigned Plan functions, in the absence of compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outages, compensatory measures are acceptable while repair activities proceed with high priority.

Examples that do not rise to the level of a finding include –

- A few items of equipment or instrumentation to which the licensee committed in the Plan are missing or out of calibration, but replacement equipment or instrumentation is available onsite.
- Storage or transient items are found in an ERF, but responders are still able to activate the facility and perform assigned functions.

#### **4.9 10 CFR 50.47(b)(9)**

The RSPS FUNCTION is:

- Methods, systems and equipment for assessment of radioactive releases are in use.

Supporting requirements are found in Sections IV.B and IV.E.2 of Appendix E. to 10 CFR Part 50.

Informing criteria are found in Section II.I of NUREG-0654 and the licensee's Emergency Plan.

Examples of loss of RSPS FUNCTION (yellow finding) include –

- Methods are inadequate (e.g., do not conform with RG 1.3 or 1.4 or are not technically justifiable) to estimate the source term and/or project offsite doses resulting from a radioactive release.
- Equipment or systems necessary for dose projection are not functional for longer than 24 hours from the TIME OF DISCOVERY, to the extent that the licensee has no capability for immediate dose projection.
- Changes have been made to dose projection systems (e.g., software) that result in loss of all dose assessment capability through failure of software, significant systematic errors (i.e., not attributable to normal uncertainty in the process), or loss of input parameter capability (e.g., meteorological input is

erroneous), and the condition exists for more than 24 hours from the TIME OF DISCOVERY, without compensatory measures.

Examples of a DEGRADATION OF THE RSPS FUNCTION (white finding) include –

- The field monitoring function (at least dose rate measurement and iodine presence determination) is unavailable for more than 72 hours from the TIME OF DISCOVERY without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outage, compensatory measures are acceptable while repair activities proceed with high priority.
- Equipment or systems necessary for dose projection are not functional for longer than 24 hours from the TIME OF DISCOVERY, to the extent that the licensee has no capability for immediate dose projection in facility emergency response centers as committed to in the Plan.

Examples of a green finding include –

- Equipment or systems necessary for dose projection are not functional for longer than 24 hours from the TIME OF DISCOVERY without compensatory measures, or corrective actions are inadequate or delayed.
- The field monitoring function IAW the Plan is unavailable for more than 72 hours from the TIME OF DISCOVERY, without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outage, compensatory measures are acceptable while repair activities proceed with high priority.

Examples that do not rise to the level of a finding include –

- Dose projection equipment/systems or field monitoring capability is not functional as committed in the Plan, for a period less than 24 or 72 hours from the TIME OF DISCOVERY, respectively.

#### **4.10 10 CFR 50.47(b)(10)**

This PLANNING STANDARD has two aspects that are of differing risk-significance. The development of protective action recommendations (PARs) is integral to protection of public health and safety and is considered to be an RSPS. However, this PLANNING STANDARD also addresses emergency workers. While the protection of emergency workers is very important, it is not as significant as the protection of public health and safety due to an emergency worker's training and experience with regard to radiological issues. Thus, the emergency worker protection portion is assessed significance as a PS, rather than an RSPS.

The RSPS FUNCTION is:

- A range of public protective action recommendations (PARs) is available for implementation during emergencies.

There are no supporting requirements in Appendix E to 10 CFR Part 50.

Informing criteria are found in Sections II.J.1–4, II.J.7–8, and II.J.10 of NUREG-0654 as well as Supplement 3 to NUREG-0654 and the licensee's Emergency Plan.

Examples of loss of RSPS FUNCTION (yellow finding) include –

- The process does not provide PARs that are IAW Plan commitments or Federal guidance, to the extent that in a general emergency, appropriate PARs would not be issued to cover affected populated areas within 5 miles of the site.
- The process does not adequately address the owner-controlled area (refer to NRC Information Notice 2002-14), to the extent that procedures, equipment, and/or personnel are not capable of timely evacuation and processing of members of the public who might be present.

Examples of DEGRADATION OF THE RSPS FUNCTION (white finding) include –

- The process does not provide PARs that are IAW Plan commitments or Federal guidance, to the extent that in a general emergency, appropriate PARs would not be issued to cover affected populated areas within 5 to 10 miles of the site.
- The process does not adequately address the owner-controlled area (refer to NRC Information Notice 2002-14), to the extent that procedures, equipment, and/or personnel would not consistently provide assurance of timely evacuation and processing of members of the public who might be present.

Examples of a green finding include –

- The process does not provide PARs that are IAW Plan commitments or Federal guidance, to the extent that in a general emergency, appropriate PARs would not be issued to cover affected populated areas beyond the plume exposure pathway EPZ, should they be necessary.

Examples that do not rise to the level of a finding include:

- Population distribution maps (not used for decision making) are not updated to reflect the latest census data.

The PS FUNCTION is:

- A range of protective actions is available for emergency workers during emergencies.

There are no supporting requirements in Appendix E to 10 CFR Part 50.

Informing criteria are found in Sections II.J.2–6 of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- The accountability process is flawed (as determined by a review), to the extent that it can not ensure that onsite accountability is achieved and maintained during an emergency.<sup>7</sup>
- A significant fraction (e.g., greater than 25%) of the onsite notification system (e.g., plant page speakers) is out of service in occupied areas that would need to be evacuated during an emergency, without compensatory measures, for longer than 7 days from the TIME OF DISCOVERY.
- Onsite respiratory protective equipment is degraded, or personnel are not qualified to use it, to the extent that the minimum complement of control room operators could not be protected for at least 4 hours (if needed) from the TIME OF DISCOVERY, without compensatory measures.
- The site evacuation process is flawed (as determined by a review), to the extent that it cannot be accomplished during an emergency.<sup>7</sup>

Examples of a green finding include –

- A fraction (e.g., greater than 10%) of the onsite notification system (e.g., plant page speakers) is out of service in occupied areas that would need to be evacuated during an emergency, without compensatory measures for longer than 24 hours from the TIME OF DISCOVERY.
- Onsite respiratory protective equipment is not maintained IAW regulations and/or Plan commitments.
- Emergency workers who are required to use respiratory protective equipment are not qualified and/or trained to use that equipment.

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<sup>7</sup> Missing a timeliness goal or poor performance during a drill may indicate a problem for review, but in itself is not sufficient to establish a LOSS OF PS FUNCTION



Examples that do not rise to the level of a finding include –

- Plant page speakers are out of service in a few (e.g., less than 10%) occupied areas for less than 90 days.

#### **4.11 10 CFR 50.47(b)(11)**

The PS FUNCTION is:

- The means for controlling radiological exposures for emergency workers are established.

Supporting requirements are found in Section IV.E.1 of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.K of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include:

- Radiological control equipment or instrumentation, that is necessary to control emergency workers' exposure is not available (e.g., out of service or calibration), to the extent that emergency work necessary to protect the health and safety of the public cannot be performed during emergencies. The availability of additional equipment, on-site, in a reasonably timely manner is considered to be a compensatory measure for the PS FUNCTION.
- Processes for controlling exposures during emergencies will not ensure that exposures are maintained IAW Plan commitments.

Examples of a green finding include:

- Radiological control equipment or instrumentation, that is necessary to control emergency workers' exposure is not available, to the extent that emergency work necessary to protect the health and safety of the public is impaired during emergencies. The availability of additional equipment, on-site, in a reasonably timely manner is considered to be a compensatory measure for the PS FUNCTION.

Examples that do not rise to the level of a finding include –

- A few items of equipment or instrumentation to which the licensee committed in the Plan are missing or out of calibration, but replacement equipment or

instrumentation is available at the storage location or on-site with reasonably rapid accessibility.

#### **4.12 10 CFR 50.47(b)(12)**

The PS FUNCTION is:

- Arrangements are made for medical services for contaminated, injured individuals.

Supporting requirements are found in Sections IV.E.5–7 of Appendix E to 10 CFR Part 50

Informing criteria are found in Section II.L of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- No agreement exists with any qualified and properly equipped hospital or ambulance service for the care of contaminated, injured individuals.

Examples of a green finding include:

- An agreement for medical support with an organization has been allowed to lapse, but the organization remains willing to support the Plan.

Examples that do not rise to the level of a finding include –

- An MOU or Letter of Agreement has lapsed but is under revision and there is a commitment for continuing support.

#### **4.13 10 CFR 50.47(b)(13)**

The PS FUNCTION is:

- Plans for recovery and reentry are developed.

There are no supporting requirements in Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.M of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

Because of the non-emergency nature of recovery efforts, no LOSS OF PS FUNCTION would be assigned for failures in this area (i.e., any FAILURE TO COMPLY would not exceed a green finding).

Examples of a green finding include –

- Recovery efforts are not preplanned.
- The recovery process is not exercised within a six year period.

Examples that do not rise to the level of a finding include:

- None

#### **4.14 10 CFR 50.47(b)(14)**

##### **4.14.1 PS FUNCTIONS and Examples of findings**

The PS FUNCTIONS are:

- A drill and exercise program (including radiological, medical, Health Physics, etc.) is established.
- Full-scale drills and exercises are assessed via a formal CRITIQUE process in order to identify WEAKNESSES associated with an RSPS.
- Identified RSPS WEAKNESSES are corrected.

Supporting requirements are found in Sections IV.F.1–2 of Appendix E to 10 CFR Part 50

Informing criteria are found in Section II.N of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- More than two drills and/or exercises (excluding the biennial exercise) during the INSPECTION CYCLE (e.g., radiological, medical, HP, etc.) have not been conducted IAW the Plan.
- A biennial exercise is not conducted during a 2-year (calendar) period without receiving an exemption.
- Biennial exercises are not sufficiently varied to ensure that all RSPS PROGRAM ELEMENTS are tested within a 6-year period.

- The drill and exercise CRITIQUE process does not properly identify a WEAKNESS associated with an RSPS that is determined to be a DEP PI opportunity failure during a FULL-SCALE DRILL OR EXERCISE. (See Section 4.14.2, Guidance on Drill and Exercise Critique Problems)
- Formal CRITIQUES are not conducted for more than two scheduled drills and/or exercises during the INSPECTION CYCLE.
- The licensee failed to correct an RSPS WEAKNESS. (See Section 5.0, Corrective Actions)

Examples of a green finding include –

- A drill has not been conducted during the INSPECTION CYCLE IAW the Plan.
- The biennial exercise is not technically accurate and/or challenging, to the extent that it does not adequately test the plans, procedures, equipment, and implementation of the licensee's emergency response capabilities.
- Biennial exercises are not sufficiently varied to ensure that all PS PROGRAM ELEMENTS are tested within a 6-year period.
- The drill and exercise CRITIQUE process does not identify a WEAKNESS associated with a non-RSPS during a FULL-SCALE DRILL OR EXERCISE or any PS WEAKNESS during a limited facility interaction drill where there is a limited team of evaluators (e.g., facility table-top training drill, operator training simulator drill, individual facility training drill). (See Section 4.14.2, Guidance on Drill and Exercise Critique Problems)
- The drill and exercise critique process does not identify a WEAKNESS as a result of a performance problem associated with a RSPS that is determined as a DEP PI successful opportunity, during a FULL SCALE DRILL OR EXERCISE. (See Section 4.14.2, Guidance on Drill and Exercise Critique Problems)
- The drill and exercise critique process does not properly identify a WEAKNESS resulting from a performance problem associated with RSPS 10 CFR 50.47(b)(9).
- The licensee failed to correct a non-RSPS WEAKNESS. (See Section 5.0, Corrective Actions)

Note: Section IV.F.2.g of Appendix E to 10 CFR Part 50 requires licensees to identify and correct WEAKNESSES. The identification and correction of WEAKNESSES is fundamentally important to the EP Cornerstone Objective (guidance for the correction of WEAKNESSES is provided in Section 5.0). A failure of a CRITIQUE to identify a WEAKNESS is a finding with a corresponding violation or non-cited violation of this planning standard and Section IV.F.2.g of Appendix E to 10 CFR Part 50.<sup>8</sup>

Examples that do not rise to the level of a finding include –

- A drill is rescheduled or cancelled, but the program remains compliant with the Plan.
- A drill or exercise has not been conducted IAW the Plan as a result of extenuating circumstances that the licensee has self-identified and appropriately rescheduled with NRC approval.

#### **4.14.2 Guidance on Drill or Exercise Critique Problem**

##### 4.14.2.1 Background

This section provides guidance regarding issues that inspectors may identify through the baseline program inspection of licensee drills and exercises. Inspection Procedures 71114.01 and 71114.06 instruct inspectors to observe drills and exercises, and identify WEAKNESSES (i.e., a demonstrated level of performance that could preclude effective implementation of the Emergency Plan in an actual emergency). A CRITIQUE PROBLEM occurs when the licensee fails to identify the WEAKNESS(ES) observed by the inspector.

The SDP stratifies the significance of a failure to CRITIQUE a WEAKNESS as either white or green, as follows:

- A CRITIQUE that fails to identify a WEAKNESS associated with an RSPS that is determined to be a DEP PI opportunity failure during a FULL-SCALE DRILL OR EXERCISE, where there are multiple ERFs (more than one) participating and a team of evaluators, represents a LOSS OF PS FUNCTION and is potentially a white finding.
- A CRITIQUE that fails to identify a WEAKNESS resulting from a performance problem, associated with an RSPS that is determined to be a DEP successful opportunity, during a FULL-SCALE DRILL OR EXERCISE is potentially a green finding.

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<sup>8</sup> Refer to Sections IV.A.5 and VI.A.1 of NUREG-1600.

- A CRITIQUE that fails to identify a non-RSPS WEAKNESS during a FULL-SCALE DRILL OR EXERCISE is potentially a green finding.
- A CRITIQUE that fails to identify any PS WEAKNESS during a limited facility interaction drill where there is a limited team of evaluators (e.g., facility table-top training drill, operator training simulator drill, individual facility training drill) is potentially a green finding.

The EP Cornerstone licensee response band is established by the PI system and the licensee's corrective action program. Data for the DEP and ERO PI values come from drill and exercise CRITIQUES. If the CRITIQUE program does not identify performance problems, the EP licensee response band comes into question. The white finding for a single failure to identify a WEAKNESS associated with an RSPS during a FULL-SCALE DRILL OR EXERCISE is a high standard based on the NRC's need to ensure the efficacy of the licensee's CRITIQUE program and, hence, the licensee response band.

RSPS performance problems should be given the highest priority in the CRITIQUE process. The baseline inspection program is based on accurate PI data to properly reflect licensee performance. The DEP PI is based on the licensee's ability to determine whether a PI opportunity is successful or not. Thus, a licensee's ability to observe, evaluate, and CRITIQUE a WEAKNESS associated with an RSPS is critical.

If the licensee's CRITIQUE fails to identify an inaccurate or untimely classification, notification, or PAR development (i.e., a DEP PI opportunity failure), it is considered a LOSS OF PS FUNCTION (white finding). This is because the licensee's capability to observe and evaluate the process associated with an RSPS is questionable. However, a WEAKNESS also exists if a performance problem occurs in connection with a correct and/or timely classification, notification, or PAR development that was anticipated by the scenario (i.e., a DEP PI successful opportunity). For instance, a correct classification may have been made based on misinformation, lack of information, or invalid indicators. This performance problem should be identified and critiqued as an RSPS WEAKNESS. Thus, if the licensee's CRITIQUE fails to identify a performance problem associated with the process of classification, notification, or PAR development effort, even though it may be determined to be a successful DEP PI opportunity per the scenario, it is to be considered a LOSS OF PS FUNCTION 10 CFR 50.47(b)(14). However, since it was a successful PI opportunity and did not affect the outcome of protecting the health and safety of the public, it is of green significance. The overall expectation is that the licensee's CRITIQUE will emphasize evaluation of performance in the RSPS areas.

Licensees perform CRITIQUES in many different ways and the baseline inspection instructs inspectors to be flexible in accepting mechanisms for problem identification. The critical feature of any CRITIQUE is that a WEAKNESS is captured and entered into a corrective action system with appropriate priority. If the inspector can be assured that the WEAKNESS will be entered into a corrective action system, prior to disclosing a finding, the CRITIQUE should be considered successful.

The disposition of CRITIQUE findings also varies among sites. The licensee must evaluate numerous evaluator observations and prioritize resources for correction. Indeed, some evaluator suggestions may be counterproductive, as determined by responsible EP management. Care should be taken to understand the logic underlying the suggested disposition before identifying it as a CRITIQUE PROBLEM. However, a licensee's disregard for well-founded evaluator-identified WEAKNESSES should be considered to be a CRITIQUE PROBLEM (e.g., if the WEAKNESS would have been a FAILURE TO IMPLEMENT in an actual event, the NRC expects the licensee to capture the WEAKNESS in the CRITIQUE and enter it into a corrective action program).

The Plan contains the licensee's commitments to NRC regulations. The implementing procedures are the licensee's methods of implementing those commitments and may be used to judge effective, timely, and accurate implementation. If either the Plan or the procedures are inadequate, it is not a drill/exercise CRITIQUE issue. Rather, it is a FAILURE TO COMPLY with a PS, and the applicable PS found in this section should be used to assess significance. Licensee mistakes and mis-steps that only detract from implementation should not initially be considered WEAKNESSES. Mistakes are likely to happen in the course of an exercise, and when such mistakes are corrected by the ERO, it reveals an organizational strength rather than a WEAKNESS.

The RSPSs include 10 CFR 50.47(b)(9) and it is covered by the DEP PI in an indirect manner (i.e., classification and PARs may be based on dose projections). The NRC expects the licensee's CRITIQUE to emphasize evaluation of performance in the RSPS areas, and associated WEAKNESSES should be identified and corrected.

#### 4.14.2.2 Criteria

A licensee's CRITIQUE of a drill or exercise failed to identify a WEAKNESS observed by NRC inspectors.

#### 4.14.2.3 Considerations

The WEAKNESS that was missed by the CRITIQUE must be a demonstrated level of performance that could preclude effective implementation of the Emergency Plan in an actual emergency. Some mis-steps in performance may not rise to the level of a WEAKNESS and/or were corrected by the subsequent actions of the ERO.

CRITIQUE processes differ among licensees, and a licensee should be given credit if the WEAKNESS was entered into a corrective action process, regardless of whether the WEAKNESS was verbalized at a CRITIQUE meeting.

#### **4.15 10 CFR 50.47(b)(15)**

The PS FUNCTION is:

- Training is provided to emergency responders.

Supporting requirements are found in Section IV.F.1 of Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.O of NUREG-0654 and the licensee's Emergency Plan.

Examples of LOSS OF PS FUNCTION (white finding) include –

- Emergency response personnel are not available (e.g., lapsed training) to provide continuous coverage (24 hours) for a key ERO function (as defined by NEI 99-02).<sup>9</sup>

Examples of a green finding include –

- Emergency response personnel are not available (e.g., lapsed training) to provide continuous coverage (24 hours) for any ERO position listed in the licensee's Emergency Plan.<sup>8</sup>
- Unqualified personnel (e.g., lapsed training) are maintained on the ERO duty roster and are relied upon to respond during an emergency.

Examples that do not rise to the level of a finding include –

- Personnel have not received required EP training, but other qualified personnel have been assigned to staff the affected positions.

#### **4.16 10 CFR 50.47(b)(16)**

The PS FUNCTION is:

- Responsibility for Plan development and review is established.

There are no supporting requirements in Appendix E to 10 CFR Part 50.

Informing criteria are found in Section II.P of NUREG-0654 and the licensee's Emergency Plan.

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<sup>9</sup> If personnel have been removed from EP duty, their training qualifications are not a regulatory concern.



Examples of LOSS OF PS FUNCTION (white finding) include –

Because of the non-emergency nature of Plan development efforts, no LOSS OF PS FUNCTION would be assigned for failures in this area (i.e., any FAILURE TO COMPLY would not exceed a green finding).

- None

Examples of a green finding include –

- Responsibilities for Plan development are not established.

Examples that do not rise to the level of a finding include –

- None

## **5.0 CORRECTIVE ACTIONS**

### **5.1 Introduction**

The EP Cornerstone of the NRC Reactor Oversight Process is based on the licensee response band established by the PI program and the licensee's problem identification and resolution (PI&R) program. As it relates to emergency preparedness, PI&R encompasses the drill and exercise CRITIQUE program, CRITIQUE of actual events and other assessment activities (such as QA audits and reviews performed IAW 10 CFR 50.54(t)), as well as the corrective action program. The EP Baseline Inspection Program provides oversight of a licensee's efforts to CRITIQUE drills and exercises and correct WEAKNESSES. NRC regulations in 10 CFR 50.47(b)(14) and Section IV.F.2.g of Appendix E to 10 CFR Part 50 require licensees to formally CRITIQUE their drills and exercises to identify and correct any WEAKNESS(ES).

The EP Cornerstone is designed to foster drill and exercise programs that develop and maintain emergency response organization skills. It is the nature of a drill program that performance errors will occur and equipment, facility and procedure problems (WEAKNESSES) will surface. The identification and correction of these WEAKNESSES is a positive and vital aspect of the program. The Drill and Exercise Performance (DEP) PI provides a 90% success threshold for the licensee response band. This implies that a level of performance error (in drills and exercises) is acceptable and that correction of the causes of the performance error is within the licensee response band. The regulations require licensees to correct any WEAKNESS(ES) identified during training, drills and exercises.

## 5.2 Timeliness

This section provides guidance regarding the timeliness of a licensee's correction of identified WEAKNESSES. However, this guidance should not be interpreted as a requirement. Rather, this guidance delineates when it is appropriate for an inspector to review the timeliness of a licensee's corrective action efforts.

The licensee determines the safety-significance of WEAKNESSES and sets priorities IAW commitments and corrective action programs. The NRC staff assesses the appropriateness of those priorities in the context of the problem. The timeliness guidance may be used as a limit for inspector involvement (e.g., if the WEAKNESS is corrected in a shorter time than that suggested in the guidance, the inspector probably does not need to review the basis for the timeliness of corrective actions).

Root cause analyses, common cause analyses, and the like may take 60 days, or longer in some cases, to complete. While immediate corrective actions, such as briefings or lessons-learned summaries may be implemented rapidly, they may not represent actual correction of the WEAKNESS. The NRC expects the licensee will resolve problems in a manner that is appropriate to the risk-significance. While that will often be accomplished in less time than suggested below, there may be times when a licensee *should* take more time. When the time is longer than that prescribed by the timeliness guidance, the inspector should review the scheduling rationale for reasonableness and any potential to impact public health and safety. Should a corrective action be scheduled in a manner that is not reasonable or potentially impacts public health and safety (in that the Plan can not be implemented effectively), a finding may be appropriate for FAILURE TO COMPLY with PS 10 CFR 50.47(b)(14).

The following guidance is to be used when assessing timeliness of corrective actions:

- A RSPS related drill/exercise performance WEAKNESS is typically corrected within 90 days of identification.
- A PS related drill/exercise performance WEAKNESS is typically corrected within 180 days of identification.
- Resolution of other drill/exercise performance WEAKNESSES is expected within the next evaluated biennial exercise cycle because of the lower risk-significance of these efforts and expected lower priority of such efforts.

EP-related corrective action systems may track enhancement suggestions that result from the drill program. These enhancement suggestions often add value to the EP program, but are not required and do not address WEAKNESSES. There is no NRC timeliness expectation for resolution of enhancement suggestions.

## **5.2.1 Criteria**

The timeliness of the resolution of a drill or exercise performance WEAKNESS is not appropriate for its risk-significance. If the problem is RSPS-related, the failure to correct should be considered a LOSS OF PS FUNCTION for 10 CFR 50.47(b)(14) (i.e., a white finding). Otherwise, it should be considered a FAILURE TO COMPLY with REGULATORY REQUIREMENTS (i.e., a green finding).

## **5.2.2 Considerations**

It is not appropriate to consider the timeliness of enhancement items. The lack of timeliness of corrective actions should be well in excess of the suggested guidance and deemed as inappropriate in view of the significance of the WEAKNESS.

## **5.3 Failure To Correct Drill or Exercise Weakness**

### **5.3.1 Introduction**

Determination of a failure to correct a drill or exercise WEAKNESS requires a detailed review of the WEAKNESS and the associated corrective actions. It is not intended that a single repetition of a WEAKNESS (e.g., in a drill) should automatically be deemed to be a failure of the corrective action system. Conversely, success in a drill or exercise (e.g., by one well-drilled team) should not necessarily be considered a demonstration of problem resolution. When an apparent failure to resolve a problem is observed, review specific corrective actions, as well as similar occurrences in response to actual events, drills, exercises and training evolutions. Also consider the status of relevant PIs and review corrective action, self-assessment and inspection records for an entire INSPECTION CYCLE with emphasis on similar problems. In addition, verify completion of corrective actions. Assessment of the effectiveness of the corrective actions should be based on the complete history of the issue. Obtain a reasonably complete picture of the current problem by reviewing previous corrective actions. The intent is to see a pattern of recurring performance problems in similar activities in order to identify ineffective corrective actions.

### **5.3.2 Background**

10 CFR 50.47(b)(14) requires licensees to (1) conduct periodic exercises to evaluate major portions of emergency response capabilities, (2) conduct periodic drills to develop and maintain key skills, and (3) correct deficiencies identified as a result of exercises and drills. Section IV.F.2.g of Appendix E to 10 CFR Part 50 states that "All training, including exercises, shall provide for formal CRITIQUES in order to identify weak or deficient areas that need correction. Any WEAKNESSES or deficiencies that are identified shall be corrected."

The DEP PI system collects performance data from a broad cross-section of drills, and the licensee response band allows for ERO members to fail in the process of developing and maintaining key skills associated with DEP PIs. The correction of these drill/exercise WEAKNESSES is within the licensee response band. Thus, if NRC oversight unduly penalized failures in drill performance, it would detract from the development and maintenance of key skills. This same philosophy must be applied when considering performance associated with areas not covered by the DEP PI.

The DEP PI allows a 10% failure rate threshold for the licensee response band in the most risk-significant areas of the EP Cornerstone. If the PI crossed the threshold, the licensee would plan actions to correct the performance WEAKNESS and a white input would be documented. However, no finding against corrective actions would be necessary, even though the failure to correct WEAKNESSES may be part of the root cause for crossing the PI threshold. In performance areas not covered by the DEP PI, there is no PI threshold for which regulatory oversight is increased (i.e., the performance failure rate in non-DEP PI areas is not compiled). Therefore, data from drill CRITIQUES may be used to determine the effectiveness of corrective actions. However, the same philosophy used to permit the 10% DEP PI failure rate threshold for the licensee response band must be considered when evaluating areas that are not covered by the DEP PI.

If corrective actions are not adequate and the WEAKNESS involves an RSPS area that is not covered by the DEP PI (e.g., 10 CFR 50.47(b)(9)), the NRC staff should assess a LOSS OF PS FUNCTION (i.e., a white finding). All non-RSPS areas would be green.

### **5.3.3 Criteria**

The licensee failed to correct a WEAKNESS in drill or exercise performance, in an area that is not covered by the DEP PI.

Failure to correct a WEAKNESS associated with an RSPS should be assessed as a functional failure of PS 10 CFR 50.47(b)(14) (i.e., a white finding). Other failures to correct WEAKNESSES would be no greater than green.

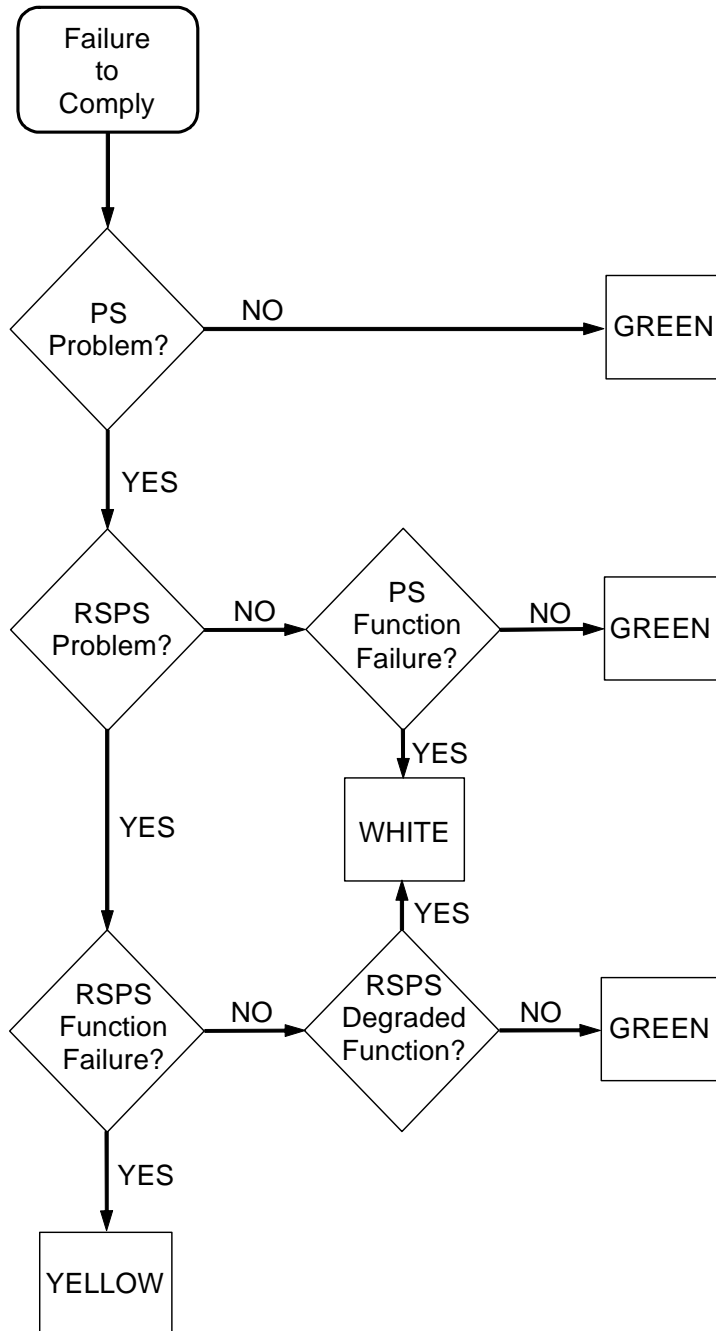
### **5.3.4 Considerations**

If corrective actions are aggressive and appear to be complete but not yet fully effective, consideration may be given to allow more time for performance improvement (future drills would be expected to show such improvement). Actions taken by the licensee to enhance or improve performance, and not specifically implemented to correct weaknesses, are not to be evaluated for their effectiveness by the EP SDP.

# Emergency Preparedness Significance Determination Process

## Sheet 1

### Failure to Comply



NOTE: PS/RSPS Function Failure is equivalent to LOSS OF PS/RSPS FUNCTION

# Emergency Preparedness Significance Determination Process

## Sheet 2

### Actual Event Implementation Problem

