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Emergency Preparedness  
Significance Determination Process

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1.0 INTRODUCTION

The framework of the Emergency Preparedness (EP) Cornerstone is described in SECY-99-007 and SECY-99-007a. The Cornerstone Objective and Performance Expectation are the bases for the inspection program and performance indicators. They are repeated here for convenience

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The Emergency Preparedness 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."

The Objective is supported by a Performance Expectation: "Demonstrate 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."

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Licensee performance in this cornerstone is assessed 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 and Assessment Process Action Matrix.

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The EP SDP consists of flow chart logic to disposition inspection findings into one of the following categories: "green - licensee response band," "white - increased regulatory response band," "yellow - required regulatory response band," or "red - unacceptable performance band." Manual Chapter 0610 contains criteria for determining which inspection issues should be placed in context through SDP.

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The EP SDP is structured such that any finding that enters the SDP will be at least green. The significance of a finding reflects the significance of the loss of program function. During the development of EP Cornerstone, the most risk significant elements were identified as distinct from other important program elements. These development efforts were performed by a group of EP subject matter experts, including

industry stakeholders, with input from members of the public. The EP SDP methodology recognizes failures in the identified risk significant elements as more significant than failures in other program elements. 10 CFR Part 50 codifies a set of EP planning standards in 10 CFR 50.47(b) and supporting requirements in Appendix E of Part 50. The more risk significant elements of EP align with a subset of the planning standards and requirements. The SDP logic identifies the loss of program function required by planning standards as more significant than noncompliance with regulatory requirements. Functional failure of the more risk significant planning standards results in greater significance than the loss of function of the other planning standards (e.g., a yellow finding as opposed to a white finding.) The stratification of EP requirements is as follows:

- the most risk significant planning standards (RSPS); 10 CFR 50.47(b)(4), (5), (9) and (10) and portions of Appendix E (as defined in the individual RSPS sections,)
- the remaining planning standards (PS); 10 CFR 50.47(b)(1), (2), (3), (6), (7), (8), (11), (12), (13), (14), (15), and (16) and portions of Appendix E, and
- other EP related regulations, (Unreference portions of 10 CFR 50 appendix E, 10 CFR 50.54(q), 10 CFR 50.54(t), Emergency Plan commitments, other regulatory commitments).

While the EP SDP assigns risk significance to findings it should be understood that even a green finding (very low risk significance) does not mean that the performance associated with the finding is acceptable. The finding may represent a violation of 10 CFR. The green significance determination 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."

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## 2.0 GENERAL GUIDANCE FOR SDP USE

The following general guidance is provided to assist in using the EP SDP.

- a. "RSPS" means 10 CFR 50.47(b)(4), (5), (9) and (10) and portions of Appendix E as defined under each RSPS.
- b. "PS" means the planning standards of 10 CFR 50.47(b), including the RSPS and portions of Appendix E to 10 CFR 50 as defined under each PS.
- c. "Regulatory requirements" means any EP related requirement, including the PS and Appendix E, e.g., failure to follow Plan commitments is non-compliance with 50.54(q).

d. "Failure to comply" means that a program is not in compliance with a regulatory requirement. This term is meant to include noncompliance items that are categorized as more than minor via the Significance Determination Process.

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e. "Failure to comply" with a planning standard can occur with varying levels of significance. Each planning standard defines one of several basic functions required by regulations to exist as part of an acceptable emergency program. The impact of a "Failure to Comply" should be addressed in accordance with the significance of that failure as described below:

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(1) Items found that fail to comply with that Planning Standard can directly impact the capability of the program to perform those functions. Items of this significance should be classified as constituting a "Loss of PS function.

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The program elements are not adequate, in compliance or otherwise functional to such an extent that the function of the PS is not met.

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This is a subset of a "failure to comply." It may be that the Plan commitments are not met, that the Plan is inadequate, that implementing procedures are inadequate or that program design is inadequate, but the result is that even if the program were implemented as designed, it would not meet the intended function of the PS.

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(2) In the case of the RSPS Significant Planning Standards it is appropriate to define an additional level of concern. The issue can be determined to have impacted the function of the RSPS but not caused the Loss of a PS function.

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Such a determination when evaluated by the SDP should conclude that the RSPS was degraded.

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(3) Items of lesser significance which still constitute a "Failure to Comply" should be addressed in the Significance Determination Process as a Failure to meet Regulatory Requirements but not as a Loss of PS Function.

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f. Loss of PS function is determined by program compliance with the regulation. However, the regulatory wording of the PS is not always exact and at times the determination of a loss of PS function may not be obvious. The determination may be informed by program compliance with the guidance of NUREG-0654. NUREG-0654

provides guidance for licensees to use in developing a program to meet the PS. The Plan was assessed (for most plants in the early 1980s) for adequacy against NUREG-0654 and other guidance, orders and regulations, and approved by NRC. The Plan is the licensee's commitment for meeting the PS. The Plan may have been approved with processes that differ from the guidance of NUREG-0654, but which appeared to meet the regulatory requirements.

However, there is an element of judgement involved in this determination. There are many guidance elements in NUREG-0654. A program may be in non-compliance with some and yet be able to meet the PS function. In this case, there may be a noncompliance with the Plan, or an inappropriate change to the Plan may have occurred that removed commitments. The PS function remains, but a failure to comply exists that will result in a finding.

- g. "Failure to implement" means that a failure to comply with regulatory requirements occurred during an actual event.
- h. Generally, failure to implement a PS is the result of personnel errors. The associated program elements are adequate and if implemented properly would have fulfilled the PS function. However, failure to implement may reveal that the program has a loss of PS function. This may be determined by a review against the criteria for loss of PS function.
- i. A performance problem during a drill or exercise is a performance problem that should be corrected, but is not a "failure to implement" as the term is used in this SDP.
- j. A "drill or exercise critique problem" means that the critique did not identify participant performance problems that would have been a failure to implement had the event been an actual emergency. The term "critique" includes all formal, documented aspects of drill assessment. In effect, for an item to fall within this category a drill or exercise must result in:
  - (1) A performance problem in the drill or exercise; (and)
  - (2) A failure of those assigned to evaluate that drill/exercise to subsequently identify that problem.

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(Comment: Page B-3 (and throughout the document) indicates that loss of a PS may be tied to NUREG-0654. Many plants in the industry are not committed to 0654 and therefore, this may not apply to them. The SDP should not hold utilities to different standards, which this would do. In a larger sense, I'm not sure 0654 should be included in this document at all. We are, however, all tied to 10CFR50.47. As discussed at the recent counterpart meeting, a change to the E-Plan, and use of 50.54(q) for evaluation of decrease in effectiveness, should not be tied to 0654 as that is simply a "planning standard." But, rather, should be applied to 10CFR50.47. I believe the same thought process should apply to the SDP.)

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**Inserted:** (Comment: Page B-3 (and throughout the document) indicates that loss of a PS may be tied to NUREG-0654. Many plants in the industry are not committed to 0654 and therefore, this may not apply to them. The SDP should not hold utilities to different standards, which this would do. In a larger sense, I'm not sure 0654 should be included in this document at all. We are, however, all tied to 10CFR50.47. As discussed at the recent counterpart meeting, a change to the E-Plan, and use of 50.54(q) for evaluation of decrease in effectiveness, should not be tied to 0654 as that is simply a "planning standard." But, rather, should be applied to 10CFR50.47. I believe the same thought process should apply to the SDP.)

**Deleted:** Failure to implement a PS means that there was a functional failure in the implementation of the PS.

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k. There are three branches of the EP SDP; Actual Event Implementation Problem, Drill or Exercise Critique Problem and Failure to Comply. Findings should be assessed through all paths that are applicable and the most significant finding issued. Parallel findings may be noted in the inspection report, but only the most significant finding should 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 the more significant finding, it would dictate the color of the issued finding.

l. Failure to correct weaknesses and deficiencies should be analyzed against compliance with PS 50.47(b)(14) and the approved plan.

m. For an actual event: The Enforcement Policy (NUREG-1600) indicates that a failure to make reports required by NRC regulations is an item of noncompliance that cannot be assessed through the SDP process. However, under the EP Cornerstone, the failure to classify and notify are integral to the EP SDP and guidance is provided, e.g., a failure to activate ERDS or staff the ENS line is a failure to comply with the requirements of 50.72 and should be considered a failure to implement under the EP SDP.

n. The NRC Policy Statement on Safety Goals for the Operations of Nuclear Power Plants, states that EP is a defense in depth measure. This indicates that the likelihood of a reactor accident should not be used to determine the safety significance of an EP element. Rather, the safety significance of a failure to comply with EP requirements should be viewed as assuming the EP program is being implemented in response to an emergency. This view may be used to answer the MC 610\* "Threshold for Documentation Questions."

### 3.0 ACTUAL EVENT IMPLEMENTATION PROBLEM

#### Background

This branch of the SDP is used when a failure to comply occurred during an actual event. An actual event implementation problem is generally the result of personnel error. The program elements are adequate and would have complied with requirements if they had been implemented.

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Deleted: (Comment: The use of the word "critique" is found throughout the document. On page B-4, it is defined as something that "...includes all formal, documented aspects of drill assessment". My concern is that this cannot be accomplished within 24-48 hours of a drill or exercise (as the NRC would have us do). Clearly, it takes some time to perform a thoughtful and detailed analysis of the issues involved in a drill. Immediately after a drill, what most plants do is a "data dump"... that is, we listen to comments from the players, evaluators and others involved in a drill. It then requires some time to analyze that data to determine if, in fact, we have a problem. In some cases (like DEP PIs), we may be able to make more rapid determinations. But even this might take more time than we seem to typically be allowed. Therefore, I would like to see some words put in the "consideration" sections dealing with "critiques" to acknowledge that a true critique (or analysis) may take up to 30 days following a drill or exercise. I contend that this is okay because of the often complex nature of drills. I would say that something less than this would be more appropriate for actual events, which are often limited in scope, and more critical in nature.)

Inserted: (Comment: The use of the word "critique" is found throughout the document. On page B-4, it is defined as something that "...includes all formal, documented aspects of drill assessment". My concern is that this cannot be accomplished within 24-48 hours of a drill or exercise (as the NRC would have us do). Clearly, it takes some time to perform a thoughtful and detailed analysis of the issues involved in a drill. Immediately after a drill, what most plants do (... [1])

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Failure to implement a PS means the PS function was not implemented in a timely manner during the event. Failure to implement some Plan elements may occur and yet the PS function be achieved.

The definition of "timely" and "accurate" for the Drill and Exercise Performance PI are not universally appropriate for determining whether a RSPS was implemented during an actual event. Timeliness should be judged in context with the competing pressures placed on the staff to respond to the event and ensure public health and safety through mitigation actions. The performance expectations is that classifications will be made as soon as possible after conditions/data are available to allow classification. This will usually be within 15 minutes. Similarly, notifications are expected to be made within 15 minutes of classification.

In general, classifications and notifications that are initiated within 15 minutes are adequate. Those that take longer should be examined and a judgement as to adequacy rendered. There may be good reason for the delay and it may have minimal impact on the Cornerstone Objective of protecting the public. It is not the intent to issue findings for classifications or notifications that are a few minutes late when licensee was performing safety related activities meant 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 may be assessed as not implementing the RSPS. Each event and response must be judged on a case-by-case basis.

Similarly, the definition of "accurate" in the Drill and Exercise Performance PI contributes data that indicates the efficacy of program elements such as training, drills, procedure quality, corrective actions, etc. An error in the notification form may have no impact on off site agency efforts, but would have been considered a failure under the PI definition. The effect of errors should be judged against the PS function to determine if the failure rises to the level of a failure to implement a PS.

Failure to comply with requirements during a drill is a performance problem that should be corrected, but is not a failure to implement as the term is used in this SDP.

#### Criteria

- a. Failure to comply with a requirement has occurred during an actual event. This is generally determined by reviewing compliance with a regulation, and Plan commitment.

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- b. Failure to implement a PS function has occurred during an actual event. This is generally determined by reviewing licensee performance against the PS function.

Considerations

**D** Review the PS function. If the poor performance had little impact on function, it may not be appropriate to consider the performance as a failure to implement a PS or perhaps even a failure to comply.

4.0 DRILL OR EXERCISE CRITIQUE PROBLEM

Background

**R** This branch of the SDP is used for inspector issues identified through the baseline program inspection of licensee drills and exercises. Inspection procedure No. 71114 instructs inspectors to observe drills and exercises and identify weaknesses (i.e., a demonstrated level of performance that could have precluded effective implementation of the emergency plan in an actual emergency.) Performance that would not comply with requirements had it occurred during an actual event is a subset of weaknesses and **A** represents a more significant performance problem.

The SDP stratifies critique failures at two levels; those involving the failure to identify RSPS weaknesses are potentially white and the failure to identify other weaknesses are potentially green.

**F** Licensees perform critiques in many different ways and inspectors should be flexible in accepting mechanisms for problem identification. The critical feature of any critique is that weaknesses are 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, the critique should be considered successful.

**T** The disposition of critique findings varies between sites. The licensee must evaluate numerous evaluator observations and prioritize resources for correction. Indeed, some evaluator suggestions may be counter productive in the judgement of responsible EP management. Care should be taken to understand the logic for suggestion disposition before the disposition is identified as a critique problem.

However, disregard for well founded evaluator identified weaknesses should be considered as a critique problem. In particular, if the weakness would be a failure to implement

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if the event had been actual, the expectation is that it will be captured by the critique.

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The Plan and procedures contain the approved commitments for implementation of NRC regulations and may be used to judge effectiveness, timely and accurate implementation. If the Plan or procedures themselves are inadequate, it is not a drill/exercise critique issue and the branch of the SDP for a failure to comply with a regulatory requirement may be helpful. Licensee mistakes and mis-steps that only detract from implementation should not be considered weaknesses. Mistakes are likely to happen in the course of an exercise and when these are corrected by the ERO it may reveal an organizational strength rather than a weakness.

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RSPS problems should be given the highest priority in the critique process. The baseline inspection program is based on the availability of accurate PI data to properly reflect licensee performance. The Drill and Exercise Performance PI (DEP) is based on licensee determination of timely and accurate classification, notification and PAR development. If the licensee critique fails to identify an inaccurate or untimely classification, notification or PAR development effort, it should be judged as a failure to identify a RSPS problem. NEI 99-02 defines timely and accurate for classification, notification and PAR development. A critique that fails to identify problems within the definitions, should be considered as failure to identify RSPS problems. A failure to identify some facet of these processes that is outside the definitions would not be considered as failure to identify RSPS problems. The expectation is for the critique to emphasize evaluation of performance in the RSPS areas.

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The RSPS include 10 CFR 50.47(b)(9). This RSPS is covered by the DEP PI in an indirect manner (i.e., classification and PARs may be based on dose projections.) Judgement may be exercised in viewing the significance of performance problems concerning this RSPS, i.e., some mis-steps may not rise to the level of a weakness. However, the NRC expectation is for the licensee critique to emphasize evaluation in the RSPS areas and weaknesses should be identified and corrected.

#### Criteria

A licensee critique of a drill or exercise has failed to identify a weakness observed by NRC inspectors.

#### Considerations

The weakness that was missed by the critique must be a demonstrated level of performance that could have precluded 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.

## 5.0 LOSS OF PS FUNCTION

Loss of PS function means that program elements are not in compliance with the PS of 10 CFR 50.47(b) because the function of the PS is not available for emergency response. It may be that the Plan commitments are not met, that implementing procedures are inadequate, that program design is inadequate, that training is inadequate such that personnel are not capable of implementation, etc. The PS function is taken from the PS as found in 50.47(b). Compliance with all NRC requirements is necessary. However, for the purposes of determining the significance of licensee failure to comply with regulatory requirements, the PS function is identified. Criteria for determining loss of PS function is provided. Loss of PS function is more significant than noncompliance with individual requirements associated with the PS. Appendix E to 10 CFR 50 contains requirements that generally align with the PS. Compliance with these requirements is a measure of the PS functionality.

However, the failure to comply with one or a few of these requirements and/or criteria does not, in itself, mean a loss of PS function. The criteria must be assessed and judgement applied to determine if the PS function has been lost.

Loss of function of RSPS results in a yellow finding. There may be cases where the PS function is not lost, but is degraded. These cases warrant a finding, but do not represent a degraded cornerstone, i.e., a yellow finding. Guidance is provided for these contingencies under each RSPS. Subsequently, there are issues impacting an RSPS that, while in noncompliance with the planning standard, have no risk significant impact on that standard.

The failure to correct weaknesses and deficiencies may be a functional failure of PS 50.47(b)(14). The guidance for this area is extensive and is placed in Section 6.0 rather than with the guidance for 50.47(b)(14).

### 5.1 10 CFR 50.47(b)(1)

The PS functions are:

- Responsibility for emergency response is assigned and

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- the response organization has the staff to respond on a continuing basis.

Requirements are found in Appendix E, §IV. A. 1., 2., 3., 4., 5., 6., 7., and 8.

Examples of loss of PS function include:

- The organization assigned responsibilities in the Plan no longer has the authority, staff or resources to respond and to augment initial response on a continuous basis.

Deleted: Criteria are found in NUREG-0654 § II. A. 1

### 5.2 10 CFR 50.47(b) (2)

The PS functions are:

- On-shift emergency response responsibilities are assigned,
- adequate initial response staff is maintained and
- the capability for timely augmentation of initial response staff is maintained

Requirements are found in Appendix E, §IV. A. 2. a., b., and c. and 3 and Appendix E, §IV. C.

Deleted: Criteria are found in NUREG-0654 § II. B.

Examples of loss of PS function include:

- On-shift staffing routinely (or procedurally) degraded to levels less than those committed in the Plan.
- Staffing changes have resulted in an organization that can not respond to emergencies IAW the commitments of the Plan.
- Staffing augmentation processes are not capable of ensuring augmentation of the initial response staff IAW facility activation commitments, i.e., one or more Plan required ERO functions IAW Plan commitments to NUREG-0654 Table B-1.
- Changes (not approved by NRC) to the Plan have resulted in a staff that no longer meets applicable guidance (or is not consistent with previous NRC approval) for emergency response staffing.

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### 5.3 10 CFR 50.47(b) (3)

The PS functions are:

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

**D** organizations capable of supporting the response effort have been identified.

Requirements are found in Appendix E § IV. A. 6. and 7.

**Deleted:** Criteria are found in NUREG-0654 § II. C.

Examples of loss of PS function include:

- Plan elements have degraded to the point that commitments for offsite assistance can no longer be met or lists of possible support organizations are no longer maintained or available.
- The EOF has been changed in such a manner that it can no longer accommodate offsite authorities, IAW the Plan.

5.4 10 CFR 50.47(b)(4)

comment:	The choice of threshold for "loss of RSPS function" versus "degradation of RSPS function" is arbitrary.
section 5.4	Also, should there be an example for a situation where classification guidance exists, but personnel responsible are unable to use it effectively (similar to the last bullet under 5.9 for dose assessment.)

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The RSPS function is:

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

Requirements are found in Appendix E § IV. B. and C.

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It should be noted that NRC has endorsed NESP/NUMARC-007 which provides an alternate "standard scheme of emergency classification." Additionally, NRC has allowed certain modifications to the classification scheme as outlined in EPOS-2.

Comment is incorrect and confuses approval of 007 and NEI 99-01 Rev. 4.

**Inserted:** (Comment: On page B-10, at the bottom of the page, there is a comment: "It should be noted that NRC has endorsed NESP/NUMARC-007 which provides an alternate 'standard scheme of emergency classification'." My last discussion with Randy Sullivan on this was that the NRC has really not fully endorsed them. And that anyone wanting to adopt them, still needs NRR review. If this is the case, I suggest we simply eliminate this statement from the SDP. I'm not sure it really adds any value to the document anyway. ¶)

Examples of loss of RSPS function include:

- EAL changes have downgraded the Emergency Class of an initiating condition (or conditions) such that more than two Alerts, more than one Site Area Emergency or any General Emergency that should be declared under approved guidance would not be declared under the changed scheme.

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Examples of degradation of RSPS function include:

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- EAL changes have downgraded the Emergency Class of an initiating condition (or conditions) such that more than one Alert and any Site Area Emergency that should be declared under approved guidance would not be declared under the changed scheme.

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**Deleted:** If the NRC has approved the change then it is appropriate.

Examples of "Failure to Comply" with an RSPS include:

**Inserted:** If the NRC has approved the change then it is appropriate.

- Changes to the EAL scheme that deviate from approved guidance but do not rise to either of the above levels may still be a decrease in effectiveness and in noncompliance with 10 CFR 50.54(q).

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**Deleted:** (Comment: The choice of threshold for "loss of RSPS function" versus "degradation of RSPS function" is arbitrary.)

5.5 10 CFR 50.47(b)(5)

The RSPS functions are:

There is a difference between not classifying something that should be classified, and classifying something but at the incorrect level. If it is classified, but at the wrong level, the offsite agencies would be notified and the dialog for public health and safety protection would begin. Here are my suggestions for examples.

- Procedures for notification are established and in use,
- the procedure for notification must be capable of notifying within 15 minutes (this is a requirement from Appendix E that is a function of the RSPS,)
- the means for public alert and notification are established and available, (However, since the ANS PI covers availability, with >90% reliability as the yellow threshold, findings for availability are not appropriate.)
- the public alert and notification system shall be designed such that it is capable of providing an alert signal throughout the 10 mile EPZ, within 15 minutes (REP-10 and ASLB Case Law,
- the public alert and notification system shall be designed such that it is capable of ensuring direct coverage of essentially 100% of the population within 5 miles of the site (REP-10 and ASLB Case Law,)
- special arrangements will be made to ensure 100% of the public in the EPZ is notified within 45 minutes (REP-10 and ASLB Case Law)

**Inserted:** (Comment: The choice of threshold for "loss of RSPS function" versus "degradation of RSPS function" is arbitrary.)

There is a difference between not classifying something that should be ... [3]

**Deleted:** Example -- loss of RSPS function:  
The EAL scheme has been changed so that it is not longer a standard scheme, i.e., EAL changes have been made such that an event that should be declare ... [4]

Requirements are found in Appendix E §IV. D. 1. and 3. Much of these requirements are integral to the RSPS function and have been incorporated above.

**D** Criteria are found in FEMA-REP-10. Some of these criteria are integral to the RSPS function and have been incorporated above.

**Deleted:** Criteria are found in NUREG-0654 § E1

Case law includes: ASAB-935, Seabrook Offsite EP Issues; ASLBP No. 82-472-03, Shearon Harris; ASAB-852, Appeal of Shearon Harris. It may be noted that ASAB rulings are precedent setting nationally. ASLBP ruling are not, but the guidance therein can inform deliberations.

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Examples of loss of **R** function include:

- Procedures will not enable personnel to perform offsite notifications within 15 minutes.
- Communications systems will not enable personnel to implement offsite notifications within 15 minutes.
- Personnel are not capable of implementing procedures or using systems for the notification offsite authorities.
- The public alert and notification system was not designed such that it is capable of providing an alert signal throughout the 10 mile EPZ, within 15 minutes (REP-10 and ASLB Case Law,)
- the public alert and notification system was not designed such that it is capable of ensuring direct coverage of essentially 100% of the population within 5 miles of the site (REP-10 and ASLB Case Law,) Note: This **F** remains but becomes a design consideration.
- special arrangements have not been made to ensure 100% of the public in the EPZ is notified within 45 minutes (REP-10 and ASLB Case Law)

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**Deleted:** Public alert and notification systems are not designed or have degraded (and not been detected by the surveillance program) to the point that less than 98% of the public can be notified. ¶  
Public alert and notification systems are not designed or have degraded (and not been detected by the surveillance program) to the point that less than 98% of the public can be notified within 15 minutes within 5 miles and within 45 minutes beyond 5 miles, (but within the EPZ.)

**Deleted:** (Comment: On page B-12, there are some examples of loss of RSPS for 50.47(b)(5) - sirens. It lists as a possible loss of function, "public alert and notification systems are not designed or have degraded to the point that less than 98% of the public can be notified." While there is a loose reference to this in 0654, there is no requirement (that I am aware of) for utilities to do an acoustic monitoring test on any given frequency to verify compliance with this standard. ¶

Examples of degradation of RSPS function include: **T**  
TBD Need examples of white findings and green findings  
This remains a problem. The NRC is asking for us to comment on an undeveloped condition.

**Inserted:** (Comment: On page B-12, there are some examples of loss of RSPS for 50.47(b)(5) - sirens. It lists as a possible loss of function, "public alert and notification systems are not designed or have degraded to the point that less than 98% of the public can be notified." While there is a loose reference to this in 0654, there is no requirement (that I am aware of) for utilities to do an acoustic monitoring test on any given frequency to verify compliance with this standard. ¶

5.6 10 CFR 50.47(b)(6)

The PS functions are:

- That systems are established for prompt communications among Principal emergency response organizations,
  - backup power supplies exist and are operational for at least one onsite and one offsite communication system (from Appendix E,) and
- D** systems are established for prompt communications to emergency response personnel.

Requirements are found in Appendix E § IV E. 9.

Deleted: Criteria are found in NUREG-0654 § II. F.

Examples of loss of PS function include:

- Equipment **R** is so degraded as to preclude communications among the TSC, EOF, and/or Control Room necessary to implement the Plan for longer than about a day. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.,) compensating measures are acceptable while repair activities proceed with high priority.
- Backup power supplies for at least one onsite and one offsite communication systems, as required by Appendix E, are **A** not functional for more than 30 days, in the absence of compensating measures.
- Equipment is so degraded as to preclude communications with field monitoring teams, the OSC or damage control teams for longer than about a week. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.,) compensating measures **F** are acceptable while repair activities proceed with high priority.

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5.7 10 CFR 50.47(b) (7)

The PS functions are:

- EP information is made available to the public within the EPZ and
- arrangements are made for dissemination of public information during emergencies.

Requirements are found in Appendix E. §IV. **T** D. 2 and approved plans.

Deleted: Criteria are found in NUREG-0654 § II. G. §

Examples of loss of PS function include:

- EP related public information has not been disseminated for a period 25% longer than that committed to in the Plan.

- The news facility is not functional for a period of longer than a week without appropriate compensatory measures such as designation of an alternate facility. In the event of major external disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.,) compensating measures are acceptable while repair activities proceed with high priority.
- Processes for dissemination of information during emergencies can not be implemented, e.g., staff necessary to operate the emergency news center is not knowledgeable in the skills necessary to operate the center, augmentation (call out) processes will not ensure activation of center staff in a timely manner, and/or methods for information approval will not allow timely and accurate information releases.

5.8 10 CFR 50.47(b) (8)

The PS functions are:

- adequate facilities are maintained to support emergency response and
- adequate equipment is maintained to support emergency response.

Requirements are found in Appendix E. §IV. E. 1, 2, 3, 4, 8, and G.

Deleted: Criteria are found in NUREG-0654 § II. H.

Examples of loss of PS function include:

- The TSC or EOF is not functional for a period of longer than about a day, without appropriate compensatory measures such as designation of an alternate facility. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.,) compensating measures are acceptable while repair activities proceed with high priority.
- The backup EOF (if applicable) is not functional for a period of longer than about 30 days. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.,) compensating measures are acceptable while repair activities proceed with high priority.
- Equipment necessary to implement the Plan is not available or not functional to an extent that would prevent implementation of the Plan. e.g., lack of field monitoring team instrumentation, lack of damage control equipment, etc.

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The availability of additional equipment, on site, in a reasonably timely manner is considered as compensating. 5.9  
10 CFR 50.47(b)(9)

The RSPS function is:

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

Requirements are found in Appendix E. §IV. B. and E. 9.

Examples of loss of RSPS function include:

- The dose assessment process can not effectively estimate source term and/or project offsite dose due to a radioactive release.
- methods are inadequate to estimate source term and/or project offsite dose due to a radioactive release, and
- equipment for dose projection is not functional to the extent that no capability exists for immediate dose projection.

Examples of a degradation of the RSPS function include:

- Off normal hours, on shift personnel responsible for dose assessment are not available more than 5% of the time.
- The licensee's field monitoring function is unavailable for more than about 3 days. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.,) compensating measures are **F**reptable while repair activities proceed with high priority.
- The dose assessment process can not evaluate erroneous high results beyond physical possibility, as demonstrated in a comprehensive drills, i.e., the degradation is not to be based on the performance of one drill team.

5.10 10 CFR 50.47(b)(10)

This PS has two aspects that are of differing risk significance. The establishment and implementation of PARs is integral to protection of public health and safety and is considered to be a RSPS. However, the PS also addresses emergency workers. While the protection of emergency workers is very important, it is not as important as the protection of public health and safety. Worker protection is considered to be a PS.

The RSPS function is:

**Deleted:** (Comment: need to discuss basis) ¶  
¶  
Comment: If a TSC or EOF is not functional for longer than a day, but the backup facility is functional, why is this a "loss of PS function"? There is no impact on public health and safety? ¶

**Inserted:** ¶  
Comment: If a TSC or EOF is not functional for longer than a day, but the backup facility is functional, why is this a "loss of PS function"? There is no impact on public health and safety? ¶

**Deleted:** Criteria are found in NUREG-0654 § II. I. ¶

**Deleted:** (Comment: Personnel implement not "the system design") ¶

**Inserted:** (Comment: Personnel implement not "the system design") ¶

**Deleted:** Personnel

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**Deleted:** Comment: Having the entire field monitoring function unavailable for 3 days seems arbitrary. Having one field monitoring kit/vehicle out of service for that long is conceivable, but not the entire function? Locals and states provide field monitoring functions therefore should not be PS. ¶

**Inserted:** Comment: Having the entire field monitoring function unavailable for 3 days seems arbitrary. Having one field monitoring kit/vehicle out of service for that long is conceivable, but not the entire function? Locals and states provide field monitoring functions therefore should not be PS. ¶

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

There are no requirements in Appendix E.

**D**

Examples of loss of RSPS function include:

- The process for the development of PARs does not implement regulatory guidance. Licensee procedures do not provide PARs that are in accordance with Plan commitments or federal guidance.

**Deleted:** Criteria are found in NUREG-0654 § II. J. 1., 7., 8., and 10.

**Deleted:** Comment: the system design does not implement the guidance personnel do !

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**Inserted:** Comment: the system design does not implement the guidance personnel do !

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Examples of a degradation **R** of the RSPS function include:

- Licensee PAR guidance is not complete in that PARs do not cover a small population (<1% of EPZ) near site, e.g., in a park in the exclusion area or owner controlled area.
- Licensee PAR guidance is not complete in that PARs do not cover a population (>1% of EPZ,) within the EPZ.
  - Protective **A**ction guidelines for the ingestion exposure pathway are not in accordance with Plan commitments or federal guidance.

The PS function is:

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

There are no requirements in Appendix E.

**F**

Examples of loss of PS function include:

- Processes are not in place or/are not adequate for the protection of workers. The processes include Assembly/Accountability/Site Evacuation; and basic radiological protections (emergency exposure limits/approval process, radio-iodine prophylactics, respiratory protection capabilities). Failure to have a process for any of these programs would constitute a loss of PS function.
- Processes to account for workers will not ensure that accountability can be accomplished IAW Plan timeliness commitments and can be maintained during an emergency.
- Knowledgeable personnel are not available to implement protective actions for workers.

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(Comment: In the examples of "degradation of RSPS Function," the first two examples are not clear. Also, the third bullet should be deleted. Protective Actions for the ingestion pathway are the State's responsibility, not that of the licensee.)

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**Deleted:** Criteria are found in NUREG-0654 § II. J. 2., 3., 4., 5. and 6. §

**Deleted:**

Timeliness may not be an adequate demonstration of loss of PS function. As written, if the timeliness commitment is not met (generally 30 minutes) by a minute this constitutes loss of function for a Risk Significant Planning Standard and a yellow finding. Completely inappropriate from a risk standpoint. (See the second bullet) This would better constitute a degraded function or in the case of the slight exceedance of the timeliness criteria, a green finding.

D

5.11 10 CFR 50.47(b) (11)

The PS function is:

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

R

Requirements are found in Appendix E. §IV. E.. 1.

Examples of loss of PS function include:

Deleted: Criteria are found in NUREG-0654 § II. K.1

- The process for control of radiological exposures is not available to control worker exposures during an emergency.
- Radiological control equipment or instrumentation, necessary to monitor exposures is not available to such an extent that emergency work in high radiation areas could not be conducted IAW regulatory requirements during emergencies.
- Processes for controlling exposures during emergencies will not ensure that exposures are maintained IAW Plan commitments.

A

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5.12 10 CFR 50.47(b) (12)

The PS function is:

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

Requirements are found in Appendix E. §IV. E. 5., 6. and 7.

T

Examples of loss of PS function include:

Deleted: Criteria are found in NUREG-0654 § II. L.1

- The assigned hospital is no longer available or qualified to receive contaminated injured personnel.

- The assigned hospital no longer has the appropriate equipment for the care of contaminated injured personnel.
- Support arrangements are no longer in place for these services.

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5.13 10 CFR 50.47(b)(13)

The PS function is:

- Recovery plans are developed.

There are no requirements in Appendix E.

Examples of loss of **R** function include:

Deleted: Criteria are found in NUREG-0654 § II. M.1

- The elements within the Plan addressing recovery have been removed or revised to the extent that recovery cannot be effectively implemented.

Deleted: eliminate commitments for adequate recovery capability.

5.14 10 CFR 50.47(b)(14)

The PS functions are:

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- A drill and exercise program is established,
- Drills and exercises are assessed via a formal critique process and
- identified weaknesses and deficiencies are corrected.

Requirements are found in Appendix E. §IV. F. 1. And 2.

Examples of loss of **F** function include:

Deleted: Criteria are found in NUREG-0654 § II. N.1

- Failure to perform the annual drill or exercise during the inspection cycle have not been conducted IAW the Plan,
- Programmatic problems such that routine failure to conduct additional drills as required by the emergency plan occurs.
- The drill and exercise critique process does not identify significant performance problems, such as a RSPS problem.
- Formal critiques are not conducted for more than one drill or exercise during the inspection cycle. Same comment as missing the drill. Appropriate for formal exercises.

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- Routine failure to conduct critiques/resolve corrective actions for training drills.

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Appendix E provides an important requirement in section IV, F, g. This requires that weaknesses and deficiencies be corrected. The correction of weaknesses and deficiencies is of fundamental importance to the Cornerstone Objective. Guidance for this element of the PS is provided below in Section 6.0.

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#### 5.15 10 CFR 50.47(b)(15)

The PS function is:

- Training is provided to emergency responders.

Requirements are found in Appendix E. §IV. F. 1.

Examples of loss of PS function include:

Deleted: Criteria are found in NUREG-0654 § II. C.1

- Personnel have not received committed training to such an extent that coverage by emergency response personnel is not available for a key ERO function (as defined by NEI 99-02.)

#### 5.16 10 CFR 50.47(b)(16)

The PS function is:

- Responsibility for Plan development is established.

There are no requirements in Appendix E.

Examples of loss of PS function include:

Deleted: Criteria are found in NUREG-0654 § II. P.1

- The organization assigned Plan maintenance does not have the expertise or resources to maintain the Plan.

## 6.0 CORRECTION OF WEAKNESSES AND DEFICIENCIES

### 6.1 INTRODUCTION

NRC Reactor Oversight Process EP Cornerstone is based on the licensee response band created by the PI program

and the licensee problem identification and resolution (PI&R) program. As related to EP, PI&R is largely the licensee's drill and exercise critique program and the corrective action program. The EP Baseline Inspection Program provides oversight of licensee efforts to critique drills and exercises and correct weaknesses. **D** 10 CFR 50.47(b)(14) and Appendix E § IV. F. 2. g. require drills and exercises be formally assessed and that identified weaknesses be corrected.

The regulations require and the EP Cornerstone is designed to foster drill and exercise programs that provide opportunities for emergency response organization members to develop and maintain skills.

**R** It is the nature of a drill program that performance errors will be made and equipment, facility and procedure problems will surface. The identification and correction of these weaknesses is a positive and vital aspect of the program. The Drill and Exercise Performance PI, which measures licensee proficiency in the most risk significant EP activities, provides a 90% success threshold for the licensee response band. This infers that a certain **A** level of error in (drill and exercise) performance is recognized as acceptable and that correction of these errors is within the licensee response band.

The regulations require that weaknesses identified during training and drills be corrected. Weaknesses may be identified through processes that are not drill or training related, such as assessment of performance during actual events, reviews **F** required by 50.54(t), audits, etc. It is the NRC expectation that weaknesses identified through these processes will also be corrected, even if failure to do so is not in noncompliance with NRC requirements. The SDP reflects this expectation.

## 6.2 TIMELINESS

### Background

**T** Guidance is provided on the timeliness aspect of correction of weaknesses. The following guidance can not be judged as absolute. The licensee should be left to determine the safety significance of the weakness and set priorities IAW commitments and approved corrective action programs. The appropriateness of those priorities will have to be judged in the context of the problem, but the guidance provided may be used as a limit for inspector involvement in timeliness

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**Deleted:** (Comment: Page B-18 (and others) indicate that the requirement for "critiques" applies to training exercises as well as evaluated drills or exercises. I don't think the same requirements should apply to training (such as table tops or other training only opportunities) as applies to evaluated opportunities. Training is done in a different environment and under different conditions. I don't think all utilities are doing critiques on "training only" opportunities. I think there should be some differentiation of this in the "considerations" section.)

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aspects, 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 timeliness of corrective actions.

**D** For cause analyses, common cause analyses and the like may take 30-60 days 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 expectation is that the licensee will resolve problems in a manner appropriate to the risk significance. That will often be in less time than suggested below, but there are times when a licensee should take more time.

**R** When the time is longer, the inspector should review the scheduling rationale for reasonableness and potential to impact the public health and safety. Should a corrective action item be scheduled in a manner that is not reasonable or potentially impacts the public health and safety (in that the Plan can not be implemented) a finding may be appropriate against PS 50.47(b)(14).

• Resolution of a loss of RSPS function or a failure to implement a RSPS during an actual event is reasonable within **A** 60 days of identification.

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• Resolution of a loss of PS function or a failure to implement a PS during an actual event is reasonable within 90 days of identification.

• Resolution of a failure to comply with or a failure to implement during an actual event, a regulatory requirement is reasonable within 180 days of identification. **F**

EP related corrective action systems may track enhancement suggestions that result from the drill program. These suggestions often add value to the program, but are not required nor do they address weaknesses. There is no timeliness expectation for resolution of such enhancement suggestions.

#### Criteria

**T** The timeliness of the resolution of a weakness is not appropriate for its risk significance. If the weakness is a RSPS problem the failure to resolve should be considered a failure to meet PS 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]. If the weakness did not result from a

drill, exercise or training evolution, the finding may be issued without a regulatory noncompliance citation.

Considerations

6.3 It is not appropriate to consider enhancement items.  
FAILURE TO CORRECT WEAKNESSES

Determination of a failure to correct a weakness requires a detailed review of the issue. It is not intended that a single repeat of a problem automatically be judged as a failure. Conversely, success in a drill/exercise, perhaps by a recently drilled team, should not be considered as success. When an apparent failure to resolve a weakness is observed, a review of specific corrective actions should be conducted. Similar occurrences in response to actual events, drills, exercises and training evolutions should be reviewed. The status of relevant PIs should be considered. Corrective action, self assessment and inspection records should be reviewed for an inspection cycle (biennial exercise to biennial exercise, nominally two years,) with emphasis on similar problems. Completion of corrective actions should be verified, in detail. Assessment of the effectiveness of the corrective actions should be based on the full record.

**Deleted:** Comment: Page B-20 discusses timeliness of corrective actions. It states that root cause analysis may take 30-60 days to complete. But then the next page gives rather arbitrary limits of 60, 90 and 180 days to resolve issues arising from actual events. This concerns me for 2 reasons. One is that these time limits appear to be arbitrary and therefore, perhaps unreasonable. If a root cause by itself can take 60 days (and I agree that it may), then we cannot completely resolve an issue in 60 days. Second is that they may not be consistent with existing plant procedures. I know that is the case here at Diablo Canyon. Adopting these numbers may require utilities to change their procedures.

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6.3.1 Failure to correct equipment, facility or procedure weaknesses

Background

A premise of the EP Cornerstone is that site PIs in the licensee response band indicate a program that is identifying equipment, facility and procedure problems and resolving them at an acceptable rate. The basis for this is that:

- DEP could not be in the green band without a reasonable level of operating equipment, functional centers, and effective procedures and
- the ERO PI ensures a substantial portion of the emergency response organization will use equipment, facilities and procedures. The Cornerstone assumption is that ERO members will identify problems they experience and the EP program will correct them.

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**Inserted:** Comment: may conflict with earlier section?

The Baseline Inspection program focuses on the correction of weaknesses, rather than on the identification of weaknesses during infrequent inspections. Nuclear plant EP programs are mature and

have successfully (generally) completed numerous inspection cycles. This being the case, equipment, facilities and procedures are prioritized below many other aspects of the program (in inspection procedure 71114, for example.) However, inspection of corrective actions may reveal repetitive problems, trends or the lack of resolution.

**D**

Criteria

Equipment, facility or procedure problems exist, have been previously identified and are not corrected to such an extent that the program elements they support can not be implemented. If the weakness involves a RSPS problem, the failure to correct may be considered a failure to meet PS 50.47(b)(14) and assessed as a white finding. Others findings under this criteria should be assessed as green.

**R**

However, if problem is significant, it may bring into question whether there is a loss of PS function.

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Considerations

A certain level of equipment failure is to be expected. Phones fail, equipment malfunctions and procedures are misfiled. A licensee EP program operating in the licensee response band should be allowed to correct these kinds of problems. Findings should only be issued in this area when the lack of correction would prevent implementation of the Plan.

**A**

6.3.2

Failure to resolve drill and exercise performance problems

**F**

Background

10 CFR 50.47(b)(14) requires that *Periodic exercises are conducted to evaluate major portions of emergency response capabilities, periodic drills are conducted to develop and maintain key skills and deficiencies identified as a result of exercises and drills are (will be) corrected.* Appendix E, section IV, F, g, states *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.*

**T**

A failure to identify weaknesses in drill performance is treated elsewhere (Drill or Exercise Critique

Problem). This section addresses a failure to resolve performance weaknesses.

The PI system collects performance data from a broad cross section of drills. There is no intention to limit the licensee's ability to conduct drills (and exercises) in which ERO members may fail in the process of developing and maintaining key skills. Any such limitation would detract from licensee ability to meet the Cornerstone Objective. Correction of drill/exercise weaknesses are within the licensee response band.

The DEP PI allows a 10% failure rate threshold for the licensee response band in the most risk significant areas of the Cornerstone. If the PI were to cross the threshold, the licensee would have to provide planned actions to address the performance problem and a white input would be documented.

In an attempt to resolve the conflicting tensions discussed above, it is thought that a 20% failure rate for drill/exercises performance, would approximate the bounds of the licensee response band. This means that detailed inspection of correction of weaknesses is not necessary unless performance problems are above a 20% failure rate over an inspection cycle.

It is understood that the performance failure rate in non-RSPS areas is not readily available. However, data from drill critiques may be used to develop these statistics. The absence of identified weaknesses may be construed as indicating success.

Where performance in an area exhibits greater than a 20% failure rate, the inspector should review the corrective actions to determine adequacy. If corrective actions are not adequate and the weakness involves a RSPS, a loss of PS function should be considered and a white finding issued. Other findings would be green.

If corrective actions are aggressive, appear to be complete but are still not effective, a judgement may be made to allow more time for performance improvement. In this case, future drills are expected to show performance improvement.

#### Criteria

Licensee corrective actions for drill/exercise performance problems as indicated by failure rate worse

than about 20%. What failure rate is being measured. 20% appears to be picked as twice the PI threshold. This can be interpreted as a repeat occurrence of up to 20% of problems or a 20% failure rate with respect to a specific performance criteria in drill or exercise.

**D** Failure to correct weaknesses that affect a RSPS should be assessed as a loss of PS function, pertaining to, PS 50.47(b)(14), i.e., a white finding. Other failures to correct weaknesses will be assessed as green.

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Enhancement or improvement items are not intended for consideration under the EP SDP.

Consideration

**R** If corrective actions are aggressive, appear to be complete but are still not effective, a judgement may be made to allow more time for performance improvement. In this case, future drills are expected to show performance improvement.

6.3.3

Failure to resolve actual response problems

Background

**A** Implementation problems during actual events will result in findings IAW sheet 2 of the SDP. A loss of PS function pertaining to, 10 CFR 50.47(b)(14) may be appropriate if the same (or similar) problems were evident from previously identified drill performance issues or previous actual events.

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**F** If the actual event performance problem involved RSPS performance DEP PI data may be useful. The green band indicates proficiency in classification, notification and PAR development and that correction of performance problems is generally effective. However, a review of specific corrective actions, critiques and response to off normal conditions should be performed. It may be appropriate to review DEP failure trends. **T** If the failures are skewed toward the actual event problem, it may indicate a failure to correct weaknesses. Data is skewed if the ratio of failures to opportunities for classification, notification or PAR development, (taken individually,) is ~33% higher than the average ratio. For example, 100 opportunities with 10 failures may contain 40 opportunities for classification, 50 for notification and 10 for PAR development. One might expect that the failures would also be about 40% classification, 50% notification, etc.

If DEP data is skewed (e.g. 8 notification failures vs. 5 in the above example,) and that same area is actual event performance problem, it may indicate a failure to correct weaknesses. However, this statistical analysis is not an absolute criterion. It indicates an area worthy of additional inspector review. The inspector should review the corrective actions in detail to determine adequacy.

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The similarity of the occurrences should be reviewed critically. Differences in circumstances may negate the initial appearance of similarity.

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The completeness of corrective actions should be viewed critically. The most effective corrective action would include root cause analysis. Less complete corrective actions, such as lessons learned briefings and practice in drills, are often implemented and may be appropriate. Weaker solutions include required reading, procedural changes and generic classroom training. In the case of repetitive problems in actual events these later actions may be considered suspect.

Finally, the licensee should be held to high standards for the correction of actual event performance problems. Especially WRT the RSPS areas of classification, notification, PAR development and assessment. Repetition of avoidable problems during actual events, should be reviewed for a failure to correct weaknesses. If it appears that licensee corrective actions were not complete and effective or that an existing weakness led to the subsequent error, a finding of a loss of PS function should be issued.

#### Criteria

A weakness was not resolved, was repeated during an actual event and review of corrective actions show them to be inadequate.

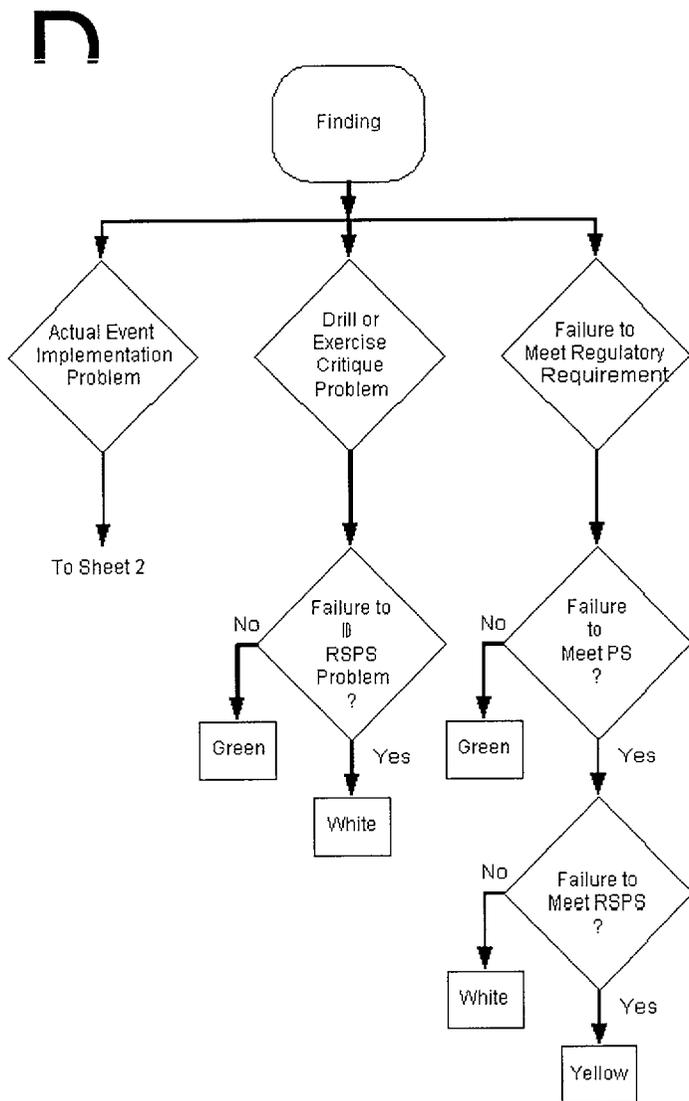
If the weakness involves a RSPS, the failure to correct should be considered as a loss of PS function, and a white finding issued. Other failures to correct should be issued as green findings.

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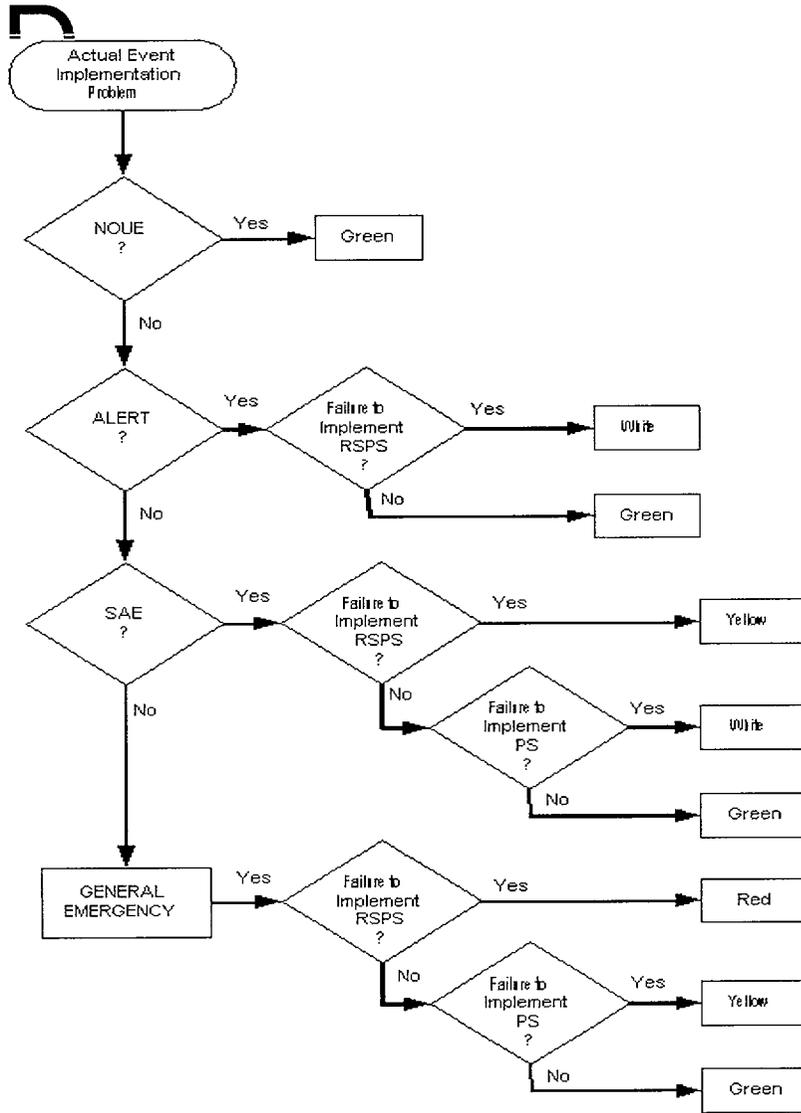
#### Considerations

The apparent similarity of repeat problems should be reviewed critically.

Emergency Preparedness Significance Determination Process



Emergency Preparedness Significance Determination Process



Sheet 2

24800

**Proposed Revision to EP SDP**  
**Failure to meet Regulatory Requirement**  
(This line replaces left line sheet 1 Failure to meet Regulatory Requirement)

