

# NRC INSPECTION MANUAL

CAEB

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MANUAL CHAPTER 2519P

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CONSTRUCTION SIGNIFICANCE DETERMINATION PROCESS - PILOT

## 2519P-01 PURPOSE

The Construction Significance Determination Process (SDP) uses risk insights, where appropriate, to help NRC inspectors and staff determine the safety or security significance of inspection findings identified within the six cornerstones of safety at nuclear reactors that are under construction. The SDP is a risk-informed process and the resulting safety significance of findings is used to define a licensee's level of safety performance in constructing the facility and to define the level of NRC engagement with the licensee. The construction SDP supports the cornerstones that are associated with the strategic performance areas as defined in Inspection Manual Chapter (IMC) 2506, "Construction Reactor Oversight Process General Guidance and Basis Document" and IMC 2200, "Security Program for Construction." The SDP determinations for inspection findings are used in assessing licensee performance in accordance with guidance provided in IMC 2505P, "Periodic Assessment of Construction Inspection Program Results – Pilot."

## 2519P-02 OBJECTIVES

02.01 To characterize the safety or security significance of inspection findings for the NRC Construction Reactor Oversight Process (cROP) using best available risk insights as appropriate.

02.02 To provide all stakeholders an objective and common framework for communicating the potential safety or security significance of inspection findings.

02.03 To provide a basis for timely assessment and/or enforcement actions associated with an inspection finding.

02.04 To provide inspectors with plant-specific risk information for use in risk-informing the inspection program.

## 2519P-03 APPLICABILITY

The construction inspection program objectives are described in IMC 2506, "Construction Reactor Oversight Process General Guidance and Basis Document," and are repeated here for convenience:

- a. Determine whether or not appropriate quality controls are implemented in the development of applications that will be or have been submitted to the NRC; and
- b. Provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license, the provisions of the Act, and the Commission's rules and regulations.

Inspections to address the quality controls associated with applications are conducted pursuant to the guidance in IMCs 2501, "Construction Inspection Program: Early Site Permit (ESP)," and 2502, "Construction Inspection Program: Pre-Combined License (Pre-COL) Phase," and the significance of associated findings is determined using traditional enforcement methods. Inspections to provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license are conducted pursuant to the guidance in IMCs 2502 (pre-construction activities), 2503, "Construction Inspection Program: Inspections of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)," and 2504, "Construction Inspection Program - Inspection of Construction and Operational Programs," and the significance of associated findings is determined using the construction significance determination process (SDP).

Before determining significance, each inspection finding must be screened to determine if it is a performance deficiency that is "more than minor" using the guidance provided in IMC 0613P, Appendix B, "Issue Screening" and/or Appendix E, "Examples of Minor Issues." Violations with no associated performance deficiency are not findings and will not be subject to this SDP. Violations that involve willfulness or that affect the regulatory process will be dispositioned using traditional enforcement and are not subject to this SDP. Conditions that do not represent deficient licensee performance are not subject to this guidance but may need to be addressed by other NRC processes (e.g., Backfit Rule, Generic Safety Issues, Rule-making). The significance of findings will be an input to the assessment of licensee construction performance as described in IMC 2505P, "Periodic Assessment of Construction Inspection Program Results – Pilot." Nothing in this guidance relieves any licensee from fully complying with licensing basis commitments or other applicable regulatory requirements. Continued compliance with regulatory requirements maintains the requisite controls necessary to achieve adequate protection of public health and safety.

## 2519P-04 DEFINITIONS

04.01 Applicable definitions are located in IMC 2506-04.

04.02 Inspection findings are assigned a color representing the significance of the finding. Unlike the ROP, colors assigned to findings identified through the construction inspection program do not have a quantitative number associated with  $\Delta$ CDF or  $\Delta$ LERF. The color thresholds for the construction SDP were risk informed through the assignment of systems and structures by an expert panel to columns in the construction SDP matrix based on risk achievement worth (RAW) values and other risk importance considerations. In addition, finding color thresholds are based on a qualitative measure of construction quality, which was defined through expert staff judgment. Thresholds for non-reactor safety SDPs were similarly developed using either quantitative risk evaluation methods or were risk informed through expert judgment of the staff. Thus construction finding colors and non-reactor safety findings colors can be qualitatively compared. The following definitions (04.02.a thru 04.02.d) include the qualitative aspects for each color.

- a. Red (high safety or security significance) qualitatively indicates a decline in licensee performance that is associated with unacceptable quality of construction that provides no assurance that the plant is being constructed in accordance with its design in the area(s) associated with the finding.
- b. Yellow (substantial safety or security significance) qualitatively, indicates a decline in licensee performance that is still acceptable with cornerstone objectives met, but with significant reduction in the assurance that the plant is being constructed in accordance with its design in the area(s) associated with the finding.
- c. White (low to moderate safety or security significance) qualitatively indicates an acceptable level of performance by the licensee, but outside the nominal risk range. Cornerstone objectives are met with minimal reduction in assurance that the plant is being constructed in accordance with its design in the area(s) associated with the finding.
- d. Green (very low safety or security significance) qualitatively indicates that licensee performance is acceptable and cornerstone objectives are fully met. Acceptable licensee corrective actions for these issues provide assurance that the plant is being constructed in accordance with its design in the area(s) associated with the finding.

## 2519P-05 RESPONSIBILITIES AND AUTHORITIES

All NRC inspectors are required to assess the significance of inspection findings in accordance with the guidance provided in this Manual Chapter. General and specific responsibilities are listed below.

### 05.01 Director, Office of New Reactors (NRO).

- a. Provide overall program direction for the cROP.
- b. Develop and direct the implementation of policies, programs, and procedures for regional application of the SDP in the evaluation of findings and issues associated with the cROP.
- c. Assess the effectiveness, uniformity, and completeness of regional implementation of the SDP.
- d. Recommends improvements to construction SDPs using a probabilistic risk framework.

### 05.02 Director, Office of Nuclear Security and Incident Response.

- a. Provide overall program direction for the security cROP.

- b. Develop and direct the implementation of policies, programs, and procedures for regional application of the security SDP in the evaluation of findings and issues associated with the security cROP.

05.03 Director, Division of Construction Inspection and Operational Programs (DCIP).

- a. Approve all SDPs and direct the development of future SDPs and improvements through periodic revisions based on new insights and feedback from users.
- b. Provide oversight and representatives as necessary to support the Significance and Enforcement Review Panel (SERP) in order to ensure consistent and timely application of the process.

05.04 Director, Division of Safety Systems & Risk Assessment (DSRA).

- a. Provides support to the development of plant specific construction SDPs, specifically with regard to the assignment of systems and components to the risk importance axis of the construction SDP matrix.
- b. Provide oversight and representatives as necessary to support the SERP in order to ensure consistent and timely application of the process.

05.05 Director, Office of Enforcement.

- a. Ensure consistent application of the enforcement process to violations of NRC regulations with the appropriate focus on the significance of the finding.
- b. Provide representatives as necessary to support the SERP in order to ensure consistent application of the enforcement process.
- c. Coordinate with NRO (and NSIR when necessary) when revising agency documents used for communicating to the licensee about apparent violations and final determinations associated with the cROP.

05.06 Region II Administrator

- a. Provide program direction for management and implementation of the SDP to activities performed by the Center for Construction Inspection.
- b. Maintain overall responsibility for, and apply regional resources as necessary, to determine the significance of specific inspection findings in a timely manner, using best available information consistent with the SDP timeliness goal and associated SDP timeliness metrics.

2519P-06 BACKGROUND

SECY-08-155, "Update on the Development of the Construction Inspection Program for

New Reactor Construction under 10 CFR Part 52,” dated October 17, 2008, described the construction assessment program developed by the staff for use in the oversight of commercial nuclear reactors under construction pursuant to 10 CFR Part 52. Specifically, as described in IMC 2505, “Periodic Assessment of Construction Inspection Program Results,” the new construction assessment program used the traditional enforcement approach to determine the significance of identified issues in lieu of a construction SDP.

SRM-M081022, “Staff Requirements - Periodic Briefing On New Reactor Issues, October 22, 2008,” dated December 5, 2008, directed the staff to reconsider the construction assessment process as presented in IMC 2505 and propose policy options to the Commission. The SRM further directed that the staff proposal should address the construction program oversight already inherent in the ITAAC monitoring and closure processes, and the inclusion in the construction oversight process of objective elements such as construction program Performance Indicators (PIs) and SDPs analogous to those used in the Reactor Oversight Process (ROP).

SECY-10-140, “Options for Revising the Construction Reactor Oversight Process Assessment Program,” dated October 26, 2010, provided draft SDPs for use in evaluating programmatic and technical findings identified through the construction inspection program at nuclear reactors that are under construction.

SRM-SECY-10-140, dated March 21, 2011, directed the staff to finalize the SDPs and pilot the use of these SDPs. Further, this SRM directed that the staff ensure that the new reactor cROP is also applicable to construction oversight of plants that are under the 10 CFR Part 50 process, including applicability to potential small modular reactor activities.

The guidance in this Manual Chapter and related construction inspection and assessment program guidance in IMCs 2506, 0613P, and 2505P was subsequently issued in support of the pilot program.

Enforcement associated with violations of regulatory requirements will continue to be processed in accordance with the current revision of the NRC Enforcement Policy, Enforcement Manual, and any applicable Enforcement Guidance Memoranda (EGMs). Minor violations, as defined by the enforcement policy, do not need to be reviewed using the SDP process.

## 2519P-07 SDP DEVELOPMENT AND FEEDBACK PROCESS

07.01 SDP Development. The development of the construction SDP followed the general process used for original SDP development. The process included the following:

- a. The draft of the SDP was subjected to internal NRC stakeholder review, including NRC regional input. Early external stakeholder input was also solicited through numerous public meetings.
- b. A feasibility review was performed by the NRC staff to assess the adequacy of the proposed SDP. This review specifically involved regional representation and tested

the SDP with real and hypothetical inspection finding examples. This review determined that the proposed SDP or change is ready to be issued for a pilot program.

- c. Appropriate training will be provided to the NRC inspection staff prior to beginning the pilot program.

07.02 The fundamental building blocks that form the framework for the construction reactor oversight process are the six cornerstones of safety: design/engineering, procurement/fabrication, construction/installation, inspection/testing, operational programs, and security programs for construction inspection and operations. These cornerstones have been grouped into three strategic performance areas: construction reactor safety, operational readiness, and safeguards programs. IMC 0613P, Appendix B contains detailed information regarding the cornerstone objectives, attributes, and areas to inspect.

This framework is based on the principle that the agency's mission of assuring public health and safety is met when the agency has reasonable assurance that licensee's are meeting the objectives of the six cornerstones of safety. The construction inspection program is an integral part, along with assessment, and enforcement, of the construction reactor oversight process. Acceptable performance in the cornerstones, as measured by the risk-informed baseline inspection program, provides reasonable assurance that the facility has been constructed and will be operated in conformity with the license and thus, assures the public health and safety.

07.03 Performance in the cornerstones will be evaluated by determining the significance of the findings identified within the construction inspection program. The construction SDP has two distinct branches: a branch for programmatic findings and a branch for technical findings. In addition, the construction SDP directs the user to IMC 0609, Appendix E – Part I, "Baseline Security Significance Determination Process for Power Reactors," to determine the significance of findings identified in the safeguards program strategic performance area. It is anticipated that the vast majority of construction inspection findings will be dispositioned using the construction SDP. However, it is possible that the construction SDP guidance may not be adequate to provide reasonable estimates of the significance of inspection findings within the established SDP timeliness goal of 90 days or less. In this case, the significance determination process using qualitative criteria described in IMC 2519P, Appendix M, "Significance Determination Process Using Qualitative Criteria," will be used.

The construction programmatic finding SDP is a deterministic flow chart for use in determining the color of findings that are purely programmatic in nature. The flow chart was developed using engineering judgment combined with stakeholder input. The construction technical finding SDP consists of a 4x4, two dimensional matrix with risk importance on the x-axis and quality of construction on the y-axis.

07.04 Construction technical finding x-axis. In, SRM-SECY-10-0140, the Commission directed that for the construction SDP, the staff should assess risk using risk importance measures with selected thresholds that are comparable and technically consistent with risk threshold levels used in the ROP. The staff accomplished this through the assignment of

systems and structures to columns designated as high risk, intermediate risk, low risk, and very low risk on the x-axis of the matrix as follows:

The ROP uses the following threshold levels:

<b><math>\Delta</math> CDF &gt; 1 E-4</b>
<b>1 E-5 &lt; <math>\Delta</math> CDF &lt; 1 E-4</b>
<b>1 E-6 &lt; <math>\Delta</math> CDF &lt; 1 E-5</b>
<b><math>\Delta</math> CDF &lt; 1 E-6</b>

Given these threshold values, and the baseline CDF values for a new reactor, one could find technically consistent values of risk achievement worth (RAW) for each of the columns of the x-axis. Since the top row in the matrix represents the greatest degree of nonconformance, the RAW values for each column are derived from the corresponding  $\Delta$ CDF values for each column of the top row and the baseline CDF as shown in Figure 1.

<b>Figure 1</b> <b>AP 1000 Construction SDP Matrix</b> <b>Assumption: AP1000 internal events baseline CDF ~ 2.5 E-7</b>					
<b>Quality of Construction</b>	Row 4	<b><math>\Delta</math>CDF &lt; 1 E-6</b>	<b><math>\Delta</math>CDF 1 E-6 to 1 E-5</b>	<b><math>\Delta</math>CDF 1 E-5 to 1 E-4</b>	<b><math>\Delta</math>CDF &gt; 1 E-4</b>
	Row 3				
	Row 2				
	Row 1				
		Very low RAW < 4	Low RAW 4 to 40	Intermediate RAW 40 to 400	High RAW > 400
		<b>System/Structure Risk Importance</b>			

For example, if “Red” corresponds to  $\Delta$ CDF of greater than  $10^{-4}$ /yr in the ROP, then for the AP1000 with an internal event CDF of  $\sim 2.4 \times 10^{-7}$ /yr (round to  $2.5 \times 10^{-7}$ /yr for convenience), the corresponding RAW threshold of  $10^{-4} / 2.5 \times 10^{-7}$  or 400 would be the

threshold for the “high risk importance” system column in the risk matrix. In risk space, this would be equivalent to arguing that if the high degree of nonconformance of the finding were to essentially render a high risk important system in a failed state during commercial operation, the CDF would increase by greater than  $10^{-4}$  /yr. This assumption is acknowledged to be conservative, but it is a reasonable and technically consistent approach given all the constraints of the problem.

The assignment of RAW values is repeated for each column. Hence, systems in the left-most column would theoretically impact CDF by less than  $10^{-6}$  /yr. The consequence of this approach, much like the issue of absolute versus relative risk metrics in SECY-10-0121, “Modifying the Risk-Informed Regulatory Guidance for New Reactors,” dated September 14, 2010, is that reactors with higher baseline CDFs would have lower RAW thresholds for each of the risk importance columns, which may tend to push more systems into the right-most columns. This is in keeping with the philosophy of SRM-SECY-10-0121 which states that new reactors with enhanced margins and safety features should have greater operational flexibility than current reactors [with higher baseline CDFs and risk].

The staff implemented this approach for the AP 1000 by convening an expert panel consisting of industry and staff PRA experts. The panel used SPAR model calculations and the AP1000 design certification PRA to assign RAW values to AP 1000 systems. The panel reviewed the D-RAP list (DCD, Tier 1, Table 17.4-1) to determine if additional placement criteria should be considered. The group placed some systems into a column based on the following criteria:

1. System performs a post-72 hour safety function
2. System is safety significant during shutdown operations
3. System is important to LERF
4. System is important during a severe accident

For example, the normal residual heat removal, component cooling water, and service water systems have very low risk importance at power but higher risk importance during shutdown. Westinghouse, using a simplified shutdown PRA model, provided information that supported placing these systems into the low risk importance column.

Structures were assigned to risk importance columns based on the review of the equipment contained within them and the judgment that the risk importances should be comparable. Reactor coolant system piping and components were assigned to the high risk importance column due to the role they play in maintaining the pressure boundary and preventing coolant system leakage.

Findings pertaining to commodities or other components that have not yet been installed (e.g. valves, tube steel, concrete, cables) in the plant and cannot be associated with a system or structure were determined to have very low risk importance and will always screen to green.

The final assignment of AP 1000 systems and structures to the matrix risk importance columns along with clarifying notes is contained in Appendix A. The process of assigning systems and structures to the x-axis of the matrix will be repeated for each reactor design

that is planned for construction and the results will be contained in additional appendices to this manual chapter.

07.05 Construction technical finding y-axis. The y-axis of the matrix in Figure 1 is a measure of quality of construction. One objective of the CIP is to provide reasonable assurance that the facility has been constructed in conformity with the license. In evaluating potential consequences of an issue of concern (IOC) identified through the CIP, the NRC considers whether the IOC impacted the quality of construction. The quality of construction informs the decision on whether or not reasonable assurance exists that the plant is being constructed in accordance with its design.

The matrix rows are generally defined as follows:

Row 1: Finding has limited or no impact on a system or structure.

Row 2: Finding has moderate impact on a system or structure. Finding escalated from Row 1 due to a repetitive significant condition adverse to quality.

Row 3: Finding has substantial impact on a system or structure. Finding escalated from Row 2 due to a repetitive significant condition adverse to quality.

Row 4: Finding escalated from Row 3 due to a repetitive significant condition adverse to quality.

If the finding is associated with an ITAAC and the acceptance criteria stated in the license is conservative relative to the underlying design requirement, and data (e.g., a calculation) exists to support that the design function can be met under the circumstances, then the finding will be assigned to Row 1.

The construction SDP in the appendices to this IMC provides specific guidance and details regarding the assignment of findings to a row in the matrix. A flow diagram that guides the inspector through the process in determining the extent of condition of the finding on a system or a structure is also included in the construction SDP.

07.06 Construction inspection findings will be assigned the color associated with the applicable matrix coordinate based on the pre-determined risk importance of the involved system or structure (x-axis) and the row that applies to the quality of construction (y-axis) of the finding. Specific Implementation instructions for the construction SDP are contained in Appendix A.

07.07 SDP Feedback and Improvement. The NRO Sharepoint site contains the “NRO/DCIP IMC/IP Revision Request Database Instruction Manual,” that describes in detail the feedback process to document problems, concerns, or difficulties encountered during implementation of IMCs and IPs associated with the NRC’s cROP.

The following basic process is described in detail in Attachment 1 to this Manual Chapter.

08.01 Initial Characterization of Inspection Findings. All reactor construction inspection findings are generally discussed with licensee representatives during the inspection process and are formally presented at an exit meeting with licensee management at the conclusion of the inspection period. The significance of findings is determined using the construction SDP in the appendices to this IMC.

- a. If the determination result is Green, then this would represent a final determination and will be characterized as Green at the exit meeting and in the inspection report.
- b. If the inspector's determination result is potentially White, Yellow, Red, or greater than Green, then it will receive additional review(s) by the regional staff as described in Section 08.02 while taking into account SDP timeliness goals as described in Section 08.05 of this Manual Chapter. The staff will use the best available information to determine the preliminary significance for each finding in parallel with the inspector developing the facts surrounding the finding.

Documentation of the finding, including details required to support the results of the SDP, will be performed in accordance with guidance provided in IMC 0613P. If the staff's significance determination of a finding is not complete at the time of the exit meeting or at the time of issuance of the inspection report, and has not been reviewed by the SERP, then the finding will be characterized at the exit meeting and in the inspection report as "to be determined (TBD)." No inspection finding should be characterized as a color other than Green during an exit meeting or in official NRC correspondence unless the SERP has reviewed it.

08.02 Preliminary Significance Review. Any finding with a potential significance of White, Yellow, Red, or greater than Green, will be reviewed by the SERP as described in Attachment 1 to this Manual Chapter. The result of the SERP review represents the staff's preliminary safety or security significance assessment. However, when a potential White, Yellow, or Red finding is determined to be Green by the SERP, this will represent a final determination and will be characterized as such in the inspection report.

08.03 Obtaining Licensee Perspectives on Preliminary Significance of a Finding. If the preliminary significance assessment of a finding is White, Yellow, Red, or greater than Green, then the licensee will be given the opportunity to formally present additional information or perspective at a public Regulatory Conference or in a written response on the docket. The opportunity for the licensee to request a public Regulatory Conference or provide a written response on the docket will be offered in the cover letter of the inspection report or in the Preliminary Significance Determination letter (refer to Attachment 1). The letter must clearly state, with sufficient detail, the staff's basis for its decision to enable the licensee to understand and provide further information to assist the staff in making the best informed final significance determination. The focus of the Regulatory Conference is to discuss the significance of the finding(s) and the corrective actions and root causes associated with the finding(s). The licensee may present differing views on the staff's preliminary significance, present new facts, clarify existing information, and provide their evaluation of significance.

Security-related matters will normally not be public, either at a conference or in correspondence.

The licensee is expected, but not required, to provide on the docket, at least seven days prior to the Regulatory Conference, any information considered applicable to the finding(s). The NRC staff must receive all additional information, which is to be considered for the finding, within a reasonable period of time (agreed upon between the licensee and the staff, and documented), in order to allow the staff adequate time to review the information. All written or electronic correspondence received from the licensee communicating their official response will be docketed. Any non-sensitive information provided by the licensee during the Regulatory Conference will be made public.

**08.04 Finalization of the Staff's Significance Determination.** If the licensee accepts the staff's preliminary significance determination in a written response, and does not intend to present additional information, then the staff will issue the final significance determination letter. If the licensee provides further information on the docket by mail or during a Regulatory Conference, then the staff that participated in the regulatory conference will decide in a post-conference review the merits of the information presented by the licensee and its impact on the final determination of the finding. If the staff, after consideration of the licensee's additional information, determines that the initial characterization of significance should not change, the staff will issue the final determination of significance; a final SERP is not required. If, after considering the licensee's additional information, the staff determines that a change in the initial characterization of significance is warranted or should be considered, then an additional SERP will be scheduled to review the new information in accordance with the guidelines in Attachment 1 of this Manual Chapter. If the SERP, after considering the licensee's additional information, determines that a preliminary White, Yellow, Red, or greater than Green finding is of Green significance, this is the final determination and may be communicated as such in a letter or in the cover letter of the next quarterly inspection report.

In the case where the staff has issued a preliminary significance determination of greater than Green and the licensee has not or cannot provide sufficient information to better inform the staff's significance determination in a reasonable period of time, then the staff should determine final significance using its best objective rationale, and document this rationale fully in a letter to the licensee. This is expected to be rare and should conform to all SDP procedural requirements.

When the SERP agrees on the final determination of significance, the licensee will be informed of the final color of the finding in a final significance determination letter. Enforcement actions stemming from the finding, if applicable, will generally be forwarded at that time, and the licensee will be informed of the SDP appeal process described in Attachment 2 of this Manual Chapter.

**08.05 SDP Timeliness.** The Agency's goal for SDP timeliness is that all final significance determinations be completed within 90 days from the issue date of the first official correspondence that described the finding or documented the need for further review to determine significance (TBD). All attempts should be made to meet this goal, however, it is recognized that certain issues, due to their complexity, may result in occasions where the

goal is exceeded. However, given the rapid pace of activities at a construction site, all efforts should be made to complete the final significance determination as soon as practical and well within the 90-day goal.

The timeliness criteria below represent the maximum time approximated for each process milestone in order for the Agency to meet the 90 day goal.

- T<sub>0</sub> - The issue date of the first official correspondence describing the finding, either in an inspection report and/or preliminary significance determination letter
- T<sub>30</sub> - Latest date to issue the preliminary significance determination letter
- T<sub>70</sub> - Latest date for completing the Regulatory Conference with licensee (materials to be presented by licensee should be received by the staff seven days prior to the meeting)
- T<sub>85</sub> - Latest date to complete final SERP
- T<sub>87</sub> - Latest date to issue Enforcement Notification (EN) to the Commission
- T<sub>90</sub> - Final Determination letter issued

The Agency successfully completing the SDP process within 90 days is dependent upon timely completion of a public Regulatory Conference or review of a written response. The timeliness criterion below represents the maximum time approximated for each process milestone for the licensee to establish the Regulatory Conference within the 90-day goal. This timeliness goal is developed in detail in Attachment 1 to this Manual Chapter.

- T<sub>L0</sub> - Issue date of the preliminary significance determination letter issued in an inspection report cover letter or separate correspondence
- T<sub>L10</sub> - Licensee informs the NRC within 10 days from the issue date of the notification of the preliminary significance determination, by phone or other means, of its intent to request a regulatory conference, to respond with a written submittal, or to decline the opportunity to provide its perspective. If the licensee declines this opportunity, it must also submit written correspondence stating its intent.
- T<sub>L33</sub> - Licensee submits materials to be presented at the Regulatory Conference
- T<sub>L40</sub> - Regulatory Conference completed or licensee's written response received by NRC no later than 40 days from the issue date of the preliminary significance determination letter. NOTE: The NRC must receive all additional information that was under development at the time of the Regulatory Conference, if it is to be considered for the finding, within a reasonable period of time (agreed upon between the licensee and the staff, and documented), in order to allow the staff adequate time to review the information.

#### Exceptions to the Timeliness Goal.

- a. Findings of a final Green significance will not negatively impact the timeliness of the NRC's regulatory response. As such, these findings are not subject to the timeliness goal and associated SDP timeliness metrics, and may be communicated outside the 90-day timeliness period in a letter or in the cover letter of the next quarterly inspection report. The sponsor of the finding should verbally communicate the final results to the licensee if there is a significant delay in issuing the next report.
- b. Experience has shown that inspection findings that may take longer than the 90 day goal to assess for significance meet one or more of the following criteria:
  1. Findings are of such technical complexity that existing SDP evaluation tools are not readily adaptable to the issue.
  2. The region does not have the expertise or resources to determine the impact on the design basis of a system or structure.
  3. Findings have potentially high safety significance (i.e., Yellow or Red) that should be carefully examined for potential impact on plant construction and subsequent NRC action.

In these cases, additional time may be necessary to complete a preliminary and/or a final determination of safety significance. However, findings for which the 90-day goal is not met, including findings where the limit was extended, will continue to negatively impact the timeliness goal and associated SDP timeliness metrics.

- c. Some findings may involve a formal Office of Investigation (OI) or Department of Justice (DOJ) investigation. When an inspection finding involves a formal OI/DOJ investigation and it is known that the results of the investigation will not impact further evaluation of the finding's significance and/or follow-up inspection, then the finding should be resolved per the normal SDP process. If the OI/DOJ investigation does impact the timely resolution of the finding, then the guidance for a planning SERP should be implemented.

08.06 Planning SERP. If further information and/or analysis are necessary before a finding can be evaluated and the SDP timeliness goal and associated metrics may be in jeopardy of not being met, the region may request a Planning SERP. Similarly, if the region or office is considering applying Appendix M to characterize the significance of a finding, the region may request a Planning SERP. The Planning SERP is convened at the discretion of the applicable regional sponsor of the finding with cooperation of the HQ staff. The members of the Planning SERP are the same as those of a routine SERP, as described in IMC 2519P Attachment 1, Significance and Enforcement Review Panel Process. Guidelines for conducting a Planning SERP are detailed in Exhibit 3 of IMC 2519P Attachment 1.

Before presenting to the Planning SERP, the regional sponsor should coordinate with HQ staff on determining the scope for the evaluation, the need for additional information and expertise (subject matter experts from other Divisions in NRO), and the estimated time necessary to obtain an acceptable preliminary finding.

It is expected that no assessments will be delayed beyond 90 days. However, if the SERP agrees that specific circumstances will delay the final characterization beyond 90 days, the Regional Administrator and the NRO Office Director must be notified. If the Planning SERP reaches consensus that additional time is warranted beyond 90 days, a schedule must be developed for the key milestones above. Findings requiring greater than the 90 day goal will continue to have a negative impact on the SDP timeliness metrics.

#### 2519P-09 PROCESS FOR LICENSEE APPEAL OF A STAFF SDP DETERMINATION

If a licensee disagrees with the staff's final determination of significance, the licensee may appeal the determination to the Region II Administrator as described in Attachment 2 of this Manual Chapter. Any such review must meet the requirements stated in the Prerequisites and Limitations sections of Attachment 2 to merit further staff consideration. Specifically, the licensee must have opted for an opportunity to present additional information to the staff either by meeting with regional management at a Regulatory Conference or by submitting a written response on the docket.

#### 2519P-10 USING THE SDP TO DETERMINE THE SIGNIFICANCE OF INSPECTION FINDINGS THAT ARE NOT VIOLATIONS OF THE LICENSING OR DESIGN BASIS

The staff's use of the SDP to determine the significance of the result or consequence of a licensee performance deficiency will be made regardless of whether the result or consequence constitutes a violation of a licensee's licensing or design basis or any other regulatory requirement or commitment. Agency follow-up of such findings, if determined to be significant, will be handled in accordance with the backfit rules of 10 CFR 50.109 as appropriate.

END

#### Attachments:

Attachment 1 - Significance and Enforcement Review Panel Process

Attachment 2 - Process for Appealing NRC Characterization of Inspection Findings  
(SDP Appeal Process)

Attachment 3 – Revision History

Appendices:

Appendix A – AP 1000 Construction Significance Determination Process

Appendices B – L - Reserved

Appendix M - Significance Determination Process Using Qualitative Criteria

## ATTACHMENT 1

### SIGNIFICANCE AND ENFORCEMENT REVIEW PANEL PROCESS

#### 2519P.01-01 SCOPE

This Attachment describes NRC guidance for preparing and processing findings determined by the Construction Significance Determination Process (SDP) to be potentially significant (White, Yellow, or Red). Because enforcement decisions are integrated into this process, this guidance includes enforcement-related information for clarity and convenience.

The Commission's Enforcement Policy, Enforcement Manual, and Enforcement Guidance Memoranda remain the governing documents for enforcement-related activities. Current enforcement guidance is maintained on the Office of Enforcement's (OE's) Web site: <http://www.nrc.gov/reading-rm/doc-collections/enforcement/>

In addition to regional offices, the guidance in this Attachment applies to other NRC offices responsible for conducting inspections and the overall management of inspection findings for reactors under construction; specifically as it applies to the NRC Office of Nuclear Security and Incident Response (NSIR) for its conduct of headquarters based inspection activities.

#### 2519P.01-02 SIGNIFICANCE AND ENFORCEMENT REVIEW PANEL - (SERP)

The SERP provides a management review of the preliminary significance characterization and basis of findings that are potentially White, Yellow, Red, or Greater than Green. When necessary, based on the results of a Regulatory Conference or written response provided by the licensee, the SERP provides the management review of the final significance characterization and the basis of findings that are White, Yellow, or Red. No official agency preliminary significance determination of White, Yellow, Red, or greater than Green will be made without a SERP review. During the SERP, panel members will discuss the merits of the finding and reach consensus on:

- a. the statement of deficient licensee performance on which the inspection finding is based,
- b. the safety significance of the finding, including assignment of preliminary or final color,
- c. the apparent violation (AV) and the regulatory requirements that should be cited.

In all cases, the regions or NRC office conducting the inspection are responsible for the overall management of inspection findings. Although some findings may be referred to other technical areas of the NRC, the regions or office must maintain full awareness of the status of those findings to ensure that the findings are dispositioned in a timely manner.

## 02.01 Significance Determination and Preparation for the SERP.

- a. The responsible inspector shall clearly establish the licensee performance deficiency and characterize the finding as potentially greater than Green by applying the best available information and using the construction SDP described in the appendices to this Manual Chapter.
- b. Using the outline provided in Exhibit 2, the Sponsoring Region or office will assemble a package of documents that will provide the SERP members a clear understanding of the preliminary or final significance of the finding and the related enforcement recommendations.
- c. If further information and/or analysis are necessary before a finding can be evaluated and the SDP timeliness goal and associated metrics may be in jeopardy of not being met, the region may request a planning SERP. Similarly, if the region or office is considering applying IMC 2519P, Appendix M to characterize the significance of a finding, it should request a Planning SERP. A Planning SERP will reach consensus on the scope, schedule, methodology, and who is to perform the assessment (reference Section 08.06 of IMC 2519P). This assessment will be documented on the "Planning SERP Worksheet" (Exhibit 3 to this Attachment). An additional SERP will be required before the preliminary significance determination is reached and a letter is issued.
- d. If the staff's significance determination of a finding is not complete at the time of issuance of the inspection report, and not reviewed by the SERP, then the finding will be characterized in the inspection report as "to be determined (TBD)." No inspection finding should be described by a color other than Green in official NRC correspondence unless the SERP has reviewed it.

## 02.02 NRO Enforcement Coordinator Preparation.

The NRO Enforcement Coordinator will arrange for support/participation by the appropriate technical and project management staff. SERPs are typically held during the scheduled weekly Region II enforcement conference call. To schedule a SERP, the Region II enforcement liaison, at the earliest opportunity, will notify the NRO Enforcement Coordinator and OE of a potentially White, Yellow, Red, or greater than Green finding being assessed at the region to schedule the date the finding will be ready to present at a SERP. The NRO enforcement coordinator will verify the availability of NRO SERP members and maintain the SERP calendar.

At least five working days (earlier for more complex issues) prior to the SERP, the regions or office will provide to the NRO Enforcement Coordinator the SERP worksheets (Exhibit 2 or 3) and other pertinent information. The NRO Enforcement Coordinator will distribute the packages to all headquarters SERP participants.

## 02.03 Participation in the SERP.

The principal objective of the SERP is to arrive at a consensus regarding the significance determinations, their bases, and the appropriate enforcement actions to be taken, if applicable. All members of the SERP, indicated in the table below, will represent their organization and participate in reaching a consensus. SERP members may request that technical specialists be available at the SERP for consultation on issues. Participation in SERPs should be in accordance with the following guidelines:

Role	Responsible Organization/Participant
<p>Sponsor</p> <p>Holds overall responsibility for issue resolution, including assuring appropriate SDP results and achieving SDP timeliness milestones. Leads the meeting in accordance with the guidelines of this Manual Chapter and the Enforcement Manual. Also leads the presentation of the finding.</p>	<p>Regional or office management representation by the responsible Division Director or Deputy Division Director</p>
<p>Headquarters Technical Spokesperson</p> <p>Provides headquarters technical position and is the NRO authority on the SDP being used. Also responsible for ensuring the outcomes are consistent with program office guidelines (i.e. with respect to application of risk insights) and regulatory policy. Provides inspection program management, ensures implementation of SERP and outcome are consistent with cROP policy, resolves cROP program issues.</p>	<p>Applicable Technical Division</p> <p>NRO Division of Construction Inspection and Operational Programs Deputy Division Director (or designee).</p>
<p>Enforcement Spokesperson</p> <p>Responsible for determining the adequacy of NOV's related to White, Yellow, or Red inspection findings; and ensures the agreements reached at the SERP are documented on the Strategy Form in accordance with OE policies.</p>	<p>Headquarters Office of Enforcement, Deputy Director (or designee).</p>

Other invited participants may include the applicable NRO Project Manager, Regional Enforcement Coordinator, Office of the General Counsel, and others as applicable. SERP members can also request participation in the SERP by inspectors and technical specialists involved in the development of the significance of the finding.

## 02.04 Preliminary SERP Reviews.

Members of the SERP panel will discuss the finding and reach consensus on the statement of deficient licensee performance on which the inspection finding is based, the safety significance of the finding including assignment of preliminary color, the AV(s) and the regulatory requirements that should be cited. No official agency preliminary significance determination of White, Yellow, Red, or greater than Green will be made without a SERP review. The following can be completed prior to issuing the inspection report but should not exceed 30 days after the report is issued (see IMC2519P, Section 08.05 - SDP Timeliness).

- a. Green, Minor, or No Finding: If the SERP concludes that the preliminary significance determination of the finding is Green, or minor, or the SERP determines that the criteria for a finding were not met, the SERP's conclusion regarding enforcement (no violation or NCV) will be documented by OE on the Enforcement Action Tracking System (EATS) Strategy Form. The decision of the SERP will represent a final significance determination and will be characterized as such in the inspection report.
  
- b. White, Yellow, or Red Findings:
  1. If the SERP reaches a consensus that the preliminary result of the significance determination associated with the finding is White, Yellow, or Red, the SERP's conclusion will be documented by OE on the Strategy Form (EATS).
  2. The region or responsible office will issue a preliminary significance determination letter to the licensee in the inspection report cover letter or by a separate letter using Enforcement Manual, Appendix B – Standard Formats for Enforcement Packages - Form 3-II, or 3-II(S) for security-related matters. *(For security-related findings, the Preliminary Determination letter will be controlled as per the guidance in Commission Policy SECY-04-0191 for Safeguards Information or Sensitive Unclassified Non-Safeguards Information (SUNSI) and will not be publicly available. C1)*
  3. The inspection report cover letter or the preliminary significance determination letter will offer the licensee an opportunity to submit a written response or to request a Regulatory Conference described in Section 2519P.01-03. The preliminary significance determination letter must provide sufficient detail for the licensee to understand the basis of the staff's preliminary significance determination. This will enable the licensee to determine if (and what) additional information is needed to better inform the final significance determination. If appropriate, the letter should contain specific questions or request specific information the staff needs to make its final significance determination. In all cases, the correspondence to the licensee should include a date for the licensee to provide the information requested to support SDP timeliness. The licensee should, although not required, submit materials on the docket at least seven days prior to the

regulatory conference. The letter should not include the SDP worksheets or portions of the SERP package. Security-related details shall be provided in a non-public attachment to the letter.

5. If the SERP's preliminary significance is determined to be White, Yellow, or Red and the licensee declines to submit a written response or to arrange a Regulatory Conference, then the preliminary assessment of significance becomes final, and the region will issue the final significance determination letter described in Section 2519P.01-04. The cover letter should include the appropriate paragraph referencing the licensee's letter declining to provide a written response or attend a Regulatory Conference. By declining the opportunity to submit a written response or to request a Regulatory Conference, the licensee relinquishes its right to appeal the final significance determination, in that by not doing either fails to meet the appeal requirements stated in the Prerequisite and Limitation sections of Attachment 2 of this Manual Chapter.

c. Greater Than Green Findings.

1. The "greater than Green" option is not expected to be the norm when characterizing the preliminary significance of findings.
2. The staff should make realistic assumptions in the bases for its significance determinations and should make a reasonable effort to determine a specific preliminary color in a timely manner. Every effort should be made during the peer review to resolve all differences and concerns.
3. The preliminary significance of a finding should be characterized as "potentially greater than Green" if the staff:
  - (a) Is unable to determine a specific preliminary color because of the proximity to a color threshold, or
  - (b) Lacks information to make reasonable assumptions, and the assumptions are influential to the preliminary significance result (i.e., will cause the color to vary).

When this option is used, the SDP basis provided to the licensee must be particularly clear and complete to identify where the staff lacks information to reach a preliminary determination.

02.05 Tracking SDP/Enforcement Issues. The SERP determinations are administratively tracked and filed through the use of OE's Enforcement Action Tracking System (EATS). Enforcement Action (EA) numbers are assigned to findings that have been discussed during a SERP, regardless of whether the finding results in a violation. During or subsequent to the SERP meeting, an OE Enforcement Specialist will assign an EA number to each case by completing the SDP/EA Request & Strategy Form. The Strategy Form enables tracking of individual findings and potential violations. Following the SERP, OE will

send the completed Strategy Form to each SERP member to review for accuracy. Any disagreement with the contents of the Strategy Form should be provided to OE within 3 working days.

If additional related findings are identified subsequent to a SERP, additional SERP meeting(s) would be conducted and separate EA tracking number(s) may be assigned. If the findings are determined to be Green or are determined not to be findings, the related EA number(s) should be closed to reflect final disposition and the Strategy Form(s) should be updated to provide the basis for the final determination. Once an EA number has been assigned to a finding (and any related violations), all subsequent documents involving the finding should include the complete EA number (EA-YY-XXX).

## 2519P.01-03 LICENSEE'S RESPONSE AND REGULATORY CONFERENCES

Attending a Regulatory Conference or providing a written response are the options available to a licensee if it wants to provide the staff with additional information related to a finding. Both options provide an opportunity for the staff to receive information that was not considered in the preliminary assessment and that may affect the outcome of the final significance determination.

Receipt of a licensee's written response or the Regulatory Conference should normally be completed within 30 days of the licensee's receipt of the preliminary significance determination letter. The licensee will notify the NRC by phone or other means within 10 days how it intends to respond. Should the licensee decline its opportunity to participate in a Regulatory Conference, it needs to inform the NRC of this decision in writing.

### 03.01 Scheduling and Announcing Regulatory Conferences.

- a. The region or responsible office should inform the licensee whether the Regulatory Conference will be open or closed to public observation and that any handouts at the conference will subsequently be made available to the public, unless the conference meets the provisions of 10 CFR 2.390 (a)(4) or (6).
- b. If the licensee opts to attend a Regulatory Conference, it should provide any information considered applicable to the finding(s) at least seven days prior to the conference. This information must be provided on the docket. All electronic correspondence received from the licensee communicating its official response will be docketed. Any non-sensitive information provided by the licensee during the Regulatory Conference will also be made public. Receiving the licensee's information several days before the conference will allow for a more informative and effective conference by providing the staff sufficient time to review the information and formulate any questions.
- c. The licensee should also inform the NRC of any additional information that is under development and not included in the written response or presented at the Regulatory Conference. To allow the staff adequate time to review information provided by the licensee, the NRC must receive all additional information that is to

be considered when determining the final significance of the finding within a reasonable period of time agreed upon between the licensee and the staff.

- d. The region or responsible office should promptly notify OE, the NRR Enforcement Coordinator, the appropriate Regional State Liaison Officer, and the EDO Regional Coordinator of the conference date.
- e. The region or responsible office should issue a meeting notice in accordance with regional procedures and report all conferences to the Public Meeting Notice System as described in NRC Management Directive 3.5, "Attendance at NRC Staff Sponsored Meetings." A copy of the conference meeting notices should be sent to the NRR Enforcement Coordinator. If the finding involves an AV, the meeting notice should also be posted on the OE web site. The region should include OEMAIL and OEWEB as addressees.

The meeting notice and meeting information should clearly indicate the predecisional nature of issues and state that the purpose of the conference is to discuss the preliminary safety significance of a particular finding. The discussion of the finding should be brief, but detailed enough to inform the public of what will be discussed at the conference. If appropriate, the notice should then include a statement that the conference will also address any AV(s) associated with the finding. For security-related findings, the notice should not include any description of the findings.

- f. Conferences in which security findings will be discussed are closed in part or in total to public observation. For security reasons, NRC staff should not participate by telephone or video in conferences when Safeguards Information will be discussed. If such participation becomes necessary, it should be in accordance with Management Directives 12.4, "NRC Telecommunications System Security Program," and 12.6, "NRC Sensitive and Unclassified Information Security Program."
- g. The region or responsible office should consult with the Office of Public Affairs to determine whether to issue a press release announcing the conference.

03.02 Attendance at Regulatory Conferences. This section provides specific guidance concerning attendance at conferences, including NRC personnel, licensee personnel, media representatives and members of the public, and State government personnel.

- a. NRC Personnel. NRC personnel should attend conferences according to the following guidelines:
  - 1. The responsible Division Director will designate the appropriate staff that should be in attendance. At the Division Director's discretion and in accordance with security guidelines, NRC staff may participate in conferences by telephone or video.
  - 2. OE staff should participate in all conferences.

3. NRO participation may be requested as deemed necessary.
  4. Regional Counsel may be requested to attend conferences where legal issues may be raised.
- b. Licensee Personnel. The licensee should ensure that they are represented by the appropriate level of management, licensing staff, and technical staff. Legal Counsel may attend the conferences where legal issues may be raised.
  - c. Media and Members of the Public. The public attending an open conference may observe but not participate in the conference. Members of the public may record (including videotape) a conference if that activity is not disruptive. The purpose of conducting open conferences is to provide the public with opportunities to be informed of NRC activities while balancing the need for the NRC staff to exercise its regulatory and safety responsibilities without undue administrative burden. Following the conference, the staff will be available to respond to questions and comments from the media and members of the public concerning matters discussed at the conference.
  - d. State and Local Officials. When conferences are open to the public, interested State and local officials should also be invited to attend. When other circumstances warrant, the Director, OE, may authorize the Regional Administrator to permit State personnel to attend a closed Regulatory Conference in accordance with the guidance in the Enforcement Manual, Section 4.1.2.4 - State Government Attendance at PECs and Regulatory Conferences.

03.03 Conduct of Regulatory Conferences. The conferences should be conducted according to the following guidelines:

- a. Conferences are normally conducted in the Region II office or in the office that conducted the inspection activity. There may be special circumstances where the agency determines that it would be beneficial to the process to conduct the conference elsewhere. In these cases, the region should consult with NRR, Nuclear Security and Incident Response (NSIR) if needed, and OE before scheduling the conference.
- b. The Region II Administrator or office director responsible for the inspection activity should determine the appropriate member of management to serve as the presiding official at the conference.
- c. The presiding NRC official should (1) announce the conference as an open or closed meeting, (2) discuss the purpose of the conference, (3) inform the licensee and public attendees that the decision to hold the conference does not mean that the agency has determined the significance of the issues, that violations have occurred, or that enforcement action will be taken, (4) inform the public attendees that the conference is a meeting between the NRC and the licensee and that the meeting is open for public observation, but not participation, and (5) briefly explain

the SDP/enforcement process. Exhibit 1 of this Attachment provides standard opening remarks.

- d. Region II or the responsible office should briefly discuss the findings being considered and explain the basis of the agency's concern (i.e., safety significance and AV). The level of detail to be discussed should be commensurate with the complexity and significance of the issues. Most of the detailed information should be included in the inspection report. The discussion should include the assumptions and methods used by the NRC to arrive at the preliminary determination of risk significance.
- e. The licensee should discuss its understanding of the facts and circumstances surrounding the significance of the findings and where it agrees and disagrees with the NRC's assumptions and analysis. Any issues of disagreement should be discussed in enough detail for the NRC to fully understand the licensee's basis and any new information introduced. The licensee will notify Region II or the responsible NRC office of the nature of any additional information under development that was not presented at the conference and the date the region can expect to receive it. Once the pertinent facts have been established and understood by all parties, the presiding official must recognize and briefly summarize differences of opinion and keep the conference productive.
- f. After completing discussions related to the safety significance of the findings, addressing any AV(s) and/or discussing applicable corrective actions is appropriate. The licensee should indicate its agreement or explain why it does not agree with the AV. The discussion of corrective actions should include extent of conditions, likelihood of success of corrective actions, and any repetitions of previously identified problems. Detailed discussions of long-term corrective actions should be reserved for the Regulatory Performance meeting and for the followup inspection activities.
- g. Prior to the conclusion of the conference, the participating NRC staff should confer independent from the licensee and other participants, to determine the need for additional information.
- h. The region or responsible office should provide closing remarks and the presiding NRC official should remind the licensee and public attendees that the preliminary significance determination and the AV(s) discussed are subject to further review and are subject to change prior to any resulting action. The region should also make it clear that the statements of views or expressions of opinion made by NRC employees at the conference, or the lack thereof, are not final conclusions.

03.04 Post-Conference Review. Subsequent to a Regulatory Conference, the Sponsor with the NRC staff who participated in the Regulatory Conference should review the information provided by the licensee to determine whether the finding merits further evaluation or if the staff should proceed with issuing a final significance determination. This review does not have to be a formal meeting, can be completed by teleconference or email, but should occur as close to the completion of the Regulatory conference as

possible. The same guidance applies to post-conference review of a licensee's written response.

If the post-conference review concludes that the information presented by the licensee does not change the preliminary significance of the finding, a final SERP is not necessary. The region or responsible office should prepare a final significance determination letter that will affirm the significance determination of the original SERP as described in Section 02.04.

- a. The post-conference review will consider:
  1. the reasonableness of the information provided by the licensee and whether new information or perspectives were obtained warrant reconsideration of the preliminary safety significance of the finding or of the performance deficiency
  2. the enforcement strategy, to determine whether it remains valid or should be changed
  3. whether additional review of information provided by the licensee is necessary before a decision on a course of action can be made
  4. whether additional information is necessary

### 03.05 Final SERP.

- a. If participants in the post-conference review conclude that the licensee presented sufficient information that changes, or appears to change, the significance of the finding or its basis, a final SERP is required. If necessary, Region II or the responsible office should coordinate completing the assessment of the new licensee material. Region II or the responsible office will update the appropriate section(s) of the original SERP Worksheet (Exhibit 2) affected by the new information and conduct the final SERP, following completion of any additional final significance analysis. Region II or the responsible office should provide a new recommendation of significance to the final SERP and discuss those issues that affected the preliminary significance determination, whether it changed the outcome or not.
- b. If the SERP, after considering the licensee's additional information, determines that a preliminary White, Yellow, Red, or greater than Green finding is a Green finding, this is the final determination and will be communicated as such in the cover letter of the next quarterly inspection report. Findings resulting in a final Green significance will not negatively impact the timeliness of the NRC's regulatory response. As such, these findings are not subject to the timeliness goal and associated SDP timeliness metrics, and, the next quarterly inspection report may be issued outside the 90-day timeliness period. The sponsor of the finding should verbally communicate the final results to the licensee if there is a significant delay in issuing the next inspection report.

- c. If the SERP cannot reach consensus on the final significance of the finding the SERP must either (1) direct specific actions to reconcile the different views; or (2) identify the appropriate NRC manager(s) to make a final decision; or (3) immediately escalate the issue to the manager having the overall cognizance for the organizations having differing views. If resolution is not achieved within 14 calendar days, the Inspection Program Spokesperson, through the appropriate management, will notify the applicable office director, Region II Administrator and the Director of NRO of the issues and the actions being taken to resolve them.
- d. If, as a result of the SERP discussion, a substantive change is made from the preliminary significance determination or AV(s), another exit meeting should be held with the licensee if deemed necessary by the Sponsor of the issue.

#### 2519P.01-04 ISSUING FINAL SIGNIFICANCE DETERMINATION (AND NOTICE OF VIOLATION (NOV) IF APPLICABLE)

04.01 Final Significance Determination Letter and NOV. Region II or the responsible office prepares the cover letter transmitting the final assessment results using the standard format in Form 3-III or 3-III(S) for security-related matters, located in the Enforcement Manual, Appendix B – Standard Formats for Enforcement Packages. The letter includes additional language if an NOV is included. The staff is responsible for ensuring that the NOV and letter is consistent with the guidance in the Enforcement Manual. The letter should effectively and succinctly communicate the NRC safety significance assessment of the findings and any related violations and should include the elements listed below. For security-related findings, Region II or the responsible office addresses the elements in a non-public enclosure to the cover letter.

- a. A summary of (1) the purpose of the inspection; (2) if and how the finding was reported (e.g., 50.55(e), CDR); (3) when the inspection report related to this action was issued; and (4) if and when (and where) a conference was held, if a conference was declined, or if there was a response to a Preliminary Determination letter. The licensee decision to not submit a written response or to arrange a Regulatory Conference will affect their ability to appeal the final SDP determination, in that not doing either fails to meet the appeal requirements stated in the Prerequisite and Limitation sections of Attachment 2 of this Manual Chapter.
- b. A conclusion that the finding represented an issue of safety significance and that a violation occurred (if applicable) and a very brief summary of the circumstances that resulted in the finding and/or violation.
- c. Justification for not incorporating into the significance determination licensee perspectives presented at the conference, if applicable.
- d. A statement that the licensee may appeal the staff's determination of the significance of the finding in accordance with Attachment 2 of this Manual Chapter, if applicable. This statement should not be included if the licensee accepted the

Preliminary Determination without contest or declined the opportunity to respond in writing on the docket or request a Regulatory Conference.

- e. A discussion of the related violation(s).
- f. If an NOV is included, a description of whether a response from the licensee is necessary, including any area that deserves special emphasis, such as a provision that the licensee respond if it's understanding of the required corrective action is different than that stated.
- g. A statement that the letter and the licensee's response will be made available to the public or that the letter and the licensee's response will not be made public if it contains security-related, safeguards or classified information.

04.02 Final Significance Determination and NOV, Coordination and Review. All final significance determination letters for Yellow and Red findings shall be sent to headquarters for concurrence. The Office of Enforcement will coordinate the collection of comments and concurrence from all headquarters reviewers. The SERP will determine if letters transmitting White issues need headquarters' review on a case-by-case basis.

- a. NRO Enforcement Coordinator will ensure appropriate review of the proposed action by appropriate risk, program, and technical branches with a focus on the proper characterization of the safety significance of the issues and on the technical accuracy of the violations.
- b. OE will review all final significance determinations that include an NOV and will forward comments to the region indicating where the action was revised and explain any significant changes. (Refer to the Enforcement Manual for specific guidance on coordination and review of escalated NOV's without civil penalties.)

04.03 Final Significance Determination and NOV Signature Authority.

Final significance determination cover letters associated with White, Yellow, or Red issues should be signed and issued according to the following guidelines:

- a. The Region II Administrator or the Deputy Regional Administrator for Construction or responsible NRC office director or deputy office director normally signs and issues final significance determination cover letters associated with Yellow, or Red findings.
- b. The Region II Administrator or Deputy Regional Administrator for Construction or responsible NRC office director or deputy office director may delegate to the division directors the authority to sign and issue final significance determination cover letters associated with Yellow findings.
- c. Division Directors are normally expected to sign and issue final significance determination cover letters associated with White findings.

04.04 Licensee Notification, Mailing, and Distribution of Final Significance Determination Letters. Final significance determination letters are normally mailed to licensees and States by regular mail. Distribution is made according to the NOV distribution guidance in the Enforcement Manual and regional procedures. The Commission must be provided with an Enforcement Notification (EN) three work days before a final letter containing an NOV is sent to a licensee. EN's are prepared by OE and issuance must be coordinated through the Region or NRO (NSIR) Enforcement Coordinator. ENs should also be considered for any final determination without an NOV that has become a matter of public or Commission interest.

Exhibit 1 – Suggested Opening Comments for Regulatory Conference

Exhibit 2 – SERP Worksheet for SDP-Related Findings

Exhibit 3 - Planning SERP Worksheet

END

## Exhibit 1

### SUGGESTED OPENING COMMENTS FOR REGULATORY CONFERENCE

After a potentially safety-significant finding is identified and characterized by the Construction Significance Determination Process (SDP) as either White, Yellow, Red, or greater than Green, an opportunity for a Regulatory Conference is offered to a licensee. In this case, [the licensee's name] requested that a conference be held to discuss the issues and their significance.

This conference is OPEN to public observation. Members of the public who are in attendance at this meeting should be aware that this is a meeting between the Nuclear Regulatory Commission and [the licensee's name]. Following the conference, NRC staff will be available to answer questions and receive comments from members of the public concerning matters discussed at this conference.

A Regulatory Conference is the last step of the inspection process before the NRC makes its final decision on the significance of the inspection findings. [Using the subject finding provide a brief summary of the SDP and how the process led to the conference].

The purpose of this conference is to allow you to identify your disagreements, in part or all, with facts and assumptions used by the NRC to make the preliminary significance determination, and to allow you to present new information that may assist the NRC in arriving at the most appropriate final significance determination.

We would also appreciate your views as to whether there is any other information that may be relevant to the application of significance determination in this case, including your position on the content and accuracy of the inspection report findings which were provided to you in advance of this conference. If you have any additional information that is under development and is not available to be presented at this Regulatory Conference, please inform us of the nature of the information and the date the NRC can expect to receive it. The NRC must receive all additional information, which is to be considered for the finding, within a reasonable period of time to allow the staff adequate time to review the information.

In addition to discussing your views on the safety significance of the finding(s), you may want to present your views on the identified apparent violation(s). Please note that the primary purpose of this meeting is to discuss issues related to the safety significance of the finding(s), which informs the outcome of the apparent violation. But, because a predecisional enforcement conference is normally not convened to discuss the apparent violation, any discussion concerning apparent violations and the applicable corrective actions is permitted. It is important to note that the decision to conduct this conference does not mean that the NRC has determined that a violation has occurred. Violations related to the findings being discussed today will be assessed in accordance with the Commission's Enforcement Policy.

I should also note at this time that any statements of view or expressions of opinion made by NRC employees at this conference do not represent final agency determinations or beliefs relative to the matter before us today.

Following this conference, the Regional and NRC Headquarters staff, will reach a significance determination and enforcement decision. The NRC's goal is to issue the final significance determination letter within 90-days of the first official notification describing the finding.

If you have any questions now or at any time during this conference, we would be pleased to answer them.

## Exhibit 2

### SERP Worksheet for SDP-Related Findings

#### General Guidance.

##### Risk-Informed Decision Attributes Meeting Minimum Acceptable Standards for cROP

If the following guidelines are met, the SDP result may be considered meeting the minimal acceptable standard of being risk-informed, for use by the cROP.

- 1) Each assumption is considered on its own merit regardless how it influences the final result.
- 2) The SDP assumptions are understood by the SERP members allowing them to conclude that the basis for each assumption is adequate, commensurate with its relative influence on the result.
- 3) The logic and assumptions are scrutable to inspectors, risk analysts, technical staff, and licensee staff.

#### Specific Guidance for Final Determination SERP.

- 1) If participants in the post-conference review conclude that the licensee presented sufficient information that changes the significance of the finding, or substantially changes its basis, the region will update the appropriate section(s) of the original SERP Worksheet (Exhibit 2). Region II or the responsible office should discuss only those issues that affected the preliminary significance determination.

SERP Worksheet for construction SDP-Related Findings  
[Facility Name]  
[Title of Issue]

SERP Date:

EA No.:

Licensee Name:

Facility/Location:

Docket No(s):

License No:

Inspection Report No:

Date of Exit Meeting:

Issue Sponsor:

Region II

HQ

Deputy Director:

Branch Chief:

Inspectors:

**Executive Summary**

Cornerstone Affected:

Proposed Preliminary Results:

White    Yellow    Red    Greater than Green

Summary of the Performance Deficiency:

Summary of Significance Determination:

Provide a brief description of the Construction SDP screening, logic process, and results

Provide a brief description of the Licensee's evaluation of the issue

Summary of any Associated Apparent Violation:

**Details**

A. Summary of Issue (include a brief description of the root cause and licensee's corrective action(s), if available):

B. Statement of the Performance Deficiency:

C. Significance Determination Basis:

Flowchart logic and full justification of assumptions used

Proposed preliminary or final color

D. Proposed Enforcement.

1. Regulatory requirement not met.
2. Proposed citation.

E. Determination of Follow-up Review (as needed)

For White findings propose whether headquarters (NRO and/or OE) should review final determination letter before issuance. (For greater than White findings, review and concurrence by NRO and OE is required as discussed in Section 4b.)

## Exhibit 3

### Planning SERP Worksheet

1. State the licensee's performance deficiency and any regulatory requirement or industry standard not met.
2. Describe the reason the regional sponsor requests the finding to be reviewed by the Planning SERP (the finding meets the criteria of Section 08.05b of IMC 2519P: the technical complexity is such that existing SDP tools are not readily adaptable to the issue, the region does not have the expertise or resources to risk-inform the finding, or the finding has a potentially high safety significance [Yellow or Red]. Also, if the region determines that the construction SDP is not suitable to assess the significance of a finding and is considering applying IMC 2519P, Appendix B to characterize the significance of a finding, those considerations must be discussed in a Planning SERP if the finding is likely to be greater than green).
3. State why more assessment time is needed beyond the 90 day timeliness goal, if applicable.
4. Describe the proposed scope of the assessment, identify the proposed methodology (e.g. IMC 2519P, Appendix B) and justify the level of methodology recommended for the preliminary assessment.
5. Provide a recommended schedule for the completion of the assessment.
6. Provide the recommended expertise to complete the assessment.
7. Provide a discussion as to the applicability of NRC Management Review described in IMC 0613P, Appendix B, should or should not be used for arriving at a preliminary determination.
8. Provide additional comments for SERP consideration such as known conservatisms, uncertainty ranges, influential assumptions, and use of what is considered best available information.

## ATTACHMENT 2

### PROCESS FOR APPEALING NRC CHARACTERIZATION OF INSPECTION FINDINGS (SDP APPEAL PROCESS)

#### 2519P.02-01 PURPOSE

To define the process by which a licensee may appeal the staff's final significance determination of an inspection finding documented in an NRC inspection report or final significance determination letter as White, Yellow, or Red. Consistent with the intent of the significance determination process (SDP) to assess significance in a timely manner using the best available information, the staff should be cautious to ensure that the appeal process does not become a protracted review requiring extensive staff resources.

#### 2519P.02-02 PREREQUISITES

It is assumed that prior to issuing the final significance determination, "coloring" the finding, and documenting this in an inspection report, including the SDP basis for significance, the staff would have completed the following:

- a. Applying the best available information, the responsible inspector would have established the licensee's performance deficiency and characterized the finding as potentially greater than Green. Using the construction SDP, the inspector would have determined the proposed preliminary color for the finding (White, Yellow, Red, or Greater Than Green).
- b. Each finding that the staff's significance determination has preliminarily characterized "White, Yellow, Red, or Greater Than Green" would have been presented to and reviewed by the NRC Significance and Enforcement Review Panel (SERP). Subsequently, the staff would have informed the licensee of the preliminary characterization of the issue in a preliminary significance determination letter which included an invitation for the licensee to present additional information.
- c. If the licensee opted for an opportunity to present additional information to the staff either by meeting with regional management at a Regulatory Conference or by submitting additional information in writing on the docket, such information would have been reviewed and dispositioned by the staff. Additional information that the licensee indicated was not available to present at the Regulatory Conference, should be received by the staff within a reasonable period of time (agreed upon between the licensee and the staff, and documented), to allow the staff adequate time to review the information.
- d. The staff has sent the licensee a letter which states the staff's final significance determination and broadly responds to the information provided by the licensee.

## 2519P.02-03 LIMITATIONS

Once the above prerequisites have been met, licensee appeals to reduce the significance of an inspection finding will be considered as having sufficient merit for review by this appeal process only if the licensee's contention falls into one of the following categories:

- a. The staff's significance determination process was inconsistent with construction SDP guidance or lacked justification. Issues involving the assignment of a finding to a column on the x-axis of the construction SDP matrix will not be considered appealable under this process, provided the staff documented its justification in those cases where the licensee presented a different point of view.
- b. Extent of condition, likelihood of successful corrective actions, and repetitive SCAQ applicable to y-axis that would be a basis for a successful licensee appeal.
- c. A licensee submits new information which was not available at the time of the Regulatory Conference. New information will be considered only if the licensee informed the staff that additional information was under development prior to or during the Regulatory Conference, or in their written response to the preliminary significance determination. The information under development should have been received within a reasonable period of time (agreed upon between the licensee and the staff) for the staff to review it.

## 2519P.02-04 INSPECTION REPORT COVER LETTER TRANSMITTING FINAL SIGNIFICANCE DETERMINATION

The following statement will be added to each inspection report cover letter or other official correspondence that transmits an inspection finding of White, Yellow, or Red significance:

"You have 30 calendar days from the date of this letter to appeal the staff's determination of significance for the identified [white/yellow/red] finding[s]. Such appeals will be considered to have merit only if they meet the criteria given in NRC Inspection Manual Chapter 2519P, Attachment 2."

## 2519P.02-05 APPEAL PROCESS

- a. The licensee must submit its letter of appeal to the Region II Administrator (RA) or to the NRC Office Director responsible for the inspection within 30 calendar days of the date of the transmittal letter.
- b. The RA or responsible NRC Office Director should determine within 30 calendar days of the receipt of the licensee's appeal request whether the appeal meets the above merit guidelines. Following the determination, but still within the 30 calendar days, the RA or responsible NRC Office Director should inform the licensee in writing of the decision and its basis. NRO or

NSIR (for Security and emergency planning), should concur on the decision to accept the appeal.

- c. If the appeal is accepted, the associated review and written notification to the licensee stating the results of the appeal review should be limited to 30 calendar days following the acceptance of the appeal. The RA or responsible NRC Office Director will appoint an appeal panel consisting of, at a minimum, two technical experts in the cornerstone being discussed and an enforcement specialist. The RA or responsible NRC Office Director may also request representation by the Office of General Counsel. At least one panel member will not have had prior involvement with the significance determination under appeal. The principal purpose of the panel is to arrive at a consensus regarding the validity of the licensee's appeal.
- d. The appeal panel will review the inspection finding, its significance characterization and basis, any new information that was being developed at the time of the Regulatory Conference, and the licensee's points of contention. The panel will conduct its review based only on docketed information either provided by the licensee, issued by the staff, or otherwise publicly available. The panel may recommend one of the following:
  - 1. No further action and the significance determination is unchanged, or
  - 2. more detailed justification of the basis for the significance determination is required, or
  - 3. change the significance determination (either increase or decrease), as appropriate.The panel may also recommend changes to the SDP, regardless of whether such changes would affect the outcome of the appeal under review.
- e. The appeal panel will provide its conclusions to the SERP in writing. Within 10 working days of the date of the appeal panel's conclusions, the SERP will consider the results of the appeal panel. The SERP will provide the results of their review to the RA, and to the Director of NRO, or the Director of NSIR (for security or emergency planning), within 5 working days.
- f. Within five working days of receiving the final recommendation memorandum, the RA and the Director of NRO, or the Director of NSIR (for security or emergency planning) will confer and jointly agree on the final decision. Subsequently the RA or responsible NRC Office Director will notify the licensee in writing of the final agency position.
- g. The results of the appeal process are final with no further avenues for appeal within the significance determination process.

END

**IMC 2519P**  
**Appendix A**

**AP 1000 CONSTRUCTION SIGNIFICANCE DETERMINATION PROCESS - PILOT**

**1.0 APPLICABILITY**

The construction significance determination process (SDP) in this Appendix is designed to provide a means by which NRC inspectors and management can assess the significance of findings identified at facilities for which a limited work authorization (LWA) and/or a combined license (COL) has been issued authorizing construction activities on a proposed AP 1000 commercial nuclear reactor.

**2.0 ENTRY CONDITIONS**

Each issue entering the SDP process must first be screened using IMC 0613P, Appendix B, "Issue Screening," and IMC 0613P, Appendix E, "Examples of Minor Issues."

In rare cases, the construction SDP guidance in this appendix may not be adequate to provide reasonable estimates of the significance of inspection findings within the established SDP timeliness goal of 90 days or less. In this case, the significance determination process using qualitative criteria described in Appendix M will be used.

**3.0 DEFINITIONS**

Within this SDP, the following definitions apply:

- A. Performance Deficiency (PD). An issue that is the result of a licensee not meeting a requirement or standard where the cause was reasonably within the licensee's ability to foresee and correct, and therefore should have been prevented. A performance deficiency can exist if a licensee fails to meet a self-imposed standard or a standard required by regulation, thus a performance deficiency may exist independently of whether a regulatory requirement was violated. Additional discussion can be found in Appendix B, 'Issue Screening,' of IMC 0613P.
- B. Finding. A performance deficiency of more than minor significance. A finding may or may not be associated with regulatory non-compliance and, therefore, may or may not result in a violation.
- C. Programmatic finding. A finding involving inadequate requirements intended to ensure a critical attribute of a construction or operational program is met.
- D. Technical finding. A finding that is not a programmatic finding. Construction findings and ITAAC findings are examples of technical findings.

- ITAAC finding is a technical finding that is associated with a specific ITAAC and is material to the ITAAC acceptance criteria.

- Construction finding is a technical finding that is not associated with a specific ITAAC and/or is not material to the ITAAC acceptance criteria.
- E. Program critical attribute – An element of a program that is established to ensure that a regulatory requirement is met. Program descriptions are contained in the final safety analysis report.
- F. Work activities – Processes implemented during the construction of the facility in areas such as but not limited to structural, piping, electrical, and foundations.
- G. Accept-as-is - A hardware disposition which may be imposed for a nonconformance\* when it can be established that the discrepancy will result in no adverse condition and that the item under consideration will continue to meet all engineering functional requirements including performance, maintainability, fit, and safety. A design change may be required as a result of the accept-as-is disposition. Code document ASME Section III defines accept-as-is as a disposition assigned to an item previously identified as nonconforming after reconciling Design Output Documents with the item’s as-built condition and verifying that applicable requirements of Section III have been met.

\* A nonconformance is a deficiency in characteristics, documentation, or procedures which renders the quality of an item unacceptable or indeterminate. Examples of nonconformance include physical defects, test failures, incorrect or inadequate documentation or deviation from prescribed manufacturing processing, inspection, or test procedures.

#### 4.0. AP 1000 CONSTRUCTION SIGNIFICANCE DETERMINATION PROCESS

The inspector will first determine the cornerstone affected as a result of the performance deficiency. If the finding affects the attributes of multiple construction cornerstones, the finding should be assigned to the cornerstone that is most related to the finding. The inspector should refer to the Construction Programmatic SDP flow diagram as the following steps are accomplished.

- Step 1 Determine if the finding is related to a security program.
  - a. If the finding is related to security either during construction (i.e., fitness-for duty, control of safeguards information) or after the operational security program has been implemented, go to the Baseline Security SDP in IMC 0609, Appendix E, Part 1.
  - b. If the finding is not related to a security program, then go to step 2.
- Step 2 Determine if the finding is associated with an operational program after a license condition implementation milestone has occurred.

- a. If the operational program implementation milestone has been reached, go to the appropriate ROP SDP in IMC 0609.
- b. If the finding is not related to an operational program after the program implementation milestone has been met, go to Step 3.

Step 3 Determine the type of finding that has been identified.

- a. If the finding is associated only with program requirements and there is no technical issue involved, it is a programmatic finding. Proceed to Step 4. If the finding is not a programmatic finding, it is a technical finding. Continue.
- b. If the finding is associated with a specific ITAAC and is material to the ITAAC acceptance criteria, it is an ITAAC finding and it will be assigned to the cornerstone that best reflects the finding. Proceed to Step 6.
- c. If the finding is not associated with a specific ITAAC and/or is not material to the ITAAC acceptance criteria, it is a construction finding and it will be assigned to the cornerstone that best reflects the finding. Proceed to Step 6.

Step 4 If the finding is associated with an operational program, it will be assigned to the Operational Programs cornerstone. If the finding is associated with a construction program, it will be assigned to the cornerstone that is most closely related to the respective construction program.

Determine if the finding is an omission of a program's critical attribute.

- a. If the finding is an omission of a program's critical attribute, go to step 5.
- b. If the finding is not an omission of a program's critical attribute, then the significance of the finding is GREEN.

Step 5 Determine if the omission of the program's critical attribute was identified by the NRC during a previous inspection of the respective program.

- a. If the omission was identified by the NRC during a previous inspection and the licensee has had adequate time to address the issue, the significance of the finding is WHITE.
- b. If the omission was not previously identified by the NRC or the licensee has not had adequate time to address the finding, then the significance of the finding is GREEN.

Step 6 If the technical finding also involves a repetitive, NRC-identified omission of a program critical attribute, then document a WHITE programmatic finding and continue to Step 7 to evaluate the significance of the technical finding. If the technical finding does not involve a repetitive, NRC-identified omission of a program critical attribute, then continue to Step 7 to evaluate the significance of the technical finding.

Step 7 Determine if the finding can be associated with a system or structure.

- a. If the finding can be associated with a system or structure, proceed to Step 8.
- b. If the finding cannot be associated with a system or structure, the significance of the finding is GREEN.

NOTE: Once the inspector gets to this step in the SDP, the finding has been determined to be a technical finding (i.e., a construction finding or an ITAAC finding). Construction findings and ITAAC findings will be assigned to a coordinate in the construction significance determination matrix based on the pre-determined risk importance of the involved system or structure (x-axis) and the row that applies to the quality of construction (y-axis) of the finding. The matrix, risk importance table, and associated guidance are provided below to assist inspectors in determining the significance of the technical finding that has been identified.

Step 8 Determine the appropriate SDP matrix column to which the technical finding should be assigned using the risk importance table and its associated guidance.

- a. If the risk importance of the system or structure involved with the finding is determined to be very low, the finding is assigned to the very low risk importance column in the construction SDP matrix.
- b. If the risk importance of the system or structure involved with the finding is determined to be low, the finding is assigned to the low risk importance column of the construction SDP matrix.
- c. If the risk importance of the system or structure involved with the finding is determined to be intermediate, the finding is assigned to the intermediate column of the construction SDP matrix.
- d. If the risk importance of the system or structure involved with the finding is determined to be high, the finding is assigned to the high risk importance column of the SDP matrix.

Step 9 Use the following screening criteria to determine the risk significance of the finding.

If the finding is associated with a system or structure in the very low risk column of the risk importance (RI) table, its risk significance is GREEN.

If the finding is associated with a system or structure in the low risk column of the RI table and is not a repetitive significant condition adverse to quality (SCAQ), its risk significance is GREEN.

If the finding is associated with receipt and storage, its risk significance is GREEN.

If the issue associated with the finding has been dispositioned as use-as-is or it appears that this determination can be made without a detailed analysis, the significance of the finding is GREEN.

If the licensee demonstrates with reasonable assurance that the design function of the applicable structure or system would not be impaired by the deficiency, the significance of the finding is GREEN.

If the significance of the finding cannot be determined using the criteria above, continue to Step 10.

Step 10 If the finding is associated with a system in the risk importance table, continue to Step 11. If the finding is associated with a structure in the risk importance table, proceed to Step 12.

Step 11 Determine the row to which the finding should be assigned based on the following:

- a. Row 1: If left uncorrected, the finding could reasonably be expected to impair the design function of only one train of a multi-train system.
- b. Row 2: If left uncorrected, the finding could reasonably be expected to impair a design function of multiple trains, but not all trains of the associated system.
- c. Row 3: If left uncorrected, the finding could reasonably be expected to impair a design function of all trains of the associated system. (If the finding could reasonably be expected to impair the design function of a single train system, it is assigned to Row 3).

Note 1: If the finding represents a failure to meet a design standard or requirement (e.g. ASME) associated with work on a system train, it is assumed that the finding impairs the design function of that train.

Step 12 If the finding could impair a design function of a structure or a portion of a structure in the risk importance table, continue with the following steps. If the finding does not involve a system or structure listed in the low, intermediate, or high column in the risk importance table, the finding is GREEN.

- a. Row 1: Findings determined not to impair the design function of a structure or a portion of a structure.
- b. Row 2: Findings associated with a portion of a structure such that reasonable assurance is not provided that the portion of the structure can meet its design function.
- c. Row 3: Findings associated with structures such that reasonable assurance is not provided that the structure can meet its design function.

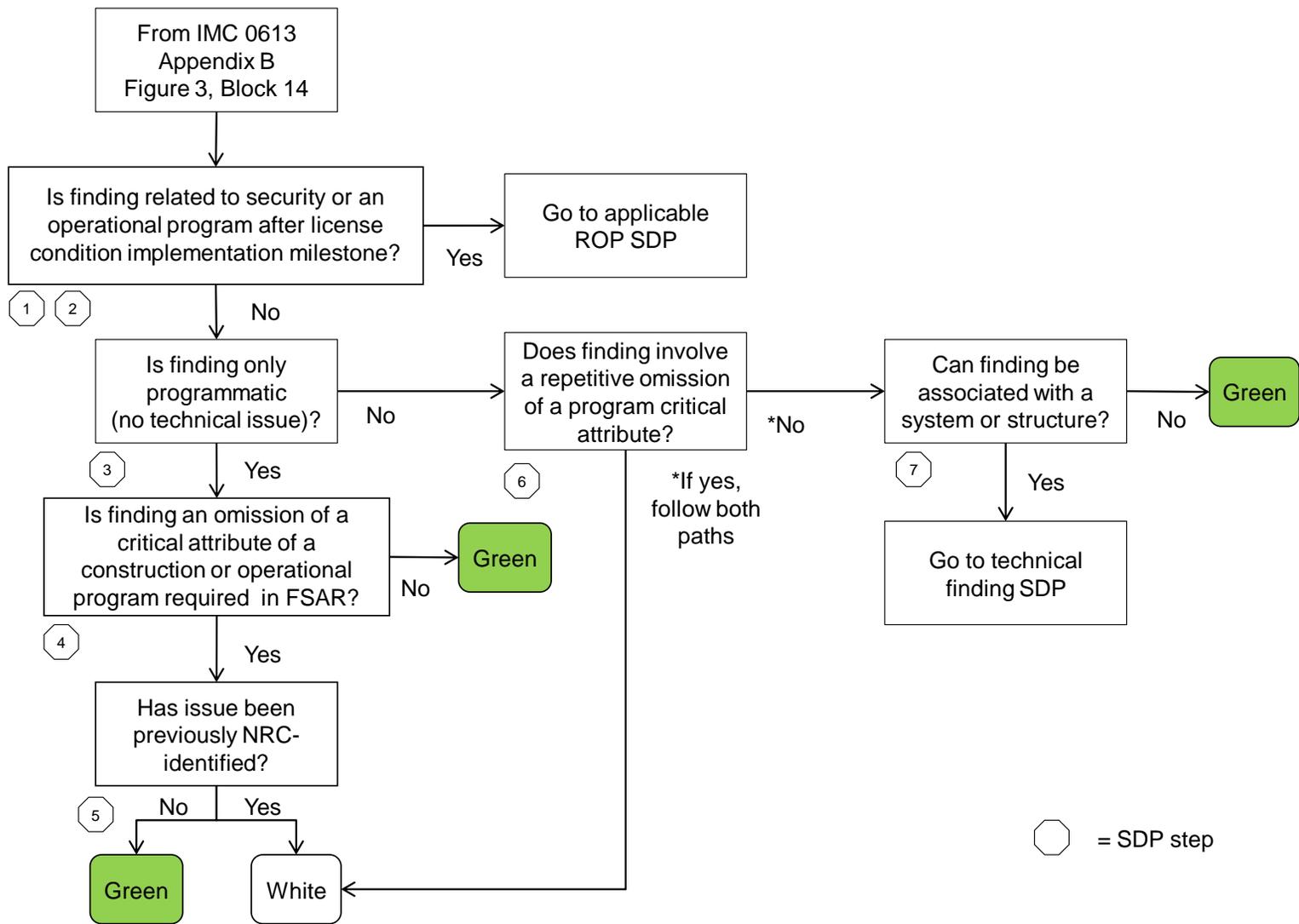
Step 13 If the NRC has identified that the finding is a repetitive SCAQ, the finding will be assigned to the next highest row in the matrix.

NOTE: To be repetitive, corrective actions for the original SCAQ should have been implemented and had a reasonable opportunity to be effective.

Step 14 Determine the significance of the finding.

- a. Findings in Row 1 have a significance of GREEN.
- b. Findings in the very low risk importance column have a significance of GREEN.
- c. Findings in Row 2 and the very low, low, and intermediate risk importance columns have a significance of GREEN.
- c. Findings in Row 2 and the high risk importance column have a significance of WHITE.
- d. Findings in Row 3 and the very low and low risk importance columns have a significance of GREEN.
- e. Findings in Row 3 and the intermediate risk importance column have a significance of WHITE.
- f. Findings in Row 3 and the high risk importance column have a significance of YELLOW.
- g. Findings in Row 4 and the low risk importance column have a significance of WHITE.
- h. Findings in Row 4 and the intermediate risk importance column have a significance of YELLOW.
- i. Findings in Row 4 and the high risk importance column have a significance of RED.

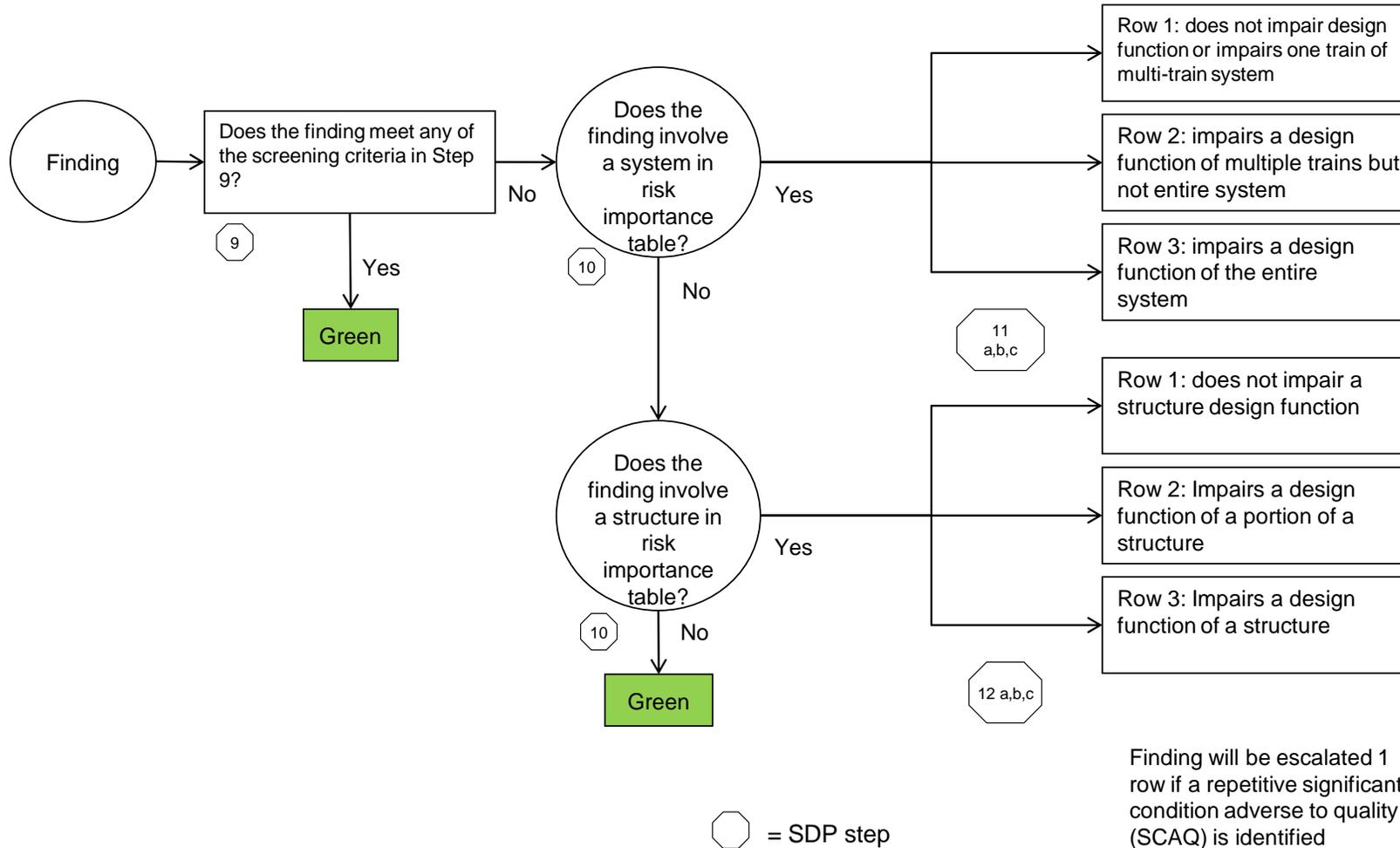
## Construction Programmatic SDP



### Construction Technical Finding SDP

		<b>AP 1000 Construction Significance Determination Matrix</b>			
<b>Quality of Construction</b>	Row 4	<b>Green</b>	<b>White</b>	<b>Yellow</b>	<b>Red</b>
	Row 3	<b>Green</b>	<b>Green</b>	<b>White</b>	<b>Yellow</b>
	Row 2	<b>Green</b>	<b>Green</b>	<b>Green</b>	<b>White</b>
	Row 1	<b>Green</b>	<b>Green</b>	<b>Green</b>	<b>Green</b>
		<b>Very Low</b>	<b>Low</b>	<b>Intermediate</b>	<b>High</b>
		<b>System/Structure Risk Importance</b>			

## Construction Technical Finding SDP Matrix Quality of Construction Y – Axis Flow Diagram



**SYSTEM/STRUCTURE RISK IMPORTANCE TABLE FOR AP1000  
CONSTRUCTION TECHNICAL FINDING SDP MATRIX X-AXIS**

<b>SYSTEMS</b>			
<b>VERY LOW</b>	<b>LOW</b>	<b>INTERMEDIATE</b>	<b>HIGH</b>
ALL OTHER SYSTEMS:  SFS, SGS, ETC...	PXS (ACC)	PXS (CMT)	PMS
	DAS	PXS (PRHR)	IDS
	ECS	PLS	PXS (IRWST)
	CNS (ISOLATION)	EDS	RCS
	PCS		PXS (Containment sump recirculation)
	RNS		
	CCS		
	SWS		
	VLS		
	PXS (IVR)		
	VBS (FANS)		
<b>STRUCTURES</b>			
<b>VERY LOW</b>	<b>LOW</b>	<b>INTERMEDIATE</b>	<b>HIGH</b>
ALL OTHER STRUCTURES:  Turbine Building, EDG Building, Rad Waste Building, Yard, Site Grade, Non 1E Cable Raceways	ANNEX BUILDING	CONTAINMENT	STRUCTURAL SECTIONS LISTED IN AP1000 TIER 1, SECTION 3.3. TABLE 3.3-7 OR WHOSE STRUCTURAL INTEGRITY IS REQUIRED TO ENSURE FUNCTIONALITY OF SYSTEMS IN THE HIGH COLUMN
		SHIELD BUILDING	
		AUXILIARY BUILDING	
		NUCLEAR ISLAND BASEMAT	
		1E CABLE RACEWAYS	

Guidance

To ensure consistency, systems are listed using their official three letter designation from the AP1000 DCD, Tier 1, Introduction, page 1.4-1. Using this convention, the RCS includes the automatic depressurization system (ADS). Some systems were split into smaller segments:

PXS (ACC): Accumulators

PXS (CMT): Core makeup tanks

PXS (PRHR): Passive RHR

PXS (IRWST): In-containment refueling water storage tank

CNS (ISOLATION): Containment isolation valves

PXS (IVR): Features of the PXS related to in-vessel retention of molten core

VBS (FANS): Main control room and I&C rooms B/C ancillary fans

When spacing requirements are specified for more than one structure, the importance of the more important structure is used. For example, a finding related to inadequate spacing between the turbine building and the aux building would be placed in the intermediate column.

Similarly, where a construction deficiency associated with a lower risk system or structure impacts a higher risk system or structure, the higher risk value is used.

Some structures contain design features that are relied upon for system train separation or protection against hazards such as fire, flooding, etc. Findings associated with these structural features should consider the number of system trains that are impacted.

Systems were placed into columns based on their RAW values as determined by SPAR model calculations and input from Westinghouse PRA staff. The D-RAP list (DCD, Tier 1, Table 17.4-1) was reviewed to determine if additional placement criteria should be considered. Some systems were assigned a risk importance designation based on the following criteria:

1. System performs a post-72 hour safety function
2. System is safety significant during shutdown operations
3. System is important to LERF
4. System is important during a severe accident

Structures were assigned to risk importance columns based on the review of the equipment contained within them and the judgment that the risk importances should be comparable. Reactor coolant system (RCS) piping and components were assigned to the high risk significance column due to the role they play in maintaining pressure boundary and preventing coolant system leakage. The RCS includes the pressure boundary components and pipe segments that must meet ASME Section III requirements. They are identified by DCD, Revision 19, Tier 1, Tables 2.1.2-1 and 2.1.2-2 respectively.

Restraints and supports and embedded plates (e.g., pipe hangers, snubbers, anchor bolts) will be considered part of the system to which they support.

Sensors will be classified according to their DCD tag numbers. For example, the RCS hot leg 1 flow sensors have tags RCS-101A/B/C/D. They will be considered part of the RCS. It is recognized that some sensors may provide input to a function (e.g. trip, control) with higher or lower risk importance than the system where the sensor is physically located. These sensors may be moved to a different column based on a technical justification.

## AP 1000 System Design Function Definitions

CCS	<p>The component cooling water system (CCS) removes heat from various plant components and transfers this heat to the service water system (SWS) during normal modes of plant operation including power generation, shutdown and refueling. The CCS has two pumps and two heat exchangers. The CCS preserves containment integrity by isolation of the CCS lines penetrating the containment.</p> <p>The CCS provides the nonsafety-related functions of transferring heat from the normal residual heat removal system (RNS) during shutdown and the spent fuel pool cooling system during all modes of operation to the SWS.</p>
CNS (ISOLATION)	<p>The containment system (CNS) is the collection of boundaries that separates the containment atmosphere from the outside environment during design basis accidents.</p> <p>The CNS provides the safety-related function of containment isolation for containment boundary integrity and provides a barrier against the release of fission products to the atmosphere.</p>
DAS	<p>The diverse actuation system (DAS) initiates reactor trip, actuates selected functions, and provides plant information to the operator.</p> <p>The DAS provides the following nonsafety-related functions:</p> <ul style="list-style-type: none"> <li>a) The DAS provides an automatic reactor trip on low wide-range steam generator water level or on low pressurizer water level separate from the PMS.</li> <li>b) The DAS provides automatic actuation of selected functions, as identified in Table 2.5.1-1, separate from the PMS.</li> <li>c) The DAS provides manual initiation of reactor trip and selected functions, as identified in Table 2.5.1-2, separate from the PMS. These manual initiation functions are implemented in a manner that bypasses the control room multiplexers, if any; the PMS cabinets; and the signal processing equipment of the DAS.</li> <li>d) The DAS provides main control room (MCR) displays of selected plant parameters, as identified in Table 2.5.1-3, separate from the PMS.</li> </ul>
ECS	<p>The main ac power system (ECS) provides electrical ac power to nonsafety-related loads and non-Class 1E power to the Class 1E battery chargers and regulating transformers during normal and off-normal conditions.</p> <p>The ECS provides the following nonsafety-related functions:</p> <ul style="list-style-type: none"> <li>a) The ECS provides the capability for distributing non-Class 1E ac power from onsite sources (ZOS) to nonsafety-related loads listed in</li> </ul>

## AP 1000 System Design Function Definitions

	<p>Table 2.6.1-2.</p> <p>b) The 6900 Vac circuit breakers in switchgear ECS-ES-1 and ECS-ES-2 open after receiving a signal from the onsite standby power system.</p> <p>c) Each standby diesel generator 6900 Vac circuit breaker closes after receiving a signal from the onsite standby power system.</p> <p>d) Each ancillary diesel generator unit is sized to supply power to long-term safety-related post-accident monitoring loads and control room lighting and ventilation through a regulating transformer; and for one passive containment cooling system (PCS) recirculation pump.</p> <p>e) The ECS provides two loss-of-voltage signals to the onsite standby power system (ZOS), one for each diesel-backed 6900 Vac switchgear bus.</p> <p>f) The ECS provides a reverse-power trip of the generator circuit breaker which is blocked for at least 15 seconds following a turbine trip.</p>
EDS	<p>The non-Class 1E dc and uninterruptible power supply system (EDS) provides dc and uninterruptible ac electrical power to nonsafety-related loads during normal and off-normal conditions.</p> <p>The EDS provides the following nonsafety-related functions:</p> <p>a) Each EDS load group 1, 2, 3, and 4 battery charger supplies the corresponding dc switchboard bus load while maintaining the corresponding battery charged.</p> <p>b) Each EDS load group 1, 2, 3, and 4 battery supplies the corresponding dc switchboard bus load for a period of 2 hours without recharging.</p> <p>c) Each EDS load group 1, 2, 3, and 4 inverter supplies the corresponding ac load.</p>
IDS	<p>The Class 1E dc and uninterruptible power supply system (IDS) provides dc and uninterruptible ac electrical power for safety-related equipment during normal and off-normal conditions.</p> <p>The IDS provides the following safety-related functions:</p> <p>a) The IDS provides electrical independence between the Class 1E divisions.</p> <p>b) The IDS provides electrical isolation between the non-Class 1E ac power system and the non-Class 1E lighting in the MCR.</p> <p>c) Each IDS 24-hour battery bank supplies a dc switchboard bus load for a period of 24 hours without recharging.</p> <p>d) Each IDS 72-hour battery bank supplies a dc switchboard bus load for a period of 72 hours without recharging.</p> <p>e) The IDS spare battery bank supplies a dc load equal to or greater than the most severe switchboard bus load for the required period</p>

## AP 1000 System Design Function Definitions

	<p>without recharging.</p> <ul style="list-style-type: none"> <li>f) Each IDS 24-hour inverter supplies its ac load.</li> <li>g) Each IDS 72-hour inverter supplies its ac load.</li> <li>h) Each IDS 24-hour battery charger provides the protection and safety monitoring system (PMS) with two loss-of-ac input voltage signals.</li> <li>i) The IDS supplies an operating voltage at the terminals of the Class 1E motor-operated valves identified in Tier 1 Material subsections 2.1.2, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.2, and 2.3.6 that is greater than or equal to the minimum specified voltage.</li> </ul> <p>The IDS provides the following nonsafety-related functions:</p> <ul style="list-style-type: none"> <li>a) Each IDS 24-hour battery charger supplies a dc switchboard bus load while maintaining the corresponding battery charged.</li> <li>b) Each IDS 72-hour battery charger supplies a dc switchboard bus load while maintaining the corresponding battery charged.</li> <li>c) Each IDS regulating transformer supplies an ac load when powered from the 480 V motor control center (MCC).</li> <li>d) The IDS Divisions B and C regulating transformers supply their post-72 hour ac loads when powered from an ancillary diesel generator.</li> </ul>
PCS	<p>The passive containment cooling system (PCS) removes heat from the containment during design basis events.</p> <p>The PCS performs the following safety-related functions:</p> <ul style="list-style-type: none"> <li>a) The PCS delivers water from the PCCWST to the outside, top of the containment vessel.</li> <li>b) The PCS wets the outside surface of the containment vessel. The inside and outside of the containment vessel above the operating deck are coated with an inorganic zinc coating.</li> <li>c) The PCS provides air flow over the outside of the containment vessel by a natural circulation air flow path from the air inlets to the air discharge structure.</li> <li>d) The PCS drains the excess water from the outside of the containment vessel through the two upper annulus drains.</li> <li>e) The PCS provides a flow path for long-term water makeup to the passive containment cooling water storage tank (PCCWST).</li> <li>f) The PCS provides a flow path for long-term water makeup from the PCCWST to the spent fuel pool.</li> </ul> <p>The PCS performs the following nonsafety-related functions:</p> <ul style="list-style-type: none"> <li>a) The PCCAWST contains an inventory of cooling water sufficient for PCS containment cooling from hour 72 through day 7.</li> <li>b) The PCS delivers water from the PCCAWST to the PCCWST and</li> </ul>

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	<p>spent fuel pool simultaneously.</p> <p>c) The PCCWST includes a water inventory for the fire protection system.</p>
PLS	<p>The plant control system (PLS) provides for automatic and manual control of nonsafety-related plant components during normal and emergency plant operations. The PLS has distributed controllers and operator controls interconnected by computer data links or data highways.</p>
PMS	<p>The protection and safety monitoring system (PMS) initiates reactor trip and actuation of engineered safety features in response to plant conditions monitored by process instrumentation and provides safety-related displays. The PMS has the equipment identified in Table 2.5.2-1. The PMS has four divisions of Reactor Trip and Engineered Safety Features Actuation, and two divisions of safety-related post-accident parameter displays. The functional arrangement of the PMS is depicted in Figure 2.5.2-1 and the component locations of the PMS are as shown in Table 2.5.2-9.</p> <p>The PMS provides the following safety-related functions:</p> <p>a) The PMS initiates an automatic reactor trip, as identified in Table 2.5.2-2, when plant process signals reach specified limits.</p> <p>b) The PMS initiates automatic actuation of engineered safety features, as identified in Table 2.5.2-3, when plant process signals reach specified limits.</p> <p>c) The PMS provides manual initiation of reactor trip and selected engineered safety features as identified in Table 2.5.2-4.</p> <p>The PMS provides the following nonsafety-related functions:</p> <p>a) The PMS provides process signals to the plant control system (PLS) through isolation devices.</p> <p>b) The PMS provides process signals to the data display and processing system (DDS) through isolation devices.</p> <p>c) Data communication between safety and nonsafety systems does not inhibit the performance of the safety function.</p> <p>d) The PMS ensures that the automatic safety function and the Class 1E manual controls both have priority over the non-Class 1E soft controls.</p>
PXS (ACC)	<p>The passive core cooling system (PXS) provides emergency core cooling during design basis events.</p> <p>The PXS accumulators (ACC) sub-system provides the following safety-related function:</p> <p>The accumulators provide reactor coolant system (RCS) makeup, boration, and safety injection during design basis events.</p>

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<p>PXS (CMT)</p>	<p>The passive core cooling system (PXS) provides emergency core cooling during design basis events.</p> <p>The PXS core make-up tanks (CMT) sub-system provides the following safety-related functions:</p> <p>The CMTs provide reactor coolant system (RCS) makeup, boration, and safety injection during design basis events.</p>
<p>PXS (Containment sump recirculation)</p>	<p>The passive core cooling system (PXS) provides emergency core cooling during design basis events. The PXS containment sump recirculation sub-system provides reactor coolant system (RCS) makeup, boration, and safety injection as well as pH adjustment of water flooding the containment following design basis accidents.</p>
<p>PXS (IRWST)</p>	<p>The passive core cooling system (PXS) provides emergency core cooling during design basis events. The in-containment refueling water storage tank (IRWST) sub-system provides reactor coolant system (RCS) makeup, boration, and safety injection during design basis events.</p>
<p>PXS (IVR)</p>	<p>The passive core cooling system (PXS) in-vessel retention (IVR) function provides the capability to cool the exterior of the reactor pressure vessel during severe accidents and to prevent the lower head from failing, thus retaining the molten debris within the vessel.</p>
<p>PXS (PRHR)</p>	<p>The passive core cooling system (PXS) provides emergency core cooling during design basis events. The passive residual heat removal (PRHR) sub-system heat exchanger provides core decay heat removal during design basis events.</p>
<p>RCS</p>	<p>The reactor coolant system (RCS) removes heat from the reactor core and transfers it to the secondary side of the steam generators for power generation. The RCS contains two vertical U-tube steam generators, four sealless reactor coolant pumps (RCPs), and one pressurizer.</p> <p>The RCS provides the following safety-related functions:</p> <ul style="list-style-type: none"> <li>a) The pressurizer safety valves provide overpressure protection in accordance with Section III of the ASME Boiler and Pressure Vessel Code.</li> <li>b) The reactor coolant pumps (RCPs) have a rotating inertia to provide RCS flow coastdown on loss of power to the pumps.</li> <li>c) Each RCP flywheel assembly can withstand a design overspeed condition.</li> <li>d) The RCS provides automatic depressurization during design basis events.</li> <li>e) The RCS provides emergency letdown during design basis events.</li> </ul>

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	<p>The RCS provides the following nonsafety-related functions:</p> <ul style="list-style-type: none"> <li>a) The RCS provides circulation of coolant to remove heat from the core.</li> <li>b) The RCS provides the means to control system pressure.</li> <li>c) The pressurizer heaters trip after a signal is generated by the PMS.</li> </ul>
RNS	<p>The normal residual heat removal system (RNS) removes heat from the core and reactor coolant system (RCS) and provides RCS low temperature over-pressure (LTOP) protection at reduced RCS pressure and temperature conditions after shutdown. The RNS also provides a means for cooling the in-containment refueling water storage tank (IRWST) during normal plant operation.</p> <p>The RNS provides the following safety-related functions:</p> <ul style="list-style-type: none"> <li>a) The RNS preserves containment integrity by isolation of the RNS lines penetrating the containment.</li> <li>b) The RNS provides a flow path for long-term, post-accident makeup to the RCS.</li> </ul> <p>The RNS provides the following nonsafety-related functions:</p> <ul style="list-style-type: none"> <li>a) The RNS provides low temperature overpressure protection (LTOP) for the RCS during shutdown operations.</li> <li>b) The RNS provides heat removal from the reactor coolant during shutdown operations.</li> <li>c) The RNS provides low pressure makeup flow from the SFS cask loading pit to the RCS for scenarios following actuation of the automatic depressurization system (ADS).</li> <li>d) The RNS provides heat removal from the in-containment refueling water storage tank.</li> </ul>
SWS	<p>The service water system (SWS) transfers heat from the component cooling water heat exchangers to the atmosphere. The SWS operates during normal modes of plant operation, including startup, power operation (full and partial loads), cooldown, shutdown, and refueling. The SWS provides the nonsafety-related function of transferring heat from the component cooling water system (CCS) to the surrounding atmosphere to support plant shutdown and spent fuel pool cooling.</p>
VBS (FANS)	<p>The nuclear island nonradioactive ventilation system (VBS) serves the main control room (MCR), control support area (CSA), Class 1E dc equipment rooms, Class 1E instrumentation and control (I&amp;C) rooms, Class 1E electrical penetration rooms, Class 1E battery rooms, remote shutdown room (RSR), reactor coolant pump trip switchgear rooms, adjacent corridors, and passive containment</p>

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	<p>cooling system (PCS) valve room during normal plant operation. The VBS consists of the following independent subsystems: the main control room/control support area HVAC subsystem, the class 1E electrical room HVAC subsystem, and the passive containment cooling system valve room heating and ventilation subsystem. The VBS provides heating, ventilation, and cooling to the areas served when ac power is available. The system provides breathable air to the control room and maintains the main control room and control support area areas at a slightly positive pressure with respect to the adjacent rooms and outside environment during normal operations. The VBS monitors the main control room supply air for radioactive particulate and iodine concentrations and provides filtration of main control room/control support area air during conditions of abnormal (high) airborne radioactivity. In addition, the VBS isolates the HVAC penetrations in the main control room boundary on "high-high" particulate or iodine radioactivity in the main control room supply air duct or on a loss of ac power for more than 10 minutes. This action supports operation of the main control room emergency habitability system (VES).</p> <p>The VBS provides the safety-related function to isolate the pipes that penetrate the MCR pressure boundary.</p> <p>The VBS provides the following nonsafety-related functions:</p> <ul style="list-style-type: none"> <li>a) The VBS provides cooling to the MCR, CSA, RSR, and Class 1E electrical rooms.</li> <li>b) The VBS provides ventilation cooling to the Class 1E battery rooms.</li> <li>c) The VBS maintains MCR and CSA habitability when radioactivity is detected.</li> <li>d) The VBS provides ventilation cooling via the ancillary equipment in Table 2.7.1-3 to the MCR and the division B&amp;C Class 1E I&amp;C rooms.</li> </ul>
VLS	<p>The containment hydrogen control system (VLS) limits hydrogen gas concentration in containment during accidents.</p> <p>The VLS provides the non-safety related function to control the containment hydrogen concentration for beyond design basis accidents.</p>

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<p>1E Cable Raceways</p>	<p>a) Class 1E electrical cables, fiber optic cables associated with only one division, and raceways are identified according to applicable color-coded Class 1E divisions.</p> <p>b) Class 1E divisional electrical cables and communication cables associated with only one division are routed in their respective divisional raceways.</p> <p>c) Separation is maintained between Class 1E divisions in accordance with the fire areas as identified in Table 3.3-3.</p> <p>d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.</p> <p>e) Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.</p>
<p>Annex Building</p>	<p>The portion of the annex building adjacent to the nuclear island is a structural steel and reinforced concrete seismic Category II structure and houses the control support area, non-1E electrical equipment, and hot machine shop.</p> <p>Walls and floors of the annex building as defined on Table 3.3-1, except for designed openings and penetrations, provide shielding during normal operations.</p>
<p>Auxiliary Building</p>	<p>The auxiliary building is reinforced concrete and houses the safety-related mechanical and electrical equipment located outside the containment and shield buildings.</p> <p>Design Description:</p> <p>a) The boundaries between mechanical equipment rooms and the electrical and instrumentation and control (I&amp;C) equipment rooms of the auxiliary building as identified in Table 3.3-2 are designed to prevent flooding of rooms that contain safety-related equipment up to the maximum flood level for each room defined in Table 3.3-2.</p> <p>b) The boundaries between the following rooms, which contain safety-related equipment – passive core cooling system (PXS) valve/accumulator room A (11205), PXS valve/accumulator room B (11207), and chemical and volume system (CVS) room (11209) – are designed to prevent flooding between these rooms.</p> <p>c) The radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" contains adequate volume to contain the liquid volume of faulted liquid radwaste system (WLS) storage tanks. The available room volume of the radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" exceeds the volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11).</p>

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<p>Containment</p>	<p>The containment (the steel containment vessel and the containment internal structure). The containment vessel is a cylindrical welded steel vessel with elliptical upper and lower heads, supported by embedding a lower segment between the containment internal structures concrete and the basemat concrete. The containment internal structure is reinforced concrete with structural modules used for some walls and floors.</p> <p>Design Description:</p> <ul style="list-style-type: none"> <li>a) The containment and its penetrations are designed and constructed to ASME Code Section III, Class MC.</li> <li>b) The containment and its penetrations retain their pressure boundary integrity associated with the design pressure.</li> <li>c) The containment and its penetrations maintain the containment leakage rate less than the maximum allowable leakage rate associated with the peak containment pressure for the design basis accident.</li> <li>d) The containment vessel greater than 7 feet above the operating deck provides a heat transfer surface. A free volume exists inside the containment shell above the operating deck.</li> <li>e) The containment free volume below elevation 108' provides containment floodup during a postulated loss-of-coolant accident.</li> <li>f) The reactor cavity sump has a minimum concrete thickness as shown on Table 3.3-5 between the bottom of the sump and the steel containment.</li> </ul>
<p>Structural Sections Listed in AP1000 Tier 1, Section 3.3. Table 3.3-7 or Whose Structural Integrity is Required to Ensure Functionality of Systems in This Column (e.g. IRWST wall)</p>	<p>See applicable definitions for buildings associated with the applicable structural section.</p>
<p>Nuclear Island Basemat</p>	<p>The nuclear island structures, consisting of the containment building, shield building, and auxiliary building are founded on a common 6-foot-thick, cast-in-place, reinforced concrete basemat foundation. The top of the foundation is at elevation 66'-6".</p> <p>The basemat of the nuclear island have a water barrier up to site grade.</p> <p>From Tier 2 information: The analysis and design of the</p>

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	<p>foundation for the nuclear island structures are according to ACI-349 with margins of structural safety as specified within it. The limiting conditions for the foundation medium, together with a comparison of actual capacity and estimated structure loads, are described in Section 2.5. The minimum required factors of safety against sliding, overturning, and flotation for the nuclear island structures are given in Table 3.8.5-1.</p>
Shield Building	<p>The shield building cylinder is a composite steel and concrete (SC) structure except for the portion surrounded by the auxiliary building, which is reinforced concrete (RC). The shield building, in conjunction with the internal structures of the containment building, provides shielding for the reactor coolant system and the other radioactive systems and components housed in the containment.</p> <p>The shield building roof and the passive containment cooling system (PCS) storage tank support and retain the PCS water. The passive containment cooling system tank has a stainless steel liner which provides a barrier on the inside surfaces of the tank. Leak chase channels are provided over the tank boundary liner welds.</p>

Note: The following design functions apply to multiple structures and should be applied to structural findings when applicable.

1. The nuclear island structures include the containment (the steel containment vessel and the containment internal structure) and the shield and auxiliary buildings. The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads without loss of structural integrity and the safety-related functions. The design bases loads are those loads associated with:
  - Normal plant operation (including dead loads, live loads, lateral earth pressure loads, and equipment loads, including hydrodynamic loads, temperature and equipment vibration);
  - External events (including rain, snow, flood, tornado, tornado generated missiles and earthquake); and
  - Internal events (including flood, pipe rupture, equipment failure, and equipment failure generated missiles).
2. Site grade level is located relative to floor elevation 100'-0" per Table 3.3-5. Floor elevation 100'-0" is defined as the elevation of the floor at design plant grade.
3. The key dimensions of the nuclear island structures are as defined on Table 3.3-5.

## AP 1000 Structure Design Function Definitions

4. Walls and floors of the nuclear island structures as defined on Table 3.3-1, except for designed openings and penetrations, provide shielding during normal operations.
5. Separation is provided between the structural elements of the turbine, annex, and radwaste buildings and the nuclear island structure. This separation permits horizontal motion of the buildings in a safe shutdown earthquake without impact between structural elements of the buildings.
6. Systems, structures, and components identified as essential targets are protected from the dynamic and environmental effects of postulated pipe ruptures.

**Table 1- SDP SCREENING WORKSHEET FOR ALL CORNERSTONES**

<b>Site/Title:</b>
<b>Cornerstone:</b>
<b>Performance Deficiency:</b>
<b>Type of Finding:</b>
<p><b>Programmatic Finding</b> (describe the construction or operational program critical attribute that was not adequately addressed, its licensing basis, and describe the finding and why it is or is not repetitive).</p> <p>Program Critical Attribute:</p> <p>Licensing Basis:</p> <p>Description:</p>
<p><b>Technical Finding</b> (list the affected system or structure, the design function that was impaired, the number of trains impaired and the total number of trains, a brief description of how the design function was impaired, and the applicable matrix row and column that applies).</p> <p>System or Structure:</p> <p>Design Function Impaired:</p> <p># of Trains Impaired/Total # of trains:</p> <p>Description:</p> <p>Matrix Row:      Matrix Column:</p>
Final Significance Determination Color:

## IMC 2519P, APPENDIX M

### CONSTRUCTION SIGNIFICANCE DETERMINATION PROCESS USING QUALITATIVE CRITERIA - PILOT

#### 1.0 SCOPE

This Appendix provides guidance to the NRC management and inspection staff for assessing significance of inspection findings when the construction significance determination process (SDP) guidance is not adequate to provide reasonable estimates of the significance of inspection findings within the established SDP timeliness goal of 90 days or less.

#### 2.0 BASIS

A relatively small number of inspection findings may challenge the staff in making timely assessments. In these cases, the safety significance of such findings should ultimately be determined using qualitative engineering judgement and regulatory oversight experience, which is acceptable in a risk-informed process. This Appendix provides guidance to allow the NRC to apply a consistent process using qualitative and quantitative attributes for risk-informed management decision making.

#### 3.0 APPLICABILITY

In all cases, a clear and well understood licensee performance deficiency must be established. The issue must also be evaluated as having greater than minor significance using criteria in Inspection Manual Chapter (IMC) 0613, Appendix B and Appendix E. The guidance in this Appendix should be applied when SDP methods and tools are not available or are not adequate to determine the significance of the finding within the established SDP timeliness goal of 90 days. The use of this qualitative review process may be identified by inspectors and concurred upon by their immediate regional management.

#### 4.0 EVALUATION PROCESS

##### 4.1 Initial Screening by Inspectors

4.1.1 Each issue must first be screened using IMC 0613, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Findings." Issues screened as minor are not subject to further evaluation by this Appendix.

4.1.2 A bounding evaluation (i.e., worst case analysis) should be initially performed, if feasible, using best available information to determine the significance of the issue. If the bounding evaluation shows that the finding is of very low safety significance, the

finding is Green and it can be documented in accordance with Step 4.3, below.

- 4.1.3 If the bounding evaluation indicates that the finding is potentially greater than Green, then proceed to Step 4.2.

## **4.2 Attributes**

- 4.2.1 For potentially greater than Green findings, evaluate the following attributes to determine the significance of the finding. Consider only attributes which relate directly to the significance of the performance deficiency and document the basis for the consideration.

- 4.2.1.1 The effectiveness of one or more Defense-in-Depth elements impacted.
- 4.2.1.2 The extent to which the condition of the performance deficiency affects other equipment (e.g., common cause results in widespread construction of unknown quality).
- 4.2.1.3 Period of time the performance deficiency existed and if opportunity to identify the finding during such period was missed (construction experience, licensee's programs such as quality control).
- 4.2.1.4 The likelihood that the licensee's corrective actions would successfully mitigate the performance deficiency.

## **4.3 Process and Documentation**

- 4.3.1 The decision-making logic should be documented using Table 4.1, "Qualitative Decision-Making Attributes for NRC Management Review," and should be included in the Significance and Enforcement Review Panel (SERP) package as described in IMC 2519P, Attachment 01, "Significance and Enforcement Review Panel."
- 4.3.2 For Green findings, document the quantitative or qualitative method used including the results in the inspection report.

END

**TABLE 4.1**  
**Qualitative Decision-Making Attributes for NRC Management Review**

Decision Attribute	Applicable to Decision?	Basis for Input to Decision - Provide qualitative and/or quantitative information for management review and decision making.
Finding can be bounded using qualitative and/or quantitative information?		
The extent the performance deficiency affects other equipment.		
Period of time affect on the performance deficiency.		
The likelihood that the licensee's corrective actions would successfully mitigate the performance deficiency.		
Additional qualitative circumstances associated with the finding that regional management should consider in the evaluation process.		

Result of management review (COLOR): \_\_\_\_\_

Attachment 3

Revision History - IMC 2519P

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	12/21/11 CN 11-042 ML113180355	This manual chapter supports the Construction Reactor Oversight Process for significance determination of findings. The significance determination process detailed in the manual chapter is designed to characterize the significance of inspection findings for the NRC licensee performance assessment process using risk insights, as appropriate.	Yes	12/31/2011	