Enclosure 2

Handouts and Presentations Discussed during the
March 17, 2016 ROP WG Public Meeting

Dated March 31, 2016

U.S.NRC

United States Nuclear Regulatory Commission

Protecting People and the Environment

Streamlining the Significance Determination Process

NRC Public Meeting with Industry

March 17, 2016

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Agenda

- Discuss status and scope of the SDP Streamlining initiative
- Discuss proposed pilot activity
- Questions and answers with the public

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Status of SDP Streamlining

- Affected documents being prepared for both internal and external stakeholder review
- Doc's ready for 30-day internal review by April 1, 2016
- Documents include:
  - IMC 0609 (SDP Program Guidance)
  - IMC 0609 Attachment 1 (SERP Process)
  - IMC 0609.04 (Initial Characterization of Findings)
  - IMC 0307 Appendix A (SDP Metric)

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Key Changes to SDP

- Use of “readily available” information
- Define when SDP timeliness clock starts
  - relate to 120-day inspection metric
- Improve communications with licensees
  - 30 day letter suggestion abandoned
- Inspection Finding Review Board (IFRB)
- Internal SERP process changes

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Integrated Risk-informed Decision-making (IRDM)

- IRDM has taken a separate path from other SDP streamlining changes
- A separate working group is being established led by NRR's Division of Risk Assessment
- Expected to take a number of months to address a wide degree of views
- Focus is a revision to IMC 0609 - Appendix M

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Readily Available Information

Information used to determine the safety or security significance of the inspection finding taking into account the objective to produce a timely regulatory decision consistent with the SDP timeliness metric of ≤ 90 days.

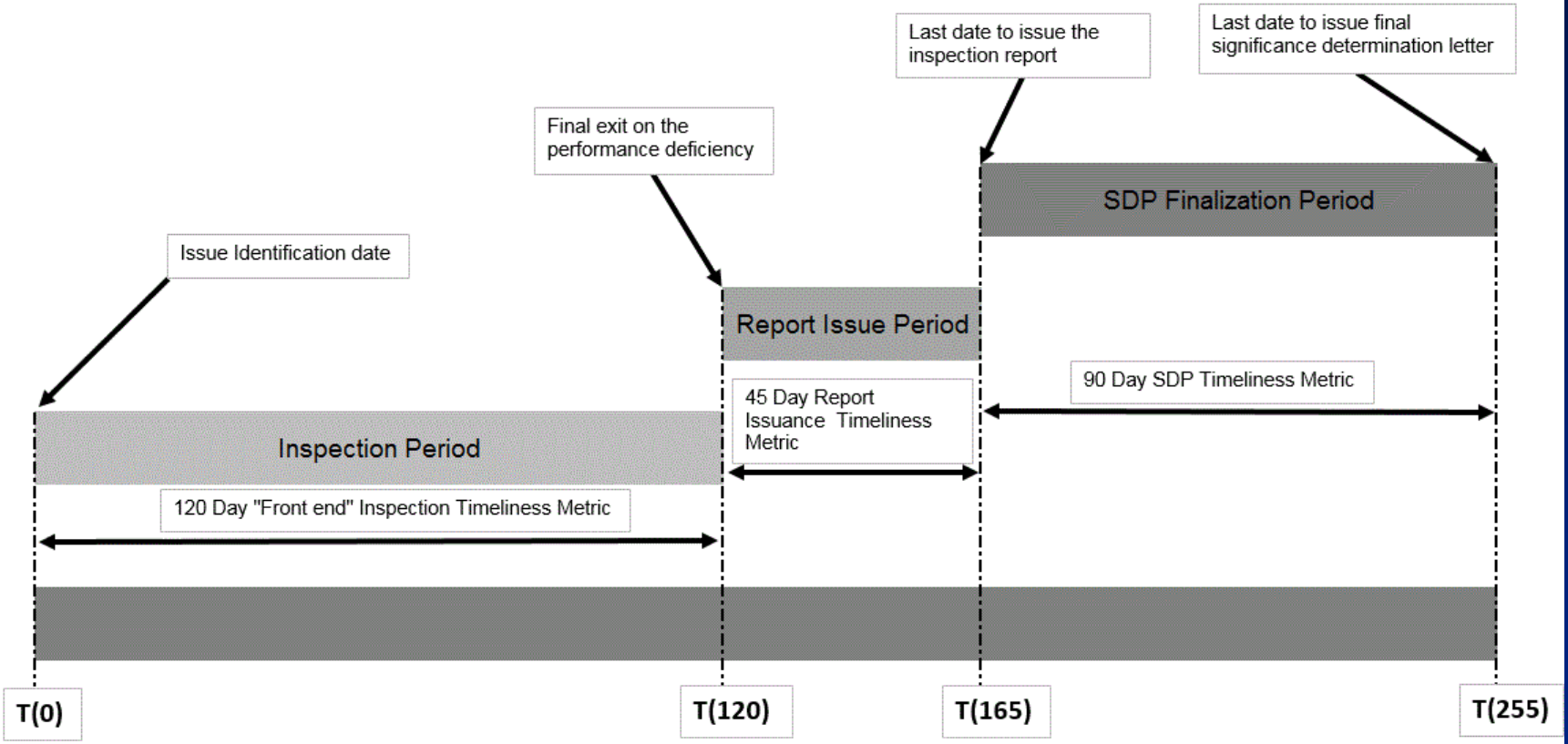
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

SDP Timeliness

The time it takes to assess the safety or security significance of an inspection finding. The goal for SDP timeliness is to complete all final significance determinations within 90 days from the issue date of the first official correspondence that describes the finding until the final significance letter is issued.

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Inspection and Significance Determination Process (SDP) Metrics



Note: These timeliness metrics represent the overall maximum time to reach the final significance determination and do not preclude earlier completion of the final significance determination

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Inspection Finding Review Board

- NRC management oversight and project oriented process to improve overall efficiency and effectiveness of the SDP
- Begins when inspection finding does not screen to Green
- Aligns all stakeholders on the performance deficiency and the actions, resources and schedule needed to determine final significance
- Region-based with an executive chairman who manages finding from the beginning to final decision

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

SERP Process Changes

- Assign a designated chairman
- Reduce peer reviews from two to one
- Reduce SERP worksheet information presented to decision-makers
- All SERP members to participate in the Reg. Conference
- Streamline the document overall

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Designing a Pilot

- Goal expected to begin pilot in June 2016 ending when sufficient experience obtained – at least two GTG findings per region.
- All licensees envisioned to be involved as GTG findings occur.
- All cornerstones involved?
- Since changes are internal to NRC table top exercises deemed not needed
- An effectiveness review will be performed

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Question and Answer Period

AP1000 SSC Performance Verification Matrix

Purpose: The information in this matrix is draft and is only meant as a tool to help develop a framework to ensure key AP1000 Structures, Systems and Components (SSC) functions are adequately monitored and evaluated; ensure that potential causes and effects of challenges to these SSCs are well-understood so that – consistent with its stated mission - the ROP can:

- Collect information about licensee performance
- Assess the information for its safety significance
- Provide an appropriate licensee and NRC response

The staff will engage affected internal and external stakeholders during the development and validation (e.g., tabletops, pilots, etc.) of the methodology and approach. Furthermore, additional thought should be given to other plant challenges (e.g., seismic events) before finalizing the matrix. To further define and frame the baseline inspection program for the AP1000, the staff envisions developing a Risk Information Matrix similar to those developed for the original ROP as included in SECY-99-007, Attachment III.

Definitions:

SSC: A structure, system, or component that warrants regulatory oversight during operations. The three letter designators used match the plant system nomenclature specified in the AP1000 Design Control Document (DCD). SSCs that are classified as Regulatory Treatment of Non-Safety Systems (RTNSS) are identified. Reference: AP1000 DCD.

IMPORTANCE: The importance of each system is obtained from Inspection Manual Chapter (IMC) 2519 – Construction Significance Determination Process. The importance of each system is determined by the mean core damage frequency (CDF) when the SSC is assumed to be completely unavailable (Risk Achievement Worth). IMC 2519, Appendix A-10 categorizes plant systems into High (>1E-4), Intermediate (1E-4 to 1E-5), Low (1E-5 to 1E-6), and Very Low (<1E-6) Risk.

KEY SSC FUNCTIONS: Safety-related and/or risk-significant functions performed by the SSC.

IMPORTANT ATTRIBUTES: In plain English, features of the SSC and its support systems that provide assurance the system performance (including defense-in-depth, reliability, and availability) will be acceptable. Safety related Passive SSCs that require a TS Surveillance 10 year System Level Operability Test are identified. References: Risk-Insights for the Review of the AP1000 Design and AP1000 Technical Specifications.

VERIFY BY PI / VERIFY BY INSPECTION: Inspections, tests, analyses, and acceptance criteria (ITAAC) and pre-operational/start-up testing will provide reasonable assurance that initial SSC performance is acceptable. What tools (PIs, inspection, etc.) will be appropriate to ensure that SSC safety margins are not degraded during operations? RTNSS SSCs need special attention to ensure the required regulatory treatment is maintained.

TREATMENT BY SDP: Are there unique aspects to the SSC (e.g., passive cooling, digital I&C) that should be considered when evaluating inspection findings? Is the SSC of such low risk importance that we can consider using a simple screening criteria?

SSC *Not comprehensive	Location + Active or Passive	IMPORTANCE (magnitude of CDF if SSC unavailable)	KEY SSC FUNCTIONS	IMPORTANT ATTRIBUTES	VERIFY BY PI?	VERIFY BY INSPECTION ?	TREATMENT BY SDP
Accumulators (PXS)	Cont Bldg – Passive	LOW	safety injection to RCS to provide adequate core cooling for all LOCA sizes	2 accumulators; Requires 10 year System Level OPERABILITY Testing Program			
Chemical and Volume Control System (CVS)	Aux Bldg – Active	VERY LOW	Maintain reactor coolant system fluid purity and activity level within acceptable limits. Maintain the required coolant inventory in the reactor coolant system Maintain the reactor coolant chemistry conditions by controlling the concentration of boron and lithium hydroxide. Maintain the proper level of dissolved hydrogen in the reactor coolant during power operation Achieve the proper oxygen level prior to startup after each shutdown. Fill and pressure test the reactor coolant system (with connections for hydrostatic testing) Provide makeup water to the primary side systems that require borated reactor grade water Provide pressurizer auxiliary spray water for depressurization	2 trains with one pump and one letdown AOV isolation valve each; The chemical and volume control system (CVS) provides a safety-related means to terminate inadvertent RCS boron dilution and to preserve containment integrity by isolation of the CVS lines penetrating the containment.			
Component Cooling Water System (CCS) ***RTNSS***	Turbine Bldg - Active	LOW	The component cooling water system is a non-safety-related, closed loop cooling system that transfers heat from various components needed for plant operation and removes core decay heat and sensible heat for normal reactor shutdown and cooldown.	2 trains with one pump each and backed up by the standby diesels			
Protection and Monitoring System (PMS)	Aux Bldg	HIGH	Digital I&C; likely to involve novel concepts	Functions with software, hardware and display panels			
Automatic	Cont Bldg -	HIGH	ADS valves open when	4 stages of 2			

SSC *Not comprehensive	Location + Active or Passive	IMPORTANCE (magnitude of CDF if SSC unavailable)	KEY SSC FUNCTIONS	IMPORTANT ATTRIBUTES	VERIFY BY PI?	VERIFY BY INSPECTION ?	TREATMENT BY SDP
Depressurization System (ADS)	Passive		actuated and remain open for the duration of an automatic depressurization event	valves each; First 3 stages use MOVs; 4th stage uses MOV/squib valves; Valves are powered by Class 1E DC			
Core Makeup Tanks (PXS)	Cont Bldg – Passive	INTERMEDIATE	Provide core decay heat removal during transients, accidents or whenever the normal heat removal paths are lost	Requires 10 year System Level OPERABILITY Testing Program			
In-Containment RWST, Injection Mode (PXS)	Cont Bldg – Passive	HIGH	Provide core decay heat removal during transients, accidents or whenever the normal heat removal paths are lost Provide RCS makeup and boration during transients or accidents when the normal reactor coolant system makeup supply from the chemical and volume control system is unavailable or is insufficient Provide safety injection to the reactor coolant system to provide adequate core cooling for the complete range of loss of coolant accidents, up to and including the double-ended rupture of the largest primary loop reactor coolant system piping. Provide for chemical addition to the containment during post-accident conditions to establish flood-up chemistry conditions that support radionuclide retention with high radioactivity in containment and to prevent corrosion of containment equipment during long-term flood-up conditions.	2 separate injection lines with MOV/Squib valves; Requires 10 year System Level OPERABILITY Testing Program			
In-Containment RWST, Recirc Mode	Cont Bldg – Passive	HIGH	See above	2 separate recirc lines with			

SSC *Not comprehensive	Location + Active or Passive	IMPORTANCE (magnitude of CDF if SSC unavailable)	KEY SSC FUNCTIONS	IMPORTANT ATTRIBUTES	VERIFY BY PI?	VERIFY BY INSPECTION ?	TREATMENT BY SDP
(PXS)				MOV/Squib valves; Requires 10 year System Level OPERABILITY Testing Program			
Main AC Power (ECS) ***RTNSS***	Annex Bldg - Active	LOW	Powers the reactor, turbine, and balance of plant auxiliary electrical loads On loss of normal and preferred sources, ancillary diesel generators supply selected loads Provides input ac power for the Class 1E dc battery Safety-related reactor coolant pump breakers open to allow CMT operation	Non-Class 1E system			
Normal RHR (RNS) ***RTNSS***	Aux Bldg - Active	LOW	Typical RHR system	Non safety system apart from containment & RCS isolation functions; long term post-accident containment inventory makeup			
Passive Containment Cooling System (PCS)	Shield Bldg – Passive	LOW	Reduce the containment temperature and pressure following a loss of coolant accident (LOCA) or main steam line break (MSLB) inside the containment	Requires 10 year System Level OPERABILITY Testing Program; Containment must be vented after 24 hours; PCS annulus drains inspected every 2 years			
Plant Control System (PLS)	Aux Bldg	MODERATE	Establish and maintain plant operating conditions within prescribed limits Minimize challenges to the protection systems Allow operator monitoring and manual control while relieving the operator from routine tasks	Non-safety related automatic and manual control of non-safety related equipment			
Reactor Coolant System (RCS)	Cont Bldg	LOW	Transfers heat to the steam and power				

SSC *Not comprehensive	Location + Active or Passive	IMPORTANCE (magnitude of CDF if SSC unavailable)	KEY SSC FUNCTIONS	IMPORTANT ATTRIBUTES	VERIFY BY PI?	VERIFY BY INSPECTION ?	TREATMENT BY SDP
			conversion system (during power operation as well as the initial phase of plant cooldown) Transfers heat produced during the subsequent phase of plant cooldown and cold shutdown to the normal residual heat removal system				
Service Water System (SWS) ***RTNSS***	Turbine Bldg – Active	LOW	Supplies cooling water to remove heat from the non-safety-related component cooling water system heat exchangers in the turbine building, transferring it to the non-safety-related ultimate heat sink	2 trains; one running and the other in standby. Powered by onsite Diesels			
Startup Feedwater System (FWS) ***RTNSS***	Turbine Bldg – Active	VERY LOW	Supply feedwater to the steam generators during plant startup, hot standby and shutdown conditions, and during transients in the event of main feedwater system unavailability	This capability provides an alternate core cooling mechanism to the PRHR heat exchangers for non-LOCA or steam generator tube ruptures			
Steam Generator System (SGS)	Cont Bldg	VERY LOW	Remove heat from the reactor coolant system during power operation and anticipated transients as well as under natural circulation conditions				
DC-1E (IDS)	Aux Bldg – Passive	HIGH	Provides safety-related power for I&C and various valves needed for safe shutdown (both DC and AC, via inverters)	Four divisions; physical and electrical isolation important; two 24 hour and two 72 hour battery banks			
Passive RHR	Cont Bldg – Active	INTERMEDIATE	Long term decay heat removal; transfers heat from RCS into IRWST *Redundant to non-safety-related normal RHR (RNS)	Passive challenges to			

SSC *Not comprehensive	Location + Active or Passive	IMPORTANCE (magnitude of CDF if SSC unavailable)	KEY SSC FUNCTIONS	IMPORTANT ATTRIBUTES	VERIFY BY PI?	VERIFY BY INSPECTION ?	TREATMENT BY SDP
				PRHR[1]: Cracked tubes; Hx Fouling; High initial IRWST temp; Non-condensable gasses; Degraded insulation (lower thermal head); Thermal stratification; Bypass flow caused by leaking valve			
				Capability exists in control room to detect 500 gpm crack; assumed limit to prevent rupture			
				Gutter system and corresponding valves return condensed water to IRWST, ensuring long-term availability of inventory			
				Actuated by redundant parallel AOVs that fail open on loss of air, PMS signal or 1E power Requires 10 year System Level OPERABILITY Testing Program			
DC POWER (EDS) *****RTNSS*****	Annex Bldg - Active	INTERMEDIATE	The non-Class 1E dc and UPS system (EDS) provides dc and uninterruptible ac power to non-safety-related loads	2 separate power supply trains; each will last 2 hours after loss of all AC			
DGs	Annex Bldg - Active	VERY LOW	Due to passive systems, DGs do not provide a	Same as existing DGs.			

[1] These are generic to passive cooling systems that rely on thermal head. A specific list for each passive system could be developed, possibly with support from RES.

SSC *Not comprehensive	Location + Active or Passive	IMPORTANCE (magnitude of CDF if SSC unavailable)	KEY SSC FUNCTIONS	IMPORTANT ATTRIBUTES	VERIFY BY PI?	VERIFY BY INSPECTION ?	TREATMENT BY SDP
RTNSS			safety-related function but they are the preferred backup AC source, given LOOP.				
Offsite Power ***RTNSS***	Switchyard	VERY LOW	During plant startup, shutdown, and maintenance, the main ac power is provided from the high-voltage switchyard.	ac power source not required; Design includes connections to a preferred (offsite) power source and two non-safety-related onsite standby diesel generators.			
Diverse Actuation System (DAS) ***RTNSS***		LOW	Provide a non-safety-related system that serves as a diverse backup to the protection system for reactor trip and ESF actuation	Backup to PMS with diversity in signals used;			
Containment Hydrogen Control System (VLS)	Containment Bldg	LOW	The containment hydrogen control system is provided to limit the hydrogen concentration in the containment so that containment integrity is not endangered.	- Hydrogen concentration monitoring -Hydrogen control during and following a degraded core or core melt scenarios (provided by hydrogen igniters). In addition, two nonsafety-related passive autocatalytic recombiners (PARs) are provided for defense-in-depth protection against the buildup of hydrogen following a loss of coolant accident.			
In Vessel Retention of molten core (PXS - IVR)		LOW	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				

SSC *Not comprehensive	Location + Active or Passive	IMPORTANCE (magnitude of CDF if SSC unavailable)	KEY SSC FUNCTIONS	IMPORTANT ATTRIBUTES	VERIFY BY PI?	VERIFY BY INSPECTION ?	TREATMENT BY SDP
			and to prevent the lower head from failing, thus retaining the molten debris within the vessel.				
Main control room and I&C rooms B/C ancillary fans Nuclear Island Nonradioactive Ventilation System (VBS - FANS)		LOW	Monitors the main control room supply air for radioactive particulate and iodine concentrations Isolates the HVAC penetrations in the main control room boundary on high-high particulate or iodine concentrations in the main control room supply air or on extended loss of ac power Deliver the required air flow to the main control room to meet the ventilation and pressurization requirements for 72 hours Provide passive heat sinks capable of limiting the temperature rise for the main control room, instrumentation and control rooms, and dc equipment rooms Serves the main control room, technical control support center area, Class 1E dc equipment rooms, Class 1E instrumentation and control (I&C) rooms, Class 1E electrical penetration rooms, Class 1E battery rooms, remote shutdown room, reactor coolant pump trip switchgear rooms, adjacent corridors, and the passive containment cooling system (PCS) valve room	For post-72 hour actions, VBS MCR and I&C rooms B/C ancillary fans (VBS-MA-10A/B, -11, -12) are available to provide cooling of the MCR and the two I&C rooms (B/C) that provide post-accident monitoring			

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Problem Identification & Resolution (PI&R) Enhancement Public Workshop

AnnMarie Stone & Jack Rutkowski,
US NRC PI&R Working Group (ML15290A004)

March 17, 2016; 3:00 – 4:50 PM

ROP Public Meeting, NRC HQ

Workshop Outline

- Purpose of Workshop
- Background of Issue
- Approach to Address Issue
- Open Discussion
- Next Steps

Purpose of this Workshop

- To solicit comments and observations regarding the strengthening the NRC's assessment process of the licensee's Corrective Action Program:
  - Defining a ***marginal*** program
  - Defining NRC actions for handling a licensee with a ***marginal*** program

Background of Issue
Corrective Action Program Fundamentals

- A fundamental goal of the ROP is to establish confidence that a licensee is effectively detecting, correcting, and preventing problems which could impact cornerstone objectives

- A key premise of the ROP is that weaknesses in licensee problem identification and resolution programs will manifest themselves as performance issues which will be identified during the baseline inspection program or by performance indicators crossing predetermined thresholds.

Background of Issue Inspecting CAP (PI&R)

(IP 71152 Problem Identification & Resolution)

- **Several aspects of PI&R are *not* specifically addressed by PIs or other baseline inspections. These aspects include:**
  - **Review of precursors to events which occur relatively infrequently but could have significant consequences;**
  - **Assess whether potential "common cause" equipment failure concerns are addressed; and**
  - **Independently identify potentially "generic" concerns that a licensee may have missed;**
- **IP 71152 Problem Identification and Resolution addresses these aspects through routine PI&R reviews, semiannual trend reviews, annual follow-up of selected issues, and biennial team inspections**

8 Objectives of PI&R Inspection (1 of 2)

(IP 71152 Problem Identification & Resolution)

1. To evaluate the effectiveness of the licensee's corrective action program in identifying, prioritizing, evaluating, and correcting problems
2. To confirm that licensees are complying with NRC regulations regarding corrective action programs
3. To help the NRC gauge supplemental response when ROP Action Matrix thresholds are crossed
4. To confirm the licensee's appropriate use of industry and NRC operating experience

8 Objectives of PI&R Inspection (2 of 2)

(IP 71152 Problem Identification & Resolution)

5. To evaluate the effectiveness of licensee audits and self assessments
6. To confirm licensees have established a safety conscious work environment
7. To follow-up on corrective actions for selected previously-identified compliance issues (e.g. non-cited violations (NCVs))
8. To verify that licensees are identifying and placing potential 10 CFR 21 – REPORTING OF DEFECTS AND NON-COMPLIANCE issues into the Corrective Action Program (CAP) and appropriately evaluating them

Background of Issue
Insights from Implementation

- **Transition between Action Matrix Columns occur without regard to the health of a licensee's Corrective Action Program.**
- **Repeated observations and/or concerns with identifying, evaluating, assessing and resolving issues documented in biennial PI&R inspections.**

Background of Issue
Insights from Assessments

- Several NRC self-assessments and comments from public over several years provided valuable insights and recommendations for consideration:
  - **Enhance tools** to inspect, assess, and integrate health of licensee CAP into oversight process (inadequate problem identification, evaluation, and resolution performance should be identified prior to a supplemental inspection)
  - **Enhance inspection guidance and expectations** when assessing licensees with substantive cross-cutting issues

Background of Issue
Insights from Assessments

- Insights and recommendations (continued):
  - Enhance **periodic follow-up** to ensure long-term corrective actions to address past generic issues are implemented and maintained
  - Require licensees to **demonstrate improved performance** (readiness) prior to initiating supplemental inspection
  - Consider **trending findings** to identify programmatic licensee performance trends

Background of Issue
Insight from Assessment

- Insights and recommendations (continued)
  - Risk-significant performance issues should not be closed without **assurance / demonstration that corrective actions are sufficient / effective to prevent recurrence** (instances of poor follow-through have occurred that contributed to subsequent movement across the action matrix)
  - Enhance IP 71152 inspection, assessment, insight implementation to **clearly satisfy the intent of objective related to gauging supplemental inspection response**

Approach to Address Issue

- Established Internal Working Group consisting of diverse talents (inspectors, procedure owner, and supervisors)
- Developed a Charter (Phase 1):
  - Clarify and refocus the intent of IP 71152 to inspect CAP implementation,
  - Translate inspection results into a licensee PI&R program assessment, and
  - Ensure alignment between the bases and governance for PI&R inspection and assessment.

Approach to Address Issue Currently Under Consideration

- **Develop performance markers – transparency**
  - **Currently, gradation is based on language in the inspection report…..acceptable, marginally acceptable, adequate, etc.**
  - **Possible quantitative inputs**
    - **“Bouncing” in the action matrix**
    - **Repeat scrams/SSFFs**
    - **Findings with NCV of Crit. XVI or PI&R CCA**

Approach to Address Issue Currently Under Consideration

- **Consider using a 90-8-2 model (numbers are approximate):**
  - **90% of licensees have effective CAPs**
  - **8% of licensees have CAPs which adequately address most issues, but demonstrate continued weaknesses and raise concerns about the ability to continue meeting standards**
  - **2% of licensees have CAPs with significant problems that are in jeopardy of not meeting ROP bases assumptions**

Approach to Address Issue Currently Under Consideration

- **Consider using the results of the biennial PI&R in determining whether Supplemental Inspection Objectives are satisfied. For example, is it acceptable to close a Supplemental Inspection based on "planned" corrective actions for risk-significant performance issues if the licensee's CAP program has been assessed as minimally successful?**

Approach to Address Issue Currently Under Consideration

- **Consider modifying the Action Matrix to annotate (allowing an *) a plant which transitioned columns with *pending or planned* (a) corrective actions to prevent recurrence (CAPRs) and (b) effectiveness reviews associated with risk-significant performance issues**

Open Discussion

- To solicit comments and observations regarding the strengthening the NRC's assessment process of the licensee's Corrective Action Program:
  - Defining a ***marginal*** program
  - Defining NRC actions for handling a licensee with a ***marginal*** program

Open Discussion

- What performance markers should be considered?
- How should the NRC use the insights of the PI&R to better assess overall plant performance? Should there be an interconnection with the Action Matrix?
- What other actions should be taken to improve the effectiveness of the PI&R?

Next Steps

- Consider feedback received during this workshop
- Consolidate recommendations and insights from previous assessments and feedback forms
- Revise the inspection procedure
- Develop inspector training
- Develop strategy for piloting procedure changes

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

END OF WORKSHOP

Enclosure 3

Reactor Oversight Process Task Force FAQ Log
March 17, 2016

Dated March 31, 2016

FAQ Log March 18, 2016 ROP Meeting

FAQ No.	PI	Topic	Status	Plant/Co.	Point of Contact
16-01	MS	Cook PRA Error Affecting MSPI	Discussed on January 14 and February 18, staff presented a proposed response on March 18. Issue is Tentative-Final	Generic	M. Scarpello (AEP) Tom Taylor (NRC)

For more information, contact: James Slider, (202) 739-8015, jes@nei.org

NEI 99-02 FAQ 16-01 (Tentative Final)
Cook PRA Error Affecting MSPI

Plant: D. C. Cook
Date of Event: 03/06/2014
Submittal Date: 12/23/2015
Licensee Contact: M. Scarpello **Tel/email**: mkscarpello@aep.com
NRC Contact: Tom Taylor **Tel/email:** thomas.taylor@nrc.gov
Performance Indicator:

1. Mitigating System Performance Index (Emergency AC Power Systems) (MS06)
2. Mitigating System Performance Index (High Pressure Injection Systems) (MS07)
3. Mitigating System Performance Index (Heat Removal Systems) (MS08)
4. Mitigating System Performance Index (Residual Heat Removal Systems) (MS09)
5. Mitigating System Performance Index (Cooling Water Systems) (MS10)

Site-Specific FAQ (Appendix D)? No [This is generic]
FAQ requested to become effective: When approved

Question Section

NEI 99-02, Rev. 7 Guidance needing interpretation (include page and line citation):
Page number and line citations are from the copy of NEI 99-02, Revision 7 posted on the ROP Program Document page of the NRC website.

- Section 1 Introduction, page 3 lines 20-22, "Guidance for Correcting Previously Submitted Performance Indicator Data"
- Section 2.2 Mitigating Systems Cornerstone, page 36 lines 7-13, "Plant-specific PRA"
- Section 2.2 Mitigating Systems Cornerstone, page 37 lines 5-13, "PRA Model Revisions"
- Appendix G, Section G2. PRA Requirements, pages G4-G5

Event or circumstances requiring guidance interpretation:

In March 2014, an error was discovered in the DC Cook PRA model related to test and maintenance values. The error was introduced into the model in 2008 and had a non-conservative impact on the MSPI coefficients. Upon discovery, the error was entered into the corrective action process to track resolution during the next PRA model update. No additional notification/briefing on the PRA error was provided to the Resident Inspectors and no comments were included in the INPO Consolidated Data Entry (CDE) software with the quarterly MSPI submittal at the time of discovery. The updated PRA model of record was approved in June 2015 and the MSPI basis document and coefficients were revised to support MSPI submittal for the third quarter 2015. Previously submitted indicator values were not revised.

DC Cook's understanding is that the MSPI guidance contained in NEI 99-02 requires the indicators be reported based on the approved PRA model of record that was in effect at the beginning of the reporting quarter and PRA parameters are not to be changed until the quarter following approval of a revision to the PRA model of record. The "Clarifying Notes" for PRA Model Revisions under Mitigating System Performance Index description beginning on page 36 provide the basis for this interpretation. DC Cook also understands that the "Guidance for Correcting Previously Submitted Performance Indicator Data" on page 3 does not require previously submitted data to be reconsidered based on corrections/changes to the PRA model. This section provides the process for amending indicator data for data errors and newly identified faulted conditions through the "change report" feature of CDE and states "(PRA) model changes are the exception to this guidance" with a reference to the "Clarifying Notes" on pages 36-39.

Previously, the guidance in the "Clarifying Notes" for PRA Model Revisions contained a definition of PRA model change that stated "Any PRA model changes will take effect the following quarter (model changes include error, corrections, updates, etc.)." This statement was removed based on FAQ 477, but the FAQ question and response do not appear to change the intended definition of a PRA model change as it relates to errors.

The Resident Inspectors have indicated that they may not agree with the interpretation that the "Guidance for Correcting Previously Submitted Performance Indicator Data" provides exception from correcting previously submitted indicator values for PRA model errors since the section uses the term PRA model changes and not PRA model errors. They have also questioned how the guidance for Plant-specific PRA on page 36 lines 7 through 13 applies to PRA Model errors. This guidance states:

7 Specific requirements appropriate for this PRA application are defined in Appendix G. Any
8 questions related to the interpretation of these requirements, the use of alternate methods to meet
9 the requirements or the conformance of a plant-specific PRA to these requirements will
10 be arbitrated by an Industry/NRC expert panel. If the panel determines that a plant-
11 specific PRA does not meet the requirements of Appendix G such that the MSPI would be
12 adversely affected, an appropriate remedy will be determined by the licensee and approved by
13 the panel. The decisions of this panel will be binding.

The Inspectors have stated it is unclear whether this guidance is used only when changes are made to the PRA model to establish technical adequacy or if it requires licensees to re-evaluate technical adequacy and make changes to MSPI coefficients when model errors are identified based on the thresholds listed for F&O impacts in Appendix G.

DC Cook documents the basis for PRA model technical adequacy to support MSPI as specified in Appendix G Section G 2 in the MSPI Basis Document. The identified PRA model error did not cause the station to question the overall technical adequacy of the PRA model to support the MSPI application. In response to a question from the Resident Inspectors, a review of the impact of the error on the previous MSPI coefficients was performed. This review indicated that some Birnbaum values would have changed by more than a factor of 3, but all MSPI values would have remained within the Green band.

If licensee and NRC resident/region do not agree on the facts and circumstances explain:

DC Cook and the NRC Resident Inspectors agree on the facts and circumstances related to this FAQ.

The Resident Inspectors would like to emphasize that the guidance in NEI 99-02 cannot supersede the requirements of federal regulations, specifically 10CFR50.9 in this case.

Potentially relevant existing FAQ numbers: FAQ 14-01 (MSPI PRA Technical Adequacy), FAQ 434 (LaSalle PRA model error)

Response Section

Proposed Resolution of FAQ

1. Re-incorporate the definition of PRA model changes to include errors, corrections, updates, etc that were removed from NEI 99-02 under FAQ 477.

2. Clarify whether identification of a PRA model error requires the conformance of a plant-specific PRA model to be considered against the requirements of Appendix G, the threshold at which such errors would require changes be made to MSPI parameters, and when an Industry/NRC expert panel should be convened to determine if identified PRA model errors affect conformance to the requirements of Appendix G.

If appropriate, provide proposed rewording of guidance for inclusion in next revision:

1. Return the following statement to the "Clarifying Notes" for PRA Model Revisions:

   "Any PRA model changes will take effect the following quarter (model changes include error, corrections, updates, etc.)."

2. No proposed rewording is being provided for the second bullet as this requires the current guidance to be interpreted. Any necessary clarification would be left to the ROP Task Force/NRC if determined appropriate.

PRA update required to implement this FAQ? No

MSPI Basis Document update required to implement this FAQ? No

NRC Response

The staff reviewed the proposed resolutions and compared it to the new revision of Appendix G approved by FAQ 14-01. Proposed resolutions:

1. Re-incorporate the definition of PRA model changes to include errors, corrections, updates, etc. that were removed from NEI 99-02 under FAQ 477.
2. Clarify whether identification of a PRA model error requires the conformance of a plant-specific PRA model to be considered against the requirements of Appendix G, the threshold at which such errors would require changes be made to MSPI parameters, and when an Industry/NRC expert panel should be convened to determine if identified PRA model errors affect conformance to the requirements of Appendix G.

Section G 2.1.2 of the new Appendix G states:

a) *Pending model changes to be considered for MSPI are those related to implemented plant design and operational changes, identified errors in the PRA model, and F&Os characterized as findings related to those supporting requirements identified in Table G 5. NEI 05-04 defines a finding as an observation (an issue or discrepancy) that is necessary to address to ensure: 1) the technical adequacy of the PRA (relative to a Capability Category), 2) the capability/robustness of the PRA update process, or 3) the process for evaluating the necessary capability of the PRA technical elements (to support applications). Note that F&Os characterized as findings related to model changes required to meet Capability Category II are not considered pending model changes for MSPI if Table G 5 indicates that Capability Category I is sufficient.*

The Industry/NRC expert panel referenced in the previous version of Appendix G has been superseded, now licensees are expected to adhere to the characteristics and attributes of a PRA Configuration Control program are described in ASME/ANS Standard Section 1-5.

The staff acknowledged the resident's concern that while it did not occur in this case, a performance deficiency on the part of the licensee could result in the failure to report a PI within the appropriate threshold with no allowance for it to be corrected. Specifically, the guidance states that corrected PRA errors do not require licensees to go back and update previously reported MSPI data, even if it would cause the licensee to have crossed a threshold. Rather than address this issue through revisions to the reporting guidance, the staff believes that this would be a rare circumstance that is best addressed on a case by case basis. Inspection governance documents will be updated to include guidance if inspectors discover a PI reported within the wrong threshold, but no clear process for correction exists within NEI 99-02, consultation with the Division of Inspection and Regional Support should be made to determine if an ROP deviation or other action is required to ensure the appropriate placement of the licensee within the Action Matrix.

The staff concludes that FAQ 14-01 addressed the concerns raised by this FAQ, however due to the implementation time period, the licensee was not required to adhere to the new requirements until after their next PRA update. As such, no revisions to NEI 99-02 or licensee action is required for this FAQ.

Revision History
Reformatted 1/6/2016, J. Slider,NEI
Revised per ROPTF feedback 1/13/2016, AEP
Draft NRC answer provided 3/18/2016, Z. Hollcraft, NRC