Enclosure 2

Reactor Oversight Process Task Force FAQ Log –
October 21, 2015

Dated November 02, 2015

FAQ Log for October 21, 2015 ROP Meeting

FAQ No.	PI	Topic	Status	Plant/Co.	Point of Contact
15-02	IE03	Prairie Island Power Change December 2014	Introduced 06/17 Discussed 07/15 Made final 10/21	Generic	Bryan Willard (Xcel) Karla Stoedter (NRC)
15-03	MS	Unavailability Monitoring of Low-Risk Trains	Introduced 06/17. Revised to address discussion on 06/17 Discussed 07/15 Made tentative final 10/21	Generic	Roy Linthicum (Exelon) Zack Hollcraft (NRC)
15-04	EP02	Participation Credit During HAB Drills and Exercises	Whitepaper approved by staff at 07/14 meeting. FAQ based on the approved whitepaper is to be introduced 09/16/2015 Discussed 10/21	Generic	Marty Hug (NEI) Eric Schrader (NRC)

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

NEI 99-02 FAQ 15-02 (Tentative Final)
Prairie Island Power Change December 2014

Plant: Prairie Island Nuclear Generating Station (PINGP) Unit 1
Date of Event: 12/10/2014
Submittal Date: 06/16/2015
Licensee Contact: Bryan Willard
Tel/email: 651-267-6829 / Bryan.Willard@xenuclear.com
NRC Contact: Karla Stoedter
Tel/email: 651-388-1121 x4219
Performance Indicator: IE03 – Unplanned Power Changes per 7,000 Critical Hours
Site-Specific FAQ (see Appendix D)? No [This is generic.]
FAQ to become effective: When approved

Question Section

NEI 99-02 Guidance needing interpretation (including page and line citation):

Pg 14 Lines 4-9

> The 72-hour period between discovery of an off-normal condition and the corresponding change in power level is based on the typical time to assess the plant condition, and prepare, review, and approve the necessary work orders, procedures, and safety reviews, to effect a repair. The key element to be used in determining whether a power change should be counted as part of this indicator is the 72-hour period and not the extent of the planning that is performed between the discovery of the condition and initiation of the power change.

Pg 15 Lines 36-43

> If a condition is identified that is slowly degrading and the licensee prepares plans to reduce power when the condition reaches a predefined limit, and 72 hours have elapsed since the condition was first identified, the power change does not count. If however, the condition suddenly degrades beyond the predefined limits and requires rapid response, this situation would count. If the licensee has previously identified a slowly degraded off-normal condition but has not prepared plans recognizing the potential need to reduce power when the condition reaches predefined limits, then a sudden degradation of that condition requiring rapid response would constitute a new off-normal condition and therefore, a new time of discovery.

Event or circumstances requiring guidance interpretation:
On December 10, 2014, PINGP Unit 1 commenced a power reduction and initiated a forced outage in response to leakage through the 12 Reactor Coolant Pump (RCP) seal. See the timeline below for a description of the actions taken surrounding this event. Figure 1 shows the unidentified leakage rate during the time period of interest.

- 11/30/2014 0201 – Action Request (AR) 1457811 was initiated to identify 12 RCP #3 seal degradation.
    - This was found by an increasing trend in Unit 1 Reactor Coolant Drain Tank (RCDT) level rate of change, and a steady increase in pressure in the 12 RCP #3 seal cavity, which suggested that more flow was being diverted to the #3 seal.

- An Operational Decision-Making Issue (ODMI) evaluation was requested under this AR on 12/02/2014. The purpose of this ODMI was to establish actions for operators once certain leakage thresholds were exceeded.

- 12/07/2014 0501 – AR 1458595 was initiated to identify that action levels were exceeded for the RCS Leakage Monitoring Program. This was closed to AR 1457811.

- 12/07/2014 0845 – NRC Resident was notified of issues with Unit 1 Reactor Coolant System (RCS) unidentified leakage and pending containment entry to investigate.

- 12/08/2014 1523 – AR 1458727 was initiated to document an increase in Unit 1 RCS unidentified leakage. This was closed to AR 1457811.

- 12/09/2014 – ODMI 1457811 was completed and signed by the Plant Manager.

- 12/10/2014 0901 – A second consecutive performance of the Unit 1 RCS Leakage Test resulted in unidentified leakage greater than 0.8 gallons per minute (GPM). This exceeded a threshold in ODMI 1457811, and it was decided to commence a shutdown of Unit 1 per 1C1.4, "Unit 1 Power Operation." Procedure 1C1.4 is the normal operating procedure for Unit 1 above 15% rated power. When a shutdown is commenced, it is used for load decreases prior to entering 1C1.3, "Unit 1 Shutdown."

For clarification, the ODMI process at PINGP serves to assist operations in evaluating certain trends and conditions. ODMI 1457811 was developed during the window between off-normal condition discovery and the corresponding change in power level, in order to assess the plant condition and ensure the safe operation of Unit 1.

The trending throughout this event was focused on unidentified leakage because the maximum allowable unidentified leakage to meet LCO 3.4.14 is 1.0 GPM. The maximum allowable identified leakage to meet LCO 3.4.14 is 10.0 GPM, and this limit was not challenged during this event.

The Unit 1 power reduction was reported as an unplanned power change per NEI 99-02 in the 4th quarter of 2014; however, PINGP is seeking to retract the unplanned power change.

If licensee and NRC resident/region do not agree on the facts and circumstances, explain:
The NRC Resident agrees with the description of the event. However, it is not clear from NEI 99-02 when the off-normal condition was first discovered and whether the licensee adequately prepared plans to reduce power.

Potentially relevant FAQs: None

Response Section

Proposed Resolution of FAQ:
The point of disagreement between the licensee and NRC inspector is on what constitutes "discovery".

PINGP first identified the slowly degrading off-normal condition under AR 1457811 on 11/30/2014. This was ten days before the Unit 1 shutdown commenced. The ODMI was finalized the day before the

shutdown. While other ARs were written concerning the increased rate of Unit 1 unidentified leakage, AR 1457811 remained the primary CAP entry that tracked key actions in the event troubleshooting process.

This situation did not degrade beyond predefined limits or require rapid response. Throughout the event, the maximum allowable unidentified leakage of 1.0 GPM, as defined in PINGP's Technical Specifications, was not exceeded. The decision to reduce power, aided by guidance in ODMI 1457811, was conservative in nature and provided for a safe transition of the unit to Mode 5. Since normal operating procedures were used to reduce power in Unit 1, a rapid response designated by use of abnormal operating procedure 1C1.4 AOP1, Rapid Power Reduction Unit 1, did not take place.

NEI 99-02 states that "the key element to be used in determining whether a power change should be counted as part of this indicator is the 72-hour period and not the extent of planning that is performed between the discovery of the condition and initiation of the power change." The initiation of AR 1457811 on 11/20/2015 identified the apparent degradation to the reactor coolant pump seal and constitutes "discovery" for the purposes of this indicator. The plant shutdown occurred on 12/10/2015, well in excess of the 72-hour period required prior to the power reduction. Therefore, the power reduction commenced on 12/10/2014 does not count as an Unplanned Power Change per NEI 99-02.

If appropriate, provide proposed rewording of guidance for inclusion in next revision:
Not applicable.

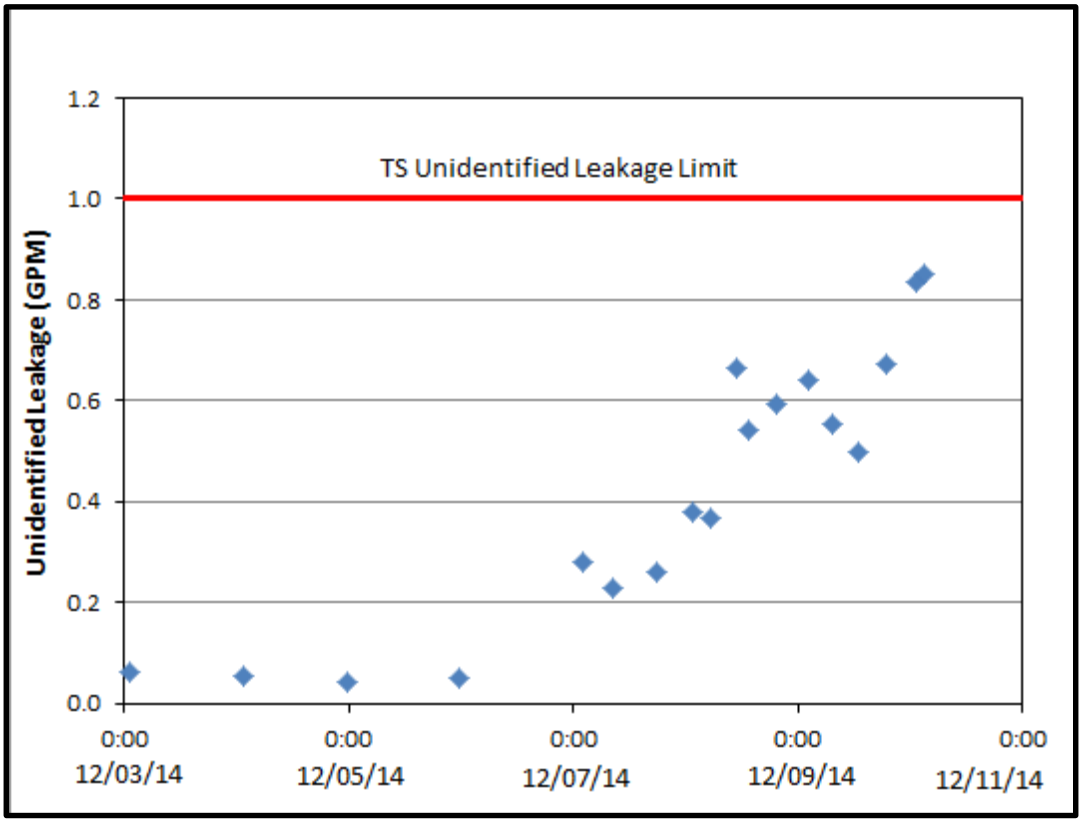

Figure 1 -- Unit 1 RCS Unidentified Leakage during from 12/03/14 through 12/10/14. Each data point was captured while performing SP 1001AA, Daily Reactor Coolant System Leakage Test. The off-normal condition was first discovered on 11/30/14 (AR 1457811) and the ODMI was signed on 12/9/14.

NRC Response:

The staff reviewed the licensee's FAQ and the resident inspectors' additional information provided. While the licensee contends that the off-normal condition was first identified on 11/20, the residents' position is that the licensee was unaware of the severity of the condition until it accelerated and a plant shutdown was required on 12/10. NEI 99-02 states "[i]f a condition is identified that is slowly degrading and the licensee prepares plans to reduce power when the condition reaches a predefined limit, and 72 hours have elapsed since the condition was first identified, the power change does not count." In this case the licensee discovered a possible off-normal condition on 11/20, but failed to adequately identify it as a condition that may require a downpower. However, on 12/2, the licensee identified increased RCS unidentified leakage they determined was most likely related to the previously identified condition and requested an ODMI. While the ODMI was not completed until 12/9, the fact that it was requested on 12/2 is the pertinent requirement (ref. FAQ 99-06). The pertinent portion of NEI 99-02 in this case is the excerpt from page 16, lines 40-43:

"If the licensee has previously identified a slowly degraded off-normal condition but has not prepared plans recognizing the potential need to reduce power when the condition reaches predefined limits, then a sudden degradation of that condition requiring rapid response would constitute a new off-normal condition and therefore, a new time of discovery."

In this case, that new time of discovery was on 12/2. As such, it is reasonable to conclude that the licensee determined an off-normal condition that would require a downpower existed on 12/2, well in excess of 72 hours from the subsequent downpower that occurred on 12/10. The staff concludes that this shutdown should not count towards the IE03 PI.

NEI 99-02 FAQ 15-03
Unavailability Monitoring of Low-Risk Trains

Plant: Generic
Date of Event: N/A
Submittal Date: 06/16/2015
Licensee Contact: Roy Linthicum **Tel/email**: roy.linthicum@exeloncorp.com
NRC Contact: TBD **Tel/email:** _ _ _ _ @nrc.gov
Performance Indicator:

Mitigating System Performance Index (Emergency AC Power Systems) (MS06)
Mitigating System Performance Index (High Pressure Injection Systems) (MS07)
Mitigating System Performance Index (Heat Removal Systems) (MS08)
Mitigating System Performance Index (Residual Heat Removal Systems) (MS09)
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

[This FAQ implements a whitepaper approved by the ROP Working Group in the spring of 2015. The whitepaper addressed the following question: Can low risk worth trains be excluded from monitoring based on a low Birnbaum value?]

NEI 99-02, Rev. 7 Guidance needing interpretation (include page and line citation):

F.1.1.2 Identification of Trains within the System
There is no allowance to exclude a train based on a low Birnbaum value, though there is exclusion for low risk valves and circuit breakers

Event or circumstances requiring guidance interpretation:

Introduction/Background

MSPI monitors URI and UAI for a rolling period of three years. NEI 99-02 section F 2.3.5 discusses Birnbaum importance as it relates the exclusion of some valves and circuit breakers from the requirement to monitor those components for failures. For

$$B = CDF*[FV/UR]_{max}$$

If the Birnbaum importance (B) of a component (adjusted for Common Cause failure and Initiating Event frequency) is less than 1.0E-06, it may be excluded from the requirement to monitor for failures. Currently, in NEI 99-02, there is no similar exclusion for monitoring the unavailability of trains or segments that have a low Birnbaum importance.

Summary of Issues

In a three year period, there are 26,280 hours. Throughout the industry, it is not unusual to see trains or segments that can incur tens, if not hundreds of thousands of unavailability hours and remain Green. This means that they could be unavailable over the entire monitoring period and not make the indicator go white. Similar to monitored components, one can calculate the Birnbaum importance of individual trains or segments:

$$B = CDF*[FVUAP/UAP]max$$

Where FVUAP is a Basic Event in the PRA model and UAP is the Basic Event probability adjusted for Initiating Event frequency, if applicable.
The following was calculated from a plant's data. The plant name and names of the segments have been changed:

Plant X Cooling Water Unavailability							
Segment	$Segment_A$	$Segment_B$	$Segment_C$	Loop B	Loop A	Train B	Train A
CDF	1.07E-05	1.07E-05	1.07E-05	1.07E-05	1.07E-05	1.07E-05	1.07E-05
FV_{UAP}	2.13E-03	9.54E-04	1.42E-03	3.62E-03	2.61E-03	1.98E-02	1.69E-02
UAP	1.18E-02	1.07E-02	1.18E-02	7.32E-04	7.32E-04	2.59E-03	2.59E-03
Birnbaum	1.93E-06	9.54E-07	1.29E-06	5.29E-05	3.82E-05	8.18E-05	6.98E-05
Hours to White	14,240	29,120	21,360	519	720	355	407

The hours to White in this table came from the plant's MSPI Margin report. This indicates that the hours to remain Green reaches the three year total of 26,280 when the Birnbaum importance is approximately 1E-06. Since the impact of the train or segment unavailability is added to other trains and URI to calculate MSPI, the impact of a train with a Birnbaum of 1E-06 can't be ignored.

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

The Licensee's Position: Industry recommends that any train or segment that has a Birnbaum of < 1E-07 be excluded from the requirement to monitor for unavailability.

The NRC's Position: TBD

Potentially relevant existing FAQ numbers: None

Response Section

Proposed Resolution of FAQ

Add a third bullet under Section F.1.1 of NEI 99-02 as follows:

- Identify trains/segments with an adjusted Birnbaum value of less than 1.0E-07 (these may be excluded from unavailability monitoring).

Add a new last paragraph under F.1.1.2 as follows:

> <u>Systems with no monitored Trains:</u>
> If all trains/segments within a system have been excluded, a pseudo train will be reported in CDE[1]. The train should be identified by the name of the system followed by the word pseudo (e.g., RHR pseudo). The following values should be applied to all pseudo trains:
>
> FV = 0.0
> UA = 1.0
> Baseline planned unavailability = 0.0
> Baseline unplanned unavailability = 0.0
> Monthly Unavailability Hours (planned and unplanned) = 0

[1] CDE requires all systems to have at least 1 train to calculate MSPI values.

NEI 99-02 FAQ 15-03
Unavailability Monitoring of Low-Risk Trains

Add a new Section F.1.3.5 to NEI 99-02 as follows:

F 1.3.5. BIRNBAUM IMPORTANCE

One of the rules used for determining the trains/segments to be monitored in this performance indicator is that licensees are given the option of excluding trains/segments with an adjusted Birnbaum importance less than 1.0E-07. This is an option, not a requirement. Thus the last two columns of Table G1 ("Adjusted Birnbaum Value" and "Monitored") are required only if the licensee chooses to exclude trains/segments with low adjusted Birnbaum values. A licensee may choose to use this exclusion in one system without using it in any other system(s). To apply this screening rule the Birnbaum importance is calculated from the values derived in this section as:

$$B = CDF*[FV/UA]_{ind} = CDF*[FV/UA]_{max}$$

Ensure that the support system initiator correction (if applicable) is included in the Birnbaum value used to exclude components from monitoring.

In Section G.3, revise Table G1 as shown below.

Table G 1 Unavailability Data HPSI (one table per system)

Train	Basic Event Name	Basic Event Description	Basic Event Probability (UAP)	Basic Event FVUAP [1]	FVUAP/UAP	Adjusted Birnbaum Value[1, 2]	Monitored?2
A	1SIAP02---MP6CM	HPSI Pump A Unavailable Due to Mntc	3.20E-03	3.19E-03	9.97E-01	1.99E-6	Yes
B	1SIBP02---MP6CM	HPSI Pump B Unavailable Due to Mntc	3.20E-03	3.85E-03	1.20E+00	2.4E-06	Yes

Note 1. Adjusted for IEF correction if used
Note 2: These two columns are needed only if the licensee chooses the option of excluding trains/segments with an adjusted Birnbaum importance of less than 1.0E-07.

NRC Response

TBD

NEI 99-02 FAQ 15-04
Clarification on Granting Participation Credit During a HAB Drill/Exercise

Plant:	Generic	
Date of Event:	N/A	
Submittal Date:	09/14/2015	
Licensee Contact:	Marty Hug	Tel/email: mth@nei.org
NRC Contact:	Eric Schrader	Tel/email: eric.schrader@nrc.gov
Performance Indicator:		EP02, ERO Drill Participation
Site-Specific FAQ (Appendix D)?		No [This is generic]
FAQ requested to become effective:		When approved

Question Section

This FAQ implements a whitepaper approved by the ROP Working Group at its July 15, 2015 meeting. The whitepaper clarified when participation credit is to be given, as presented below.

NEI 99-02, Rev. 7, page 56, lines 28 to 37, allows sites to grant participation credit to Key Positions in the TSC and EOF for a Hostile Action Based (HAB) Drill/Exercise when the positions are not afforded the opportunity to perform DEP. However in some instances, the Drill/Exercise is designed so that Key Positions in the TSC or EOF are afforded the opportunity to perform DEP. In this case the page 56clarification is not required and the criteria of the third and fourth sentence do not apply to the Drill/Exercise. Confusion exists on the above point. The changes to NEI 99-02 presented in the Response Section were developed to eliminate the confusion.

Current Text: NEI 99-02, Revision 7, Page 56, Lines 28 - 37
Credit can be granted to Key Positions for ERO Participation for a Security related Drill or Exercise as long as the Key Positions are observed evaluating the need to upgrade to the next higher classification level and/or evaluating the need to change protective action recommendations. Key TSC Communicator and Key EOF Communicator may be granted participation credit as long as the Key Position performs a minimum of one offsite (state/local) update notification. If an individual participates in more than one Security-related Drill/Exercise in a three year period, only one of the Security-related Drills/Exercise can be credited. A station cannot run more than one credited Security-related Drill/Exercise in any consecutive 4 quarter period. Objective evidence shall be documented to demonstrate the above requirements were met.

Event or circumstances requiring guidance interpretation: Not applicable

Response Section

Proposed Resolution of FAQ

NEI 99-02, Revision 7, Page 56, line 28-37
Some Security-related Drills or Exercises may have all DEP indicator opportunities performed solely in the Control Room (e.g., initial declaration of a Site Area Emergency with escalation to a General Emergency prior to activation of ERO facilities), while others could have initial opportunities performed in the Control Room and subsequent opportunities performed in the TSC and/or EOF. Credit can be granted to Key Positions for ERO Participation for a DEP evaluated Security-related Drill or Exercise without a DEP opportunity for all Key ERO positions as long as the Key Positions are observed evaluating the need to upgrade to the next higher classification level and/or evaluating the need to change protective action recommendations. Key TSC Communicator and Key EOF Communicator may be granted participation credit as long as the Key Position performs a minimum of one offsite

(state/local) update notification. If an individual participates in more than one Security-related Drill/Exercise without a DEP opportunity in a three year period, then only one of the Security-related Drills/Exercises can be credited. A station cannot run more than one credited Security-related Drill/Exercise that does not include DEP opportunities for the TSC and/or EOF personnel in any consecutive 4 quarter period. There is no credit limitation on Security-related drills and exercises that include DEP opportunities for the TSC and/or EOF personnel. ERO participation credit should be assigned in the normal manner for these drills and exercises. Objective evidence shall be documented to demonstrate the above requirements were met.

NRC Response
TBD