Enclosure 3
Meeting Summary Handouts
of the October 26, 2011
ROP Public Meeting

Provided by NRC

NRC Staff White Paper on
Miscellaneous Changes to NEI 99-02, Rev 6.
October 26, 2011 Meeting

1. LER #s in SSFF PI Reporting:

Page 29, line 32:

The LER number ~~should~~shall be entered in the comment field when an SSFF is reported.

Page B-2, SSFF Data element No. 3:

3 Comment text (e.g., LER No.)

Reason for suggested change: NEI 99-02, Rev. 6, page 4, line 8, states that the LER number *shall* be listed in the comments section. NRC staff and contractors noticed that several sites did not include the LER number in the comments section for associated SSFF PI hits. The issue doesn't appear to be specific to one fleet or operating company. Changing the guidance within the SSFF PI indicator and the data element description may help licensees remember to report the LER #. NRC uses the LER # for inspection/verification purposes.

2. RCS Leakage PI Reporting:

Page 40, line 15:

- The maximum RCS Identified (or Total, if applicable – see Clarifying Notes) Leakage calculation for each month of the previous

Page 40, line 22:

$$\text{unit value} = \frac{\text{the maximum monthly value of identified (or total, if applicable) leakage}}{\text{Technical Specification limiting value}} \times 100$$

Page B-3, data reporting elements 4 & 5 for RCSL

4 Maximum RCS Identified (or Total, if applicable) Leakage calculation for reporting month in gpm

5 Technical Specification limit for RCS Identified (or Total, if applicable) Leakage in gpm

Reason for suggested change: Some plants with total leakage TS values are mistakenly reporting the identified leakage value rather than the total value. Requested change is an attempt to clarify guidance and to enable INPO to change the field title in CDE to help reduce potential for entry errors.

3. Effective Dates and Posting Dates:

Page E-3, line 34:

8. Promulgation and Effective Date of FAQs

The final NRC response to the FAQ will specify the quarter and the reporting date for which the FAQ resolution will begin to be applied to PI data. The first day of that quarter will be the effective date. For example, if NRC specifies that the FAQ resolution will begin to be applied to 3QXX data that is reported to NRC in October 20XX, then the effective date will be July 1, 20XX. Once approved by NRC, the accepted response will be posted on the NRC Website and is treated as an extension of this guideline.

For the licensee that submitted the FAQ, the FAQ is effective when the event occurred or as specified by the NRC in its final response. Unless otherwise directed in an FAQ response, for other licensees, FAQs are to be applied to the data submittal for the quarter following the one in which the FAQ was posted to the NRC Website and beyond. For example, an FAQ with an NRC Website posting date of 9/30/2009 would apply to 4th quarter 2009 PI data, submitted in January 2010 and subsequent data submittals. However, an FAQ with a posting date of 10/1/2009 would apply on a forward fit basis to first quarter 2010 PI data submitted in April 2010. Licensees are encouraged to check the NRC Web site frequently, particularly at the end of the reporting period, for FAQs that may have applicability for their sites.

Reason for suggested change: To clarify effective date and posting date terminology and to ensure NRC specifies the effective date in its final responses to FAQ resolutions. Regarding the highlighted text, one of the NEI ROP TF members mentioned at the 9/21 meeting that some plants' procedures direct FAQ resolutions to be applied the quarter following the one in which the FAQ was posted to NRC's Website. NEI 99-02 currently has the above highlighted clause that indicates that this may not always be the case, so those licensees should ensure that their procedures allow for this clause. They shouldn't automatically assume that the effective date is the quarter following the posting date's quarter.

4. MSPI Data Elements

Appendix B, Pages B-2 and B-3 (All MSPIs' Data Elements):

1 Performance Indicator Flag (i.e., MS07)
2 Quarter and year (e.g., 1Q2000)
3 Comment text
4 Indicator Value
5 Unavailability Index
6 Unreliability Index
7 Performance Limit Exceeded

Reason for suggested change: Indicator value is a reported data element.

Supplement to NRC White Paper on
PI Validity during Extended Shutdowns and Start-up Conditions
Presented at October 26, 2011 Meeting

MSPI Validity during Extended Outages and Start-ups

Proposed MSPI Outage/Start-up Schemes

Scheme	Gap	Limit 2 Quarters	Limit 6 Quarters	Generic
Applicability				
Extended Outages	Yes	Yes	Yes	Yes
New Plants Start-up	No	Yes	Yes	Yes
Performance				
Artificial Degradation (3-year active data window maintained)	Small	Moderate	Large	None
Sensitivity (replacement data decreases effectiveness)	Good	Good	Good	Moderate to Large
Invalid Period (length of time where data is not available)	Small	Large	Moderate	Small
Early Trend (ability to provide indication of performance when data is available)	Good	Poor	Moderate	Good
Implementation (difficulty to implement)	Complex	Simple	Simple	Simple

Supplement to NRC White Paper on PI Validity during Extended Shutdowns and Start-up Conditions Presented at October 26, 2011 Meeting

Extended S/D and S/U from extended S/D

1. Gap Approach
    a. Approach
        i. Gap data from quarters where there are no critical/operational data.
        ii. MSPI data considered invalid for any full quarter of outage
        iii. 3-year rolling average maintained.
            1. Example: 6 month outage starting in February and ending in July.
                a. Allows the elimination of the 2nd quarter data
                b. 2nd quarter data reported as "not applicable." (grayed out)
                c. 3rd quarter data reported as if the 2nd quarter did not exist with the exception that any failures occurring during the shutdown period that could have occurred at-power would still be count (like any other shutdown period)
                d. Rolling window now spans 3 ¼ years until outage quarter drops off.
    b. Assumptions
        i. Performance prior to outage should be unchanged from that of performance after outage.
        ii. CDE can be configured or work around put in place to quarter gapping
    c. Performance
        i. Provides a good indication of performance by minimizing time where indicator is not applicable.
        ii. Minimizes artificial degradation as it maintains 3-year rolling average. Worst case will be an outage that starts the day after a quarter begins and ends one day before the next quarter ends – 6 months maximum degradation.
        iii. Minimizes accentuated indicator response by maintaining 3 years of valid data.
2. Limit Approach (2, 4 or 6 quarters)
    a. Approach
        i. Limit the reduction in performance data to a set number of quarters
        ii. Outages that exceed the quarterly limit for a 3-year rolling window will result in not applicable indicators until the outage length falls below the limit.
    b. Assumptions
    c. Performance
        i. Competing impact on the number of quarters limit selection
            1. Small limit minimizes performance indicator degradation but results in long period without valid indication.
                a. Example 1: 2 quarter limit would result in 6 months of performance indicator degradation (reduced demands and run

hours during the outage period) and 2 ½ years to clear the non-valid indicator

b. Example 2: 6 quarter limit would result in 18 months of performance indicator degradation and 18 months to clear the non-valid indicator

3. Generic Approach
    a. Approach
        i. Assumes any non-operating quarters are at baseline
    b. Performance
        i. Allows for early trending of performance relative to baseline.
        ii. Dampens degraded/good performance with generic baseline data
        iii. Maintains 3-year rolling window

New Plant S/U

1. Gap Approach
    a. Not applicable as no prior data before gap
2. Limit Approach (2, 4 or 6 quarters)
    a. Similar to extended S/D
3. Generic Approach
    a. Approach
        i. Assume previous non-operating quarters are at baseline and are updated with each new operating quarter.
    b. Performance
        i. Allows for early trending of performance relative to baseline.
        ii. Dampens degraded/good performance with generic baseline data
        iii. Maintains 3-year rolling window

NRC Comments for October 26, 2011 Meeting
FAQ 10-06, Cascaded Unavailability

Plant:	**Generic**
Date of Event:	**N/A**
Submittal Date:	**Proposed as 5/4/11**
Licensee Contact:	**Roy Linthicum, 630-657-3846, roy.linthicum@exeloncorp.com**
NRC Contact:	**TBD**
Performance Indicator:	**Mitigating Systems**
Site Specific FAQ:	**No**

FAQ requested to become effective: 10/01/2011

Question Section:

Clarification in the guidance is needed for what constitutes cascaded unavailability. NEI 99-02 section 2.2, Mitigating System Performance Index, pages 31-36, provide the guidance on how to properly administer and report this performance indicator. On page 34, under the Monitored Systems section, line 37 states explicitly "No support systems are to be cascaded onto the monitored systems, e.g., HVAC room coolers, DC power, Instrument Air, etc."

Appendix F section 2.1.3 provides guidance on how to define the boundaries of frontline system monitored components and support system components for the Unreliability element of MSPI. While this guidance could reasonably be extended to the unavailability section, there are no explicit statements regarding the definition of boundaries between frontline systems and support systems in the Unavailability element of MSPI.

Additional guidance/clarification should be provide to define the frontline system and support system boundaries for the unavailability element of MSPI to ensure the "no cascading of unavailability" clause is met and unavailability is accurately reported?

Guidance needing clarification/interpretation:

Appendix F, section 1.2.1 regarding the establishment of boundaries between frontline and support system components for reporting unavailability should be revised to be consistent with the "No cascading of unavailability" clause from page 34.

Page F-6 "No Cascading of Unavailability" section should be clarified. Currently, all examples in this section refer to disabling a function of a monitored piece of equipment for protection when a support system is out of service. This could lead to an interpretation that these examples are the only conditions applicable to the "no cascading clause" on page 34.

Page F-29 "Failures and Discovered Conditions of Non-Monitored Structures, Systems, and Components" should be revised to be consistent with the guidance of page 34 for no cascading of support systems onto monitored systems, specifically lines 20 – 23 … "An example could be a manual suction isolation valve left closed which would have caused a pump to fail. This would

not be counted as a failure of the pump. Any mis-positioning of the valve that caused the train to be unavailable would be counted as unavailability from the time of discovery." This example does not indicate whether the mis-positioned valve was inside or outside the monitored system boundary, which introduces confusion. This example should include a statement that the mis-positioned valve is inside the monitored system boundary.

Event requiring guidance interpretation: N/A

NRC Resident Inspector Position: TBD

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

Potentially relevant existing FAQ numbers: NA

Response Section:

Proposed Resolution of FAQ:
The following guidance changes should be made to NEI 99-02.

Licensee proposed wording changes:

Page 31 (existing):
Unavailability is the ratio of the hours the train/system was unavailable to perform its monitored functions (as defined by PRA success criteria and mission times) due to planned and unplanned maintenance or test during the previous 12 quarters while critical to the number of critical hours during the previous 12 quarters.

Page 31 (revised):
Unavailability is the ratio of the hours the train/system was unavailable to perform its monitored functions (as defined by the train/system boundaries, PRA success criteria and mission times) due to planned and unplanned maintenance or test during the previous 12 quarters while critical to the number of critical hours during the previous 12 quarters.

Page 33 (existing):
Definition of Terms

Risk Significant Functions*:* those at power functions, described in the Appendix F section "Additional Guidance for Specific Systems," that were determined to be risk-significant in accordance with NUMARC 93-01, or NRC approved equivalents (e.g., the STP exemption request). The risk significant system functions described in Appendix F, "Additional Guidance for Specific Systems" should be modeled in the plant's PRA/PSA. System and equipment performance requirements for performing the risk significant functions are determined from the PRA success criteria for the system.

Page 33 (revised):
Definition of Terms

Risk Significant Functions*:* those at power functions, described in the Appendix F section "Additional Guidance for Specific Systems," that were determined to be risk-significant in accordance with NUMARC 93-01, or NRC approved equivalents (e.g., the STP exemption request). The risk significant system functions described in Appendix F, "Additional Guidance for Specific Systems" should be modeled in the plant's PRA/PSA. System and equipment performance requirements for performing the risk significant functions are determined from the PRA success criteria, mission times, and boundaries for the system.

Page 34 (existing):
Monitored Systems

Systems have been generically selected for this indicator based on their importance in preventing reactor core damage. The systems include the principal systems needed for maintaining reactor coolant inventory following a loss of coolant accident, for decay heat removal following a reactor trip or loss of main feedwater, and for providing emergency AC power following a loss of plant off-site power. One support function (cooling water support system) is also monitored. The cooling water support system monitors the cooling functions provided by service water and component cooling water, or their direct cooling water equivalents, for the four front-line monitored systems. No support systems are to be cascaded onto the monitored systems, e.g., HVAC room coolers, DC power, instrument air, etc.

Page 34 (revised):
Monitored Systems

Systems have been generically selected for this indicator based on their importance in preventing reactor core damage. The systems include the principal systems needed for maintaining reactor coolant inventory following a loss of coolant accident, for decay heat removal following a reactor trip or loss of main feedwater, and for providing emergency AC power following a loss of plant off-site power. One support function (cooling water support system) is also monitored. The cooling water support system monitors the cooling functions provided by service water and component cooling water, or their direct cooling water equivalents, for the four front-line monitored systems. Other support systems (e.g., HVAC room coolers, DC power, instrument air, etc.) will not be cascaded onto the monitored systems' unavailability or reliability data. For the purposes of MSPI, a failure of a support system component that is outside the system and train boundary of a monitored system will not result in unavailability of a monitored train or failure of a monitored component.

Page F-1 (existing):
F.1.1.1 Monitored Functions and System Boundaries

The first step in the identification of system trains is to define the monitored functions and system boundaries. Include all components within the system boundary that are required to satisfy the monitored functions of the system.

Page F-1 (revised):

F.1.1.1 Monitored Functions and System Boundaries

The first step in the identification of system trains is to define the monitored functions and system boundaries. Include all components within the system boundary that are required to satisfy the monitored functions of the system.

The cooling water support system is a system that is calculated separately in MSPI; however, trains/segments of other support systems (e.g., HVAC room coolers, DC power, instrument air, etc.) that may be needed to satisfy a monitored function are not monitored in MSPI for unavailability if the components within those trains/segments are not included within the boundary of a monitored train/segment or the supported system.

Additional guidance for determining the impact on availability and unreliability from unmonitored component failures can be found in Section F.2.2.2.

Page F-2 (existing)
System Interface Boundaries
For water connections from systems that provide cooling water to a single component in a monitored system, the final connecting valve is included in the boundary of the frontline system rather than the cooling water system. For example, for service water that provides cooling to support an AFW pump, only the final valve in the service water system that supplies the cooling water to the AFW system is included in the AFW system scope. This same valve is not included in the cooling water support system scope. The equivalent valve in the return path, if present, will also be included in the frontline system boundary.

Page F-2 (Revised)
System Interface Boundaries
For water connections from systems that provide cooling water to a single component in a monitored system, the final connecting valve is included in the boundary of the frontline system rather than the cooling water system. For example, for service water that provides cooling to support an AFW pump, only the final valve in the service water system that supplies the cooling water to the AFW system is included in the AFW system scope. This same valve is not included in the cooling water support system scope. The equivalent valve in the return path, if present, will also be included in the frontline system boundary.

The impact of room cooling or other related HVAC supports is excluded from the system/train boundary. Unavailability of these systems/components is not counted as unavailability of a monitored system/train. The only exception to this are EDG ventilation systems that have a shared function of both providing room cooling/ventilation that also provide a flow path EDG combustion or exhaust. In these cases, unavailability of components that result in unavailability of EDG due to not having a combustion or exhaust flow path is included in EDG unavailability.

For control functions and electrical power, the system/train boundary includes all system dedicated relays, controllers, and contactors that support the monitored system functions, and all dedicated voltage supply breakers (both motive and control power) and their associated control

circuits (relay contacts for normally auto actuated components, control board switches for normally operator actuated components). If a relay, breaker, or contactor exists solely to support the operation of a monitored system, it should be considered part of the system's boundary. If a relay, breaker, or contactor supports multiple systems, it should not be considered as part of the monitored system's boundary. For turbine driven pumps, the system/train boundary includes the associated control system (relay contacts for normally auto actuated components, control board switches for normally operator actuated components), the control valve, and its voltage supply breaker. Failure or unavailability of components outside of the system/train boundary is **not** counted as unavailability of the impacted system/train.

Page F-2 (existing):
Water Sources and Inventory
Water tanks are not considered to be monitored components. As such, they do not contribute to URI. However, periods of insufficient water inventory contribute to UAI if they result in loss of the monitored train function for the required mission time. If additional water sources are required to satisfy train mission times, only the connecting active valve from the additional water source is considered as a monitored component for calculating UAI. If there are valves in the primary water source that must change state to permit use of the additional water source, these valves are considered monitored and should be included in UAI for the system.

Page F-2 (revised):
Water Sources and Inventory
Water tanks are not considered to be monitored components. As such, they do not contribute to URI. However, since tanks can be in the train boundary, periods of insufficient water inventory contribute to UAI if they result in loss of the monitored train function for the required mission time. If additional water sources are required to satisfy train mission times, only the connecting active valve from the additional water source is considered as a monitored component for calculating UAI. If there are valves in the primary water source that must change state to permit use of the additional water source, these valves are considered monitored and should be included in UAI for the system.

Page F-5 (existing):
Unplanned unavailable hours: These hours include elapsed time between the discovery and the restoration to service of an equipment failure or human error (such as a misalignment) that makes the train unavailable. Time of discovery of a failed monitored component is when the licensee determines that a failure has occurred or when an evaluation determines that the train would not have been able to perform its monitored function(s). In any case where a monitored component has been declared inoperable due to a degraded condition, if the component is considered available, there must be a documented basis for that determination, otherwise a failure will be assumed and unplanned unavailability would accrue. If the component is degraded but considered operable, timeliness of completing additional evaluations would be addressed through the inspection process. Unavailable hours to correct discovered conditions that render a monitored component incapable of performing its monitored function are counted as unplanned unavailable hours. An example of this is a condition discovered by an operator on rounds, such as an obvious oil leak, that was determined to have resulted in the equipment being non-functional even though no demand or failure actually occurred. Unavailability due to mis-

positioning of components that renders a train incapable of performing its monitored functions is included in unplanned unavailability for the time required to recover the monitored function.

Page F-5 (revised):
Unplanned unavailable hours: These hours include elapsed time between the discovery and the restoration to service of an equipment failure or human error (such as a misalignment) that makes the train unavailable. Time of discovery of a failed monitored component is when the licensee determines that a failure has occurred or when an evaluation determines that the train would not have been able to perform its monitored function(s). In any case where a monitored component has been declared inoperable due to a degraded condition, if the component is considered available, there must be a documented basis for that determination, otherwise a failure will be assumed and unplanned unavailability would accrue. If the component is degraded but considered operable, timeliness of completing additional evaluations would be addressed through the inspection process. Unavailable hours to correct discovered conditions that render a monitored train incapable of performing its monitored function are counted as unplanned unavailable hours. An example of this is a condition discovered by an operator on rounds, such as an obvious oil leak, that was determined to have resulted in the equipment being non-functional even though no demand or failure actually occurred. Unavailability due to mis-positioning of components that renders a train incapable of performing its monitored functions is included in unplanned unavailability for the time required to recover the monitored function.

Page F-6 (existing):
No Cascading of Unavailability: In some cases plants will disable the autostart of a supported monitored system when the support system is out of service. For example, a diesel generator may have the start function inhibited when the service water system that provides diesel generator cooling is removed from service. This is done for the purposes of equipment protection. This could be accomplished by putting a supported system in "maintenance" mode or by pulling the control fuses of the supported component. If no maintenance is being performed on a supported component and it is only disabled for equipment protection due to a support system being out of service, no unavailability should be reported for the train/segment.
If, however, maintenance is performed on the monitored component, then the unavailability must be counted.

For example, if an Emergency Service Water train/segment is under clearance, and the autostart of the associated High Pressure Safety Injection (HPSI) pump is disabled, there is no unavailability to be reported for the HPSI pump. If a maintenance task to collect a lube oil sample is performed and it can be performed with no additional tag out, no unavailability has to be reported for the HPSI pump. If however, the sample required an additional tag out that would make the HPSI pump unavailable, then the time that the additional tag out was in place must be reported as planned unavailable hours for the HPSI pump.

Page F-6 (revised):
No Cascading of Unavailability: The failure or unavailability of an SSC that is not within the boundary of the monitored MSPI system that it supports does not cause the supported monitored system to accrue unavailability. Although such a failure or condition may require a monitored train or segment of the supported system to be declared inoperable, the monitored train or

segment of the supported system would not accrue unavailability. If the monitored component of the supported system is rendered non-functional through tag out or physical plant conditions (other than as discussed below), then unavailable time should be accrued for the monitored train or segment of the supported system. Otherwise, unavailability is not accrued.

Plants will sometimes disable the autostart of a supported monitored system when its support system is out of service. For example, a diesel generator may have the start function inhibited when the service water system that provides diesel generator cooling is removed from service. This is done for the purposes of equipment protection. This could be accomplished by putting a supported system's monitored train/segment in "maintenance" mode or by pulling the control fuses of the supported monitored component. If no maintenance is being performed on a component that's within a supported system's monitored train/segment, and the supported system's train/segment is only unavailable because of a monitored support system being out of service, no unavailability should be reported for the supported system's train/segment. If, however, maintenance is performed on the supported system's monitored train/segment, then the unavailability must be counted.

For example, if an Emergency Service Water (ESW) train/segment (i.e., a monitored support system train/segment) is unavailable, and the autostart of the associated High Pressure Safety Injection (HPSI) pump (a monitored supported system) is disabled, there is no unavailability to be reported for the HPSI pump; however, the ESW train/segment does accrue unavailability. If a maintenance task to collect a lube oil sample is performed and it can be performed with no additional tag out, no unavailability has to be reported for the HPSI pump. If however, the sample required an additional tag out that would make the HPSI pump unavailable, then the time that the additional tag out was in place must be reported as planned unavailable hours for the HPSI pump.

Page F-29 (existing):
Failures and Discovered Conditions of Non-Monitored Structures, Systems, and Components (SSC)

Failures of SSCs that are not included in the performance index will not be counted as a failure or a demand. Failures of SSCs that would have caused an SSC within the scope of the performance index to fail will not be counted as a failure or demand. An example could be a manual suction isolation valve left closed which would have caused a pump to fail. This would not be counted as a failure of the pump. Any mis-positioning of the valve that caused the train to be unavailable would be counted as unavailability from the time of discovery. The significance of the mis-positioned valve prior to discovery would be addressed through the inspection process. (Note, however, in the above example, if the shut manual suction isolation valve resulted in an actual pump failure, the pump failure would be counted as a demand and failure of the pump.)

Failures and Discovered Conditions of Non-Monitored Structures, Systems, and Components (SSC)

Page F-29 (revised):
Unmonitored components within a monitored train/segment boundary do not contribute to unreliability. If an unmonitored component within a monitored train/segment fails, unreliability is not accrued if the unmonitored component does not cause an actual demand and/or failure of a monitored component within the monitored train/segment. If the unmonitored component causes a monitored component within the monitored train/segment to actually fail when demanded, then the monitored component demand and failure are counted for unreliability. The failure of an unmonitored component within a monitored train/segment can cause unavailability of that train/segment to be counted if the train/segment is rendered unavailable.

Unmonitored components outside a monitored train/segment boundary do not contribute to unreliability of monitored components or to unavailability of the monitored train/segment. If an unmonitored component outside a monitored train/segment fails, unreliability is not accrued regardless whether the unmonitored component causes an actual demand and/or failure of a monitored component. The failure of an unmonitored component outside a monitored train/segment cannot cause unavailability of that train/segment to be counted.

For example, a manual suction isolation valve (an unmonitored component within the train boundary) is left closed, which would have caused a pump to fail. The closed valve would not be counted as a failure of the pump, nor would unavailability be accrued. Any mis-positioning of the valve that caused the train to be unavailable would be counted as unavailability from the time of discovery. The significance of the mis-positioned valve prior to discovery would be addressed through the inspection process. (Note, however, in the above example, if the shut manual suction isolation valve resulted in an actual pump failure, the pump failure would be counted as a demand and failure of the pump and unplanned unavailability would be counted against the appropriate train/segment.)

Page F-50 (revised):
PWR Auxiliary Feedwater Systems

Scope
The function of the AFW system is to provide decay heat removal via the steam generators to cool down and depressurize the reactor coolant system following a reactor trip. The mitigation of ATWS events with the AFW system is not considered a function to be monitored by the MSPI. (Note, however, that the FV values will include ATWS events).

The function monitored for the indicator is the ability of the AFW system to autostart, take a suction from a water source (typically, the condensate storage tank and if required to meet the PRA success criteria and mission time, from an alternate source), and to inject into at least one steam generator.

The scope of the auxiliary feedwater (AFW) or emergency feedwater (EFW) systems includes the pumps, the condensate storage tank (CST), the components in the flow paths between the pumps and CST, and if required, the valve(s) that connect the alternative water source to the auxiliary feedwater system. The flow path for the steam supply to a turbine driven pump is included from the steam source (main steam lines) to the pump turbine. Pumps included in the

Technical Specifications (subject to a Limiting Condition for Operation) are included in the scope of this indicator. Some initiating events, such as a feedwater line break, may require isolation of AFW flow to the affected steam generator to prevent flow diversion from the unaffected steam generator. This function should be considered a monitored function if it is required.

FAQ 11-08, EDG Failure Mode Definitions

Plant: Generic

Date of Event: NA

Submittal Date: March 30, 2011

Licensee Contact: Ken Heffner Tel/email: 919-546-5688/ken.heffner@pgnmail.com

Roy Linthicum Tel/email: 630-657-3846/roy.linthicum@exeloncorp.com

NRC Contact: Audrey Klett Tel/email: 301-415-0489

Performance Indicator: MS06

Site-Specific FAQ (Appendix D)? No

FAQ requested to become effective on 10/01/2011 and concurrent with FAQ 11-07.

Question Section

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

The Guidance in question is on page F-26, lines 3 through 15, of NEI 99-02, Revision 6.

Event or circumstances requiring guidance interpretation:

There is no event driving this requested change to the guidance. The existing definitions for EDG Failure to Start, Load/Run, and Run are confusing and somewhat contradictory. Industry is proposing to change the guidance as described below. In addition, the failure definitions are being changed to address inclusion of the EDG Fuel Oil Transfer Pumps/Valves as being within the scope of the EDG super component boundary.

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

NA

Potentially relevant existing FAQ numbers

NA

Response Section

Proposed Resolution of FAQ

Make the changes to the guidance described below.
If appropriate, provide proposed rewording of guidance for inclusion in next revision.

(Existing) *EDG failure to start:* A failure to start includes those failures up to the point the EDG has achieved required speed and voltage. (Exclude post maintenance tests, unless the cause of failure was independent of the maintenance performed.)

(Proposed*) EDG failure to start:* A failure to start includes those failures up to the point when the EDG output breaker has received a signal to close. Exclude post maintenance tests, unless the

cause of failure was independent of the maintenance performed. See the EDG failure to run definition for treatment of fuel oil transfer pump/valve[A] failures.[1]

*(*Existing*) EDG failure to load/run:* Given that it has successfully started, a failure of the EDG output breaker to close, to successfully load sequence and to run/operate for one hour to perform its monitored functions. This failure mode is treated as a demand failure for calculation purposes. (Exclude post maintenance tests, unless the cause of failure was independent of the maintenance performed.)

(Proposed) *EDG failure to load/run*: Given that the EDG has successfully started and the output breaker has received a signal to close, a failure of the output breaker to close or a failure to run/operate for one hour after breaker closure. The EDG does not have to be fully loaded to count the failure. Failure to load/run also includes failures of the EDG output breaker to re-close following a grid disturbance if the EDG was running paralleled to the grid, provided breaker closure is required by plant design. Exclude post maintenance tests, unless the cause of failure was independent of the maintenance performed. See the EDG failure to run definition for treatment of fuel oil transfer pump/valve failures.[1]

(Existing) *EDG failure to run:* Given that it has successfully started and loaded and run for an hour, a failure of an EDG to run/operate. (Exclude post maintenance tests, unless the cause of failure was independent of the maintenance performed.)

(Proposed) EDG failure to run: A failure after the EDG has successfully started, the output breaker has closed and the EDG has run for an hour after the breaker has closed. The EDG does not have to be fully loaded to count the failure. Exclude post maintenance tests, unless the cause of failure was independent of the maintenance performed. Failures of the EDG fuel oil transfer pump(s)/valve(s) are considered to be EDG failures to run if the failure of the EDG fuel oil transfer pump/valve results in the failure of the EDG to be able to run for 24 hours (e.g., no redundant transfer pump/valve is available[2], or the redundant pump/valve is disabled in a manner preventing it from performing its intended function). Regardless of when the fuel oil transfer pump/valve(s) fails, this counts as a run failure. In the case where a fuel oil transfer pump/valve(s) failure results in more than 1 EDG to not be able to run for 24 hours, a failure is counted for each affected EDG.[1]

Footnotes to be included in NEI 99-02:

[1]Information Systems Laboratories, Inc. performed a review for the NRC of EDG and FOTP failures to support the changes made to EDG failure definitions in 2011. This report can be found in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML11259A101.

[2] In order for a redundant fuel oil transfer pump/valve to be credited in a failure determination, it must either automatically actuate or be able to be manually actuated in the time needed to satisfy

[A] The 9/22/2011 change to this FAQ text adds the term "valve" where previously only "pump" appeared. This addition reflects recent information indicating that some plants have gravity-fed day tanks for which a valve fulfills the function ascribed to the Fuel Oil Transfer Pump alone in previous versions of this FAQ. [J. Slider, NEI]

the PRA success criteria. If the pump/valve requires manual actuation, indication must be available to alert the operating staff of the need to actuate the pump/valve in in the time required.

NRC Response:

NRC staff agrees with the proposed changes with an effective date of January 1, 2012, meaning that licensees will begin applying this FAQ resolution to 1Q2012 data reported to NRC in April 2012.

NRC Response for October 26, 2011 Meeting
FAQ 11-09 (Withdrawn)
Crystal River-3 Extended Shutdown

Plant:	Crystal River Unit 3 (CR-3)
Date of Event:	N/A
Submittal Date:	June 30, 2011
Licensee Contact:	Dennis W. Herrin
	Tel/email: 352.563.4633/Dennis.Herrin@pgnmail.com
NRC Contact:	Tom Morrissey (CR-3 SRI)
	Tel/email: 352.795.6486 (x3265)/Thomas.Morrissey@pgnmail.com

Performance Indicators:

Unplanned Scrams with Complications (IE04)
Mitigating System Performance Index (MS06-MS10)

Site-Specific FAQ (Appendix D)? ■ Yes □ No

In September 2009, CR-3 was taken off line for a refueling outage and for steam generator replacement. During creation of a construction opening in the Containment Building for steam generator replacement, a delamination was created in Bay 3-4 during tendon de-tensioning activities. In mid-March 2011, final re-tensioning of tendons after concrete repair in Bay 3-4 was suspended while engineers investigated evidence of delamination in Bay 5-6 resulting from the tendon re-tensioning work. CR-3 has been shut down since September 2009 and will continue to be shut down into 2013 and perhaps beyond, depending on the repair methodology to be selected. NEI 99-02 does not contain guidance on how to treat certain performance indicators during periods of extended shutdown, or how to recover after returning the unit to service after an extended shutdown.

Because of the unique conditions of this extended shutdown, CR-3 is requesting approval of this FAQ in accordance with NEI 99-02, Revision 6, page E-1, Lines 18-19:

> "3. To request an exemption from the guidance for plant-specific circumstances, such as design features, procedures, or unique conditions."

FAQ requested to become effective when approved.

Request that this FAQ be reviewed on an expedited basis since the CR-3 Service Water System (RW/SW/DC) MSPI performance indicator is currently 62% in the Green Band and declining due to the reduction in critical hours and will cross the green-to-white threshold before reaching an extended shutdown period of three years, without an additional MSPI functional failure.

Question Section

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

Unplanned Scrams with Complications – Clarifying Notes - Page 19
Mitigating System Performance Index – Clarifying Notes – Pages 33 - 35

NRC Response for October 26, 2011 Meeting
FAQ 11-09 (Withdrawn)
Crystal River-3 Extended Shutdown

Event or circumstances requiring guidance interpretation:

Unplanned Scrams with Complications (USwC) is defined as the number of unplanned scrams, while the reactor is critical, both manual and automatic, during the previous 4 quarters that require additional operator actions. After being in a condition where a reactor has not been critical for the previous 4 quarters, no opportunities exist for a USwC and further performance indicator reporting has no meaning. Once a unit exits an extended shutdown and the reactor becomes critical, this performance indicator will immediately have meaning.

Mitigating System Performance Index (MSPI) is defined as the sum of changes in a simplified core damage frequency evaluation resulting from differences in unplanned unavailability and unreliability relative to industry standard baseline values. In order to initially implement these new performance indicators, three years of past operational data had to be base loaded into the INPO Consolidated Data Entry System in order to arrive at the first meaningful calculated value. It can be assumed that an extended shutdown lasting greater than three years renders these performance indicators meaningless. An additional concern is that these performance indicators are sensitive to the reduction in critical hours and may actually become meaningless sooner that an extended shutdown period of three years. A final consideration is that although many of the MSPI monitored components are not required to be operable in NO MODE operation and MSPI functional failure opportunities are minimized, any such failure would be unrealistically weighted and could result in crossing the green-to-white performance indicator threshold.

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

The NRC Senior Resident Inspector agrees with the characterizations above.

Potentially relevant existing FAQ numbers:

No potentially relevant existing FAQs have been located. A review was performed of NRC-approved FAQs and the current listing of Draft FAQs.

Response Section:

Proposed Resolution of FAQ:

The licensee will continue to submit MSPI failure data but MSPI values and Unplanned Scrams with Complications (USwC) data will not be displayed on the NRC website because it is not indicative of plant performance. The USwC indicator will go active when the reactor is critical. A decision on how to determine the best way to reintroduce the MSPI values will be determined prior to plant startup.

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

No revised wording is being proposed.

At the September 21, 2011, ROP Working Group meeting, the following change to this site-specific FAQ was provided by the industry:

Proposed Resolution of FAQ:

NRC Response for October 26, 2011 Meeting
FAQ 11-09 (Withdrawn)
Crystal River-3 Extended Shutdown

Incorporate guidance for periods of extended shutdown and its impact on the following performance indicators: Unplanned Scrams with Complications and Mitigating System Performance Index.

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

No revised rewording is being proposed. Specific wording deferred to the NEI Task Force. Consider the "Event or circumstances requiring guidance interpretation" described above for inclusion in the next revision.

NRC Response:

This site-specific FAQ was not accepted by the NRC for review. The NRC and industry reached consensus at the July 13, 2011 ROP working group meeting that the above-mentioned PIs are not valid. Because the reactor has not been critical for two years, there have been no opportunities for a scram that would count in the USwC indicator. Similarly, the MSPI values are skewed because of the very low number of critical hours in three years. For these reasons, NRC has determined that these PIs no longer provide valid indications of performance. Therefore, the NRC characterized these PIs on the NRC Web site as "Not Applicable" on August 19, 2011. The licensee will continue to submit the PI data to the NRC in accordance with NEI 99-02. The NRC documented this decision in its September 1, 2011, mid-cycle performance review letter to the licensee.

NRC staff and industry agreed on the need to develop generic guidance in NEI 99-02 for (1) determining PI validity during extended shutdowns and (2) establishing PI validity after start-ups. NRC staff provided a draft white paper at the September 21, 2011, ROP Working Group Meeting to initiate this effort. A subsequent generic FAQ should be provided to incorporate guidance into NEI 99-02 for determining and establishing the validity of PIs during an extended shutdown and after a start-up.