

Enclosure 3

Reactor Oversight Process Task Force FAQ Log – June 26, 2013

FAQ Log Entering ROP Public Meeting on June 26, 2013

FAQ No.	PI	Topic	Status	Plant/Co.	Point of Contact
12-04	OR01	HRA Related Occurrences	<p>Introduced 8/29/2012.</p> <p>Text revised and resubmitted, discussed 10/17/2012; 11/29/2012; 01/17/2013; 02/21/2013. Staff response received 3/26/2013. FAQ tentative final 03/2/2013. Received revised NRC response on 5/7/2013.</p> <p>At 5/8/2013 meeting, FAQ 12-04 was made Tentative Final. NRC Final version was conveyed to NEI on 5/20/2013</p>	Generic	<p>John Pelcic/ Robin Ritzman (FENOC)</p> <p>Mark Marshfield (NRC)</p>
12-05	MS05	Safety System Functional Failures	<p>Introduced 10/17/2012; discussed 11/29/2012, 01/17/2013. Discussed and withdrawn at TVA's request at 01/17/2013 meeting. To be archived after withdrawal statement is approved.</p> <p><u>Received revised NRC withdrawal statement on 5/7/2013.</u></p> <p>At 5/8/2013 meeting, withdrawal statement of FAQ 12-05 was discussed; small word changes were received from NRC on 5/20/2013.</p>	Generic	<p>James Emens (TVA)</p> <p>Dave Dumbacher (NRC)</p>
13-01	IE01	Unplanned Scrams	<p>Introduced 03/27/2013.</p> <p>At 5/8/2013 meeting, FAQ 13-01 was not approved by the staff and was made Tentative Final. FAQ 13-01 is expected to be made Approved Final at 06/26/2013 meeting.</p>	Turkey Point	<p>Steve Catron (NextEra)</p> <p>Tim Hoeg (NRC)</p>
13-02 (Proposed)	IE03	Susquehanna Power Change	<p>To be introduced on 6/26/2013.</p>	Susquehanna	<p>John Tripoli (PPL)</p> <p>Patrick Finney (NRC)</p>

NEI Contact: James E. Slider, 202-739-8015, jes@nei.org

NRC Final Response
FAQ 12-04, HRA Related Occurrences (Generic)

Plant: Perry

Date of Event: June 2, 2012

Submittal Date: August 16, 2012

Contact: John Pelcic

Tel/email: 440-280-5824 jfpelcic@firstenergycorp.com

NRC Contact: Mark Marshfield

Tel/email: 440-280-5822 mark.marshfield@nrc.gov

Performance Indicator: OR01 Occupational Exposure Control Effectiveness

Site-Specific FAQ (Appendix D)? No

FAQ requested to become effective when approved. Approval date is May 8th, 2013.

Question Section

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

Page 62, Lines 16 - 22, and associated footnote

Technical Specification High Radiation Area (>1 rem per hour) Occurrence –

A nonconformance (or concurrent non-conformances) with technical specifications or comparable requirements in 10 CFR 20 applicable to technical specification high radiation areas (>1 rem per hour) that results in the loss of radiological control over access or work activities within the respective high-radiation area (>1 rem per hour). For high radiation areas (>1 rem per hour), this PI does not include nonconformance with licensee-initiated controls that are beyond what is required by technical specifications and the comparable provisions in 10 CFR Part 20.

A footnote states that “Concurrent” means that the non-conformances occur as a result of the same cause and in a common timeframe.

Event or circumstances requiring guidance interpretation:

On June 2, 2012, an equipment failure resulted in resin/water slurry flow into the general area hallway of the Radwaste Building El. 574. Indications of changing radiological conditions were available. However, the Radiation Protection staff did not recognize the need to conduct a new radiological survey of the area, which was posted and controlled as a High Radiation Area (HRA) at the time. The failure to perform a timely radiological survey is a performance deficiency and an NRC Performance Indicator occurrence.

Over the next few days, there were two instances of individuals entering this area without Radiation Protection coverage and one instance where an individual was provided a HRA key but did not enter the area.

On June 7, 2012, a Radiation Protection technician performed a radiological survey of the area in preparation for decontamination activities. The survey identified a floor area where dose rates met the Technical Specification criteria for classification as a Locked High Radiation Area (LHRA). After the survey, the Radwaste Building El. 574 area was posted and controlled as a LHRA.

This PI counts non-conformances, or “concurrent non-conformances,” with technical specifications. “Concurrent non-conformances” are defined as those that “occur as a result of the same cause and in a common timeframe.” In this case, the three instances were as a result

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of the same cause – the failure of Radiation Protection personnel to recognize the need to perform a new radiological survey. “Common timeframe” is not defined; however FENOC believes that these three instances meet the intent of a “common timeframe.” The instances were a result of a single performance deficiency with the same common cause.

The failure to recognize the need to perform a new radiological survey prior to June 7, 2012, was reported as a PI occurrence. Additionally, the three instances of individuals entering the area, or having access without Radiation Protection coverage as a result of the single performance deficiency of not performing the timely survey were conservatively reported pending the outcome of this FAQ.

Since the PI counts non-conformances that “result in the loss of radiological control over access or work activities” and the nonconformance that led to the three entries was the failure of Radiation Protection to recognize the need to perform a new radiological survey, are the two subsequent entries and one potential entry considered to be “concurrent non-conformances” bounded by the failure to recognize the need to perform the new radiological survey?

What is the NRC resident inspector’s position?

The NRC resident inspector agreed with the facts and recommended that the FAQ process be followed for resolution.

Potentially relevant existing FAQ numbers

FAQ 203 addresses the footnote in question. However, in FAQ 203, the causes of the two entries were different; therefore, both occurrences counted. FAQ 203 did not address “common timeframe.”

Response Section

Proposed Resolution of FAQ

The failure to recognize the need to perform a new radiological survey represents a loss of control over access into a LHRA. However, since the subsequent three instances without Radiation Protection control were a result of the failure to perform the new radiological survey, and were within a limited common timeframe, they can be considered to be “concurrent non-conformances.” Only one Technical Specification High Radiation Area PI occurrence should be reported.

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

In the footnote defining “concurrent,” “common timeframe” should be defined to be “within the normal period of time between surveys for the specific area.”

NRC Response

The proposed FAQ correctly quotes the applicable guidance in NEI 99-02 for this event. The performance indicator identifies an occurrence of non-conformance (or concurrent non-conformances) with technical specifications involving a loss of radiological controls over entries to (or work within) a Technical Specification High Radiation Area (TSLHRA, > 1 rem per hour). The FAQ discussion notes that there were three subsequent instances where entries were made without Radiation Protection controls.

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A common timeframe as used in the Occupational Radiation Safety guidance in NEI 99-02, is not a fixed period of time. It is the elapsed time in which a number of events or occurrences that are associated with each other happen. The events described in this FAQ are all within a common timeframe. However, the issue demonstrated by this example is not whether the subsequent non-conformances resulting from an ongoing failure to properly control a TSLHRA are within the same (or common) timeframe. The pertinent issue in this example is whether all of the subsequent non-conformances resulted from the same cause.

In those cases where a licensee, for whatever reason (e.g., failure to survey, failure to lock the area, etc.), fails to provide adequate physical controls around a TSLHRA for an extended time, all of the subsequent non-conformances would be “concurrent non-conformances” as defined in NEI 99-02 if they were the result of the same cause. For example, an operational occurrence that created an unrecognized TSLHRA, the subsequent failure to post the area, failure to prevent unauthorized access (possible several entries), entry not controlled per an RWP, etc., are all concurrent non-conformances if they are directly attributable to the original failure to survey. However, if during the time that this TSLHRA is unidentified (or uncontrolled) there is a subsequent failure by the RP Program to take timely action that reasonably would have ended the TSHRA non-conformance (e.g., a failure to perform a routine or directed surveillance that would have identified the non-conformance, or a failure to respond to new information that indicates the potential for the unidentified or uncontrolled TSLHRA), then the subsequent non-conformances are considered a separate PI occurrence based on the failure to reasonably act and correct the condition. In such a case the non-conformances that occurred before the subsequent failure would be concurrent non-conformances (i.e., one PI occurrence) with the initial TS violation. The non-conformances following the failure to act on the new information would be concurrent with this failure to act (i.e., a separate PI occurrence). Once this new information is obtained, subsequent sharing of this new information with other staff, or validation of this new information would be concurrent with the separate PI occurrence. The NRC response to FAQ 203 is a specific example of this general staff position.

The specific example of the resin spill event at Perry referenced in this FAQ was inspected under the NRC Baseline Inspection Program. A complete description of the event is provided in PERRY INSPECTION REPORT 05000440/2012005 AND 07200069/2012002 (ML13038A702). The spill event started on the morning of June 3, 2012, when the Radwaste (RW) Operator notified the Radiation Protection (RP) staff of a potential resin spill. The inspectors identified one self-revealing green finding with three examples of the licensee’s failure to perform timely radiological surveys and evaluate the potential radiological hazards. These three failures to survey were related to the following;

Failure to adequately respond to the initial notification of a possible resin spill in the Radwaste (RW) building, 574’ level: At approximately 0400 hours June 3, the RW operations supervisor observed a larger than expected level decrease in Condensate Backwash Settling Tank (CBST) tank inventory. The RW operations supervisor called the RP control point and informed the RP technicians that he believed there was a failed seal on the CBST transfer pump which could indicate a spill of contaminated resin. RP did not follow up to survey the area.

Failure to take timely action once it was recognized (or should have been recognized) that the radiological conditions in RW 574’ were potentially much worse than initially assumed: At approximately 1442 hours June 3, an RP technician, covering another job on the RW 574’ looked down the east-west corridor hallway and observed resin outside the CBST room. Due to an incomplete shift turnover, the dayshift RP technicians, and RP supervisors, were unaware of the

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reported loss of resin inventory, and possible radiological conditions of RW 574'. After leaving the area, the RP technician reported the unexpected material condition of the corridor to the on-duty RP supervisor. No subsequent surveys were performed.

Failure to take a timely survey once the decision to perform a survey was made: On Tuesday, June 5, 2012, at about 0630 hours, in response to continued concerns expressed the RP technicians about the uncharacterized radiological conditions on RW 574', the RP manager directed that a full survey of RW 574' be performed, including air samples. However, the TSLHRA remained unidentified and inadequately controlled until Thursday, June 7, when the surveys were performed at 1514 hours.

Each example represents new information or identifies organizational failures to respond in a timely manner that would have ended the on-going non-conformance to station technical specifications. Therefore, each of these three failures to take timely action and end the non-conformance with the Technical Specifications represents a separate cause of the subsequent non-conformance and therefore represents a separate reportable PI occurrence.

FAQ 12-05
Safety System Functional Failures
(Withdrawn on January 17, 2012)

Plant: Browns Ferry Nuclear Plant

Date of Event: July 11, 2012

Submittal Date: October 16, 2012

Contact: James Emens

Tel/email: (256) 729-2636/jeemens@tva.gov

NRC Contact: Dave Dumbacher

Tel/email: (256) 729-2573/david.dumbacher@nrc.gov

Performance Indicator: MS05, Mitigating System Functional Failures

Site-Specific FAQ (Appendix D)? No, FAQ is generic.

FAQ requested to become effective: when approved.

Question Section

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

Page 29, Lines 22-25:

Additional failures: a failure leading to an evaluation in which additional failures are found is only counted as one failure; new problems found during the evaluation are not counted, even if the causes or failure modes are different. The intent is to not count additional events when problems are discovered while resolving the original problem.

Event or circumstances requiring guidance interpretation:

While reviewing design input calculations in support of the NFPA 805 transition from the 10CFR 50, Appendix R licensing basis for Browns Ferry Nuclear (BFN) plant, TVA has discovered several deficiencies related to equipment and procedures that potentially could affect the ability of the Browns Ferry plant to cope with certain postulated Appendix R fires. As examples, these deficiencies have included omissions in Safe Shutdown Instructions (SSIs), and cable routings that violated train separation requirements. These discoveries have been reported as Licensee Event Reports (LER) submitted in accordance with 10CFR 50.73(a)(2)(ii)(B), as an event or condition that resulted in the nuclear plant being in an unanalyzed condition that significantly degraded plant safety. Some of these discoveries were also reported under 10 CFR 50.73(a)(2)(v)(B), as an event or condition that could have prevented the fulfillment of a safety function. Following is a list of LERs submitted that are related to BFN Appendix R program deficiencies that were reported under 10 CFR 50.73(a)(2)(v)(A):

- LER 50-259/2010-001-00 - Units 1, 2, and 3 Appendix R Safe Shutdown Instruction Procedures Contain Incorrect Operator Manual Actions,
- LER 50-259/2012-001-00 - Unanalyzed Conditions Discovered During NFPA 805 Transition Review,
- LER 50-259/2012-002-00 - Fault Propagation During A Postulated Appendix R Event Could Result In An Inability To Close Motor Operated Valves,
- LER 50-259/2012-003-00 - Reactor Protection System Circuit Could Potentially Remain Energized During An Appendix R Fire,

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- LER 50-259/2012-004-00 - Fire Damage to Cables in Fire Areas Could Cause a Residual Heat Removal Service Water Pump to Spuriously Start,
- LER 50-259/2012-007-00 - Cable Routing Error Would Result in Failure of Direct Current Control Power to Credited 4kV Shutdown Board 3EA during an Appendix R Event, and
- LER 50-259/2012-007-01 - Cable Routing Error Found in the Appendix R Separation Analysis.

For Reactor Oversight Process (ROP) Performance Indicator (PI) purposes, The Tennessee Valley Authority (TVA) counted the six discoveries in 2012 as one instance under the Safety System Functional Failure (SSFF) (MS05) PI input for 2Q2012. This decision was based on TVA's interpretation of the guidance in NEI 99-02, Section 2.2, page 29, lines 22-25. These lines indicate that when an evaluation leads to finding additional failures, the original and subsequent failures are counted as one.

The evaluation in this instance is the ongoing examination of the BFN Fire Protection program (plant equipment, procedures and design) to support the transition to NFPA-805. This examination began in 2012 and will continue until TVA submits the License Amendment Request associated with NFPA-805, currently projected for March 2013. This examination appears to align with the intent of the phrase on Lines 22-23, "...an evaluation in which additional failures are found...."

The TVA submitted a letter of intent to the NRC on March 4, 2009 for BFN to adopt NFPA 805 in accordance with 10 CFR 50.48(c). By letter dated September 17, 2009, the NRC granted a three year enforcement discretion period. By letter dated January 13, 2012, TVA informed the NRC that the schedule for submitting the license amendment request to adopt NFPA 805 had been revised to no later than March 29, 2013. By letter dated March 20, 2012, TVA requested an extension of the enforcement discretion period. By letter dated May 18, 2012, the NRC issued a Confirmatory Order to revise the date for the submittal of an acceptable license amendment request to transition BFN to March 29, 2013. In accordance with the Enforcement Policy, the enforcement discretion period would continue until the NRC issues a License Amendment.

What is the NRC resident inspector's position?

The NRC resident inspector agrees with the facts as presented, but questions whether the additional examples should be considered as "Additional failures" under the NEI 99-02 definition. The NRC has also raised the question as to when it would no longer be appropriate to count additional examples as "Additional failures" and therefore a single PI count. The inspector recommended that the FAQ process be followed for resolution.

Potentially relevant existing FAQ numbers

None.

FAQ 12-05
Safety System Functional Failures
(Withdrawn on January 17, 2012)

Response Section

Proposed Resolution of FAQ

The proposed resolution is to clarify that additional examples of SSFFs associated with a situation governed by enforcement discretion are to be considered part of the first reported instance, as described in “Additional failures.”

Additionally, if it is appropriate to count the additional examples of SSFFs as “Additional failures” and a single count against the PI, is there an amount of time or a pertinent milestone after which it becomes no longer appropriate to count additional examples as “Additional failures.”

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

Page 29, Lines 22-25:

Additional failures: a failure leading to an evaluation in which additional failures are found is only counted as one failure; new problems found during the evaluation are not counted, even if the causes or failure modes are different. The intent is to not count additional events when problems are discovered while resolving the original problem. **Related failures found in a situation in which enforcement discretion applies (e.g., transition to NFPA-805) are considered “Additional failures” under this definition and are therefore only counted as one failure. Once the enforcement discretion is lifted or a subsequent action to close the enforcement discretion is completed (e.g., license amendment approval, etc.), any additional examples of similar issues are no longer counted as “Additional failures” under this definition.**

Final Resolution: Withdrawn

In December 2012, TVA revised the LERs listed above to remove the previously referenced 10 CFR 50.73(a)(2)(v) criterion (safety system functional failures) since the reported conditions did not adversely impact structures, systems or components credited in the plant’s safety analyses. This obviated the need for this FAQ. At the January 17, 2013 ROP public meeting, the licensee asked that this FAQ be withdrawn.

NRC Response to Withdrawn FAQ

The staff supports the withdrawal of the FAQ since events reported under 10 CFR 50.73(a)(2)(v) are used to assess reportability for the Safety System Functional Failure performance indicator.

The Performance Indicator Program as described in Inspection Manual Chapter 0608 requires that deliberations should be documented in the NRC’s response to a withdrawn FAQ for knowledge-transfer purposes. The discussions are documented in the following section.

Discussions

The staff did not support the original proposed resolution from the licensee. Enforcement discretion is not within the scope of NEI 99-02. This specific enforcement discretion, as

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Safety System Functional Failures
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documented in the NRC Enforcement Policy, is for a noncompliance with the requirements in 10 CFR 50.48 and Appendix R that are identified as a result of the transition to NFPA 805.

The guidance in NEI 99-02, Section 2.2, states that *a failure leading to an evaluation in which additional failures are found is only counted as one failure; new problems found during the evaluation are not counted, even if the causes or failure modes are different. The intent is to not count additional events when problems are discovered while resolving the original problem.* This guidance does not clearly apply to the conditions reported in the LERs because “a failure leading to an evaluation” did not occur. The conditions were identified during the NFPA 805 transition review, which is not considered an evaluation for the purposes of this guidance (e.g.; for determining extent of condition). If the root cause analysis for the initial SSFF included the NFPA 805 transition review as an action to identify other potential SSFFs, then the intent of Section 2.2 would be met. However, that was not the case; the NFPA 805 transition review was independent of any root cause or extent of condition evaluation for the initial SSFF(s) identified. Since the intent is not met, the licensee should report each different condition as an individual SSFF in accordance with NEI 99-02.

| The staff's interpretation is that multiple SSFFs would have existed~~may exist~~ because the licensee reported to the ROP Working Group that the root cause analysis (an evaluation) did not document the NFPA 805 review as an action to discover other SSFFs.

The staff believes the guidance in NEI 99-02, page 29, lines 22 - 25, that references *additional failures* should be improved to clarify what type of evaluation would be appropriate for this circumstance.

FAQ 13-01
Turkey Point Unplanned Scrams per 7000 Hours Critical

Plant: Turkey Point Unit 3

Date of Event: March 12, 2013

Submittal Date: March 14, 2013

Licensee Contact: Bob Tomonto

Tel/email: 305-246-7327 bob.tomonto@fpl.com

NRC Contact: Tim Hoeg

Tel/email: 305-246-6199 tim.hoeg@nrc.gov

Performance Indicator: IE01, Unplanned Scrams per 7000 Critical hours

Site-Specific FAQ (Appendix D)? YES

FAQ requested to become effective when approved.

This FAQ concerns the March 12, 2013 Turkey Point Unit 3 manual reactor trip. This trip was the third in four quarters and because the plant had accrued a low number of critical hours in that time period (approximately 4500), the NRC Performance Indicator IE01 exceeded the Green-White threshold of 3.0. Florida Power & Light (FPL), as licensee for Turkey Point Units 3 and 4, proposes that Performance Indicator IE01 be shown as "N/A" until Unit 3 has accumulated four full quarters of power operation so that the indicator will be representative of operational performance. The reason for this request is that the site was in a planned extended shutdown during the first three quarters of 2012 (2/26/12 - 9/6/12) to perform upgrades and plant improvements associated with an Extended Power Uprate (EPU). The low number of critical hours was not in any way related to poor operational or regulatory performance.

This request is being submitted as a Plant-Specific FAQ, as discussed in NEI 99-02, Appendix D, which states that the

guidance was written to accommodate situations anticipated to arise at a typical nuclear power plant. However, uncommon plant designs or unique conditions may exist that have not been anticipated. In these cases, licensees should first apply the guidance as written to determine the impact on the indicators. Then, if the licensee believes that there are unique circumstances sufficient to warrant an exception to the guidance as written, the licensee should submit a Frequently Asked Question to NEI for consideration at a public meeting with the NRC.

Question Section

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

- NEI 99-02, Rev 6, Page 10 Lines 25-27.
- NEI 99-02, Rev 6, Page D-1 Lines 16-21.

FAQ 13-01
Turkey Point Unplanned Scrams per 7000 Hours Critical

Event or circumstances requiring guidance interpretation:

Between February 26, 2012 and September 6, 2012, Turkey Point Unit 3 was shutdown for extensive plant modifications and improvements required to support operation at increased power levels. The extended EPU shutdown resulted in a very low number of critical hours during the first three quarters of 2012. As a result of scrams during the first quarter of 2013, Unit 3 will end this quarter with NRC PI IE01 value of approximately 4.5, which is indicative of the volatility of the PI when the number of hours of critical operation is significantly below the 7000 hour reference value.

NEI 99-02, Revision 6 allows for displaying the IE01 value as “N/A” when accumulated critical hours are less than 2400. That is intended to prevent a unit from crossing from Green to White, based solely on a single unplanned scram. NEI 99-02, also clearly indicates that the indicator is monitored over four quarters of operation. Further, the Data Example table on page 11, shows no PI values until after four quarters of data are accumulated. In fact, the example in that table shows that greater than 2400 hours of critical operation had been accumulated in third quarter of 1997, with one scram, yet no PI value is displayed.

NRC Inspection Manual Chapter (IMC) 0351, “Implementation of the Reactor Oversight Process at Reactor Facilities in an Extended Shutdown Condition for Reasons Other Than Significant Performance Problems,” acknowledges that even two quarters of operating data following a plant shutdown of longer than six months “makes this PI more volatile.” NRC IMC 308, “Reactor Oversight Process (ROP) Basis Document,” Attachment 1, Figure 1 provides the basis for using 7000 hours in the denominator is one year’s worth of critical hours assuming an 80% capacity factor. In addition, Figure 1 also states that the Green to White threshold for PI IE01 was selected to “identify outliers from industry norms.”

For Turkey Point Unit 3, the White threshold will be crossed because the denominator is below industry norm (7000 hours) due to the extended EPU outage, not because of the scrams. The unit did not operate for a full four quarters with a “normal” refueling outage and therefore should not be penalized with a significantly high PI because it is not representative of a reduction in safety margin and Turkey Point Unit 3 is not an outlier from industry norms.

A previously submitted White Paper from the NEI ROP Task Force proposed a similar approach for MSPI data. The basis is that the indicator value is heavily influenced by the number of hours of critical operation. When a plant is shutdown for extended outage (*i.e.*, greater than six months), the indicator may not give results that are representative of the intent of ROP. Consequently, it has been proposed that MSPI be “grayed out” for those plants that are shutdown for greater than six months and not be restored until after four quarters of operation have been accumulated.

FAQ 13-01
Turkey Point Unplanned Scrams per 7000 Hours Critical

With a greater than six month refuel outage and only a portion of third quarter 2012, fourth quarter 2012 and the first quarter 2013 with potential critical operating hours, the PI will not display representative values for Turkey Point Unit 3 and should be displayed as "N/A." The PI will not accurately represent plant operation until the full four quarters of plant operation have been accrued.

Potentially relevant existing FAQ numbers:

There are no potentially relevant FAQs. However, it should be noted that recent discussions with NRC staff regarding applicability of MSPI data that is skewed by extended plant shutdowns indicates that indicators that are tied to reactor critical hours may not be valid for shutdowns exceeding approximately 6 months and should not be actively monitored until four quarters after reactor restart.

Response Section

Propose that Turkey Point Unit 3 be granted exemption from the threshold of 3.0 unplanned scrams per 7000 hours critical because of the circumstances for the extended plant shutdown resulting in less than four full quarters of operation. The PI should be displayed as "N/A" on the NRC website until four full quarters of power operation following the extended EPU outage in 2012.

FAQ TEMPLATE

Plant: Susquehanna
Date of Event: June 11, 2012
Submittal Date: June 14, 2013
Licensee Contact: John Tripoli Tel/email: 570-542-3100/jltripoli@pplweb.com
NRC Contact: Patrick Finney Tel/email: (570)542-3189 patrick.finney@nrc.gov

Performance Indicator: IE03

Site-Specific FAQ (Appendix D)? Yes

FAQ requested to become effective when approved

Question Section:

During a planned power reduction of greater than 20% to support a scheduled control rod pattern adjustment, Susquehanna Unit 1 operators encountered a potential equipment problem. To expedite investigation of the plant equipment issue, the operators chose to manually initiate a reactor recirculation system runback which reduced power to the target power level more rapidly than originally projected. Following the runback, and resolution of the potential equipment problem, the planned rod pattern adjustment activities were performed at the target power level within the planned time frame. Power ascension proceeded as planned. Should this rapid power reduction within the planned power reduction scope be counted as an unplanned power change per 7000 critical hours?

Event or circumstances requiring guidance interpretation:

Following the Susquehanna Unit 1 Refueling Outage completed on 6/7/12, during power ascension, on 06/11/12, a planned power reduction from approximately 90% (initial) to approximately 65% (final) was scheduled to perform a rod pattern adjustment evolution. The plan was established greater than 72 hours prior to the actual power reduction.

After, the planned power reduction began at approximately 85% power, plant operators initiated a manual reactor recirculation runback at approximately 84% power to limiter #2 in order to reduce condenser area radiation levels. The runback was necessary to rapidly decrease radiation levels to allow entry into the condenser area to locate the source of water identified on an area camera in the condenser area.

The condenser area water issue was identified and remedied within 15 minutes of entry. The cause was a condenser area sump drain valve.

The planned rod pattern adjustment continued and was completed within the planned time frame of approximately 3 hours from the initial power reduction to completion of the rod pattern adjustment. At that time the ramp up from 70% power began.

PPL did not classify this as an unplanned power change because the planned rod pattern adjustment continued and was completed within the planned time frame. The condenser water

issue was investigated and resolved within the planned time frame of the rod pattern adjustment and at the same power level as the planned evolution. The rod pattern adjustment (planned activity) was successfully performed at the planned power level with no delay.

The question is whether or not interrupting the rod pattern adjustment and initiating a reactor recirculation system runback should count as an Unplanned Power Change per 7000 critical Hours” under NRC IMC 0305 “Operating Reactor Assessment Program” and the guidance in NEI 99-02 “Regulatory Assessment Performance Indicator Guideline” Revision 6.

NEI 99-02, Rev.6, page 13, lines 3 through 6, contain the following Purpose statement for this indicator:

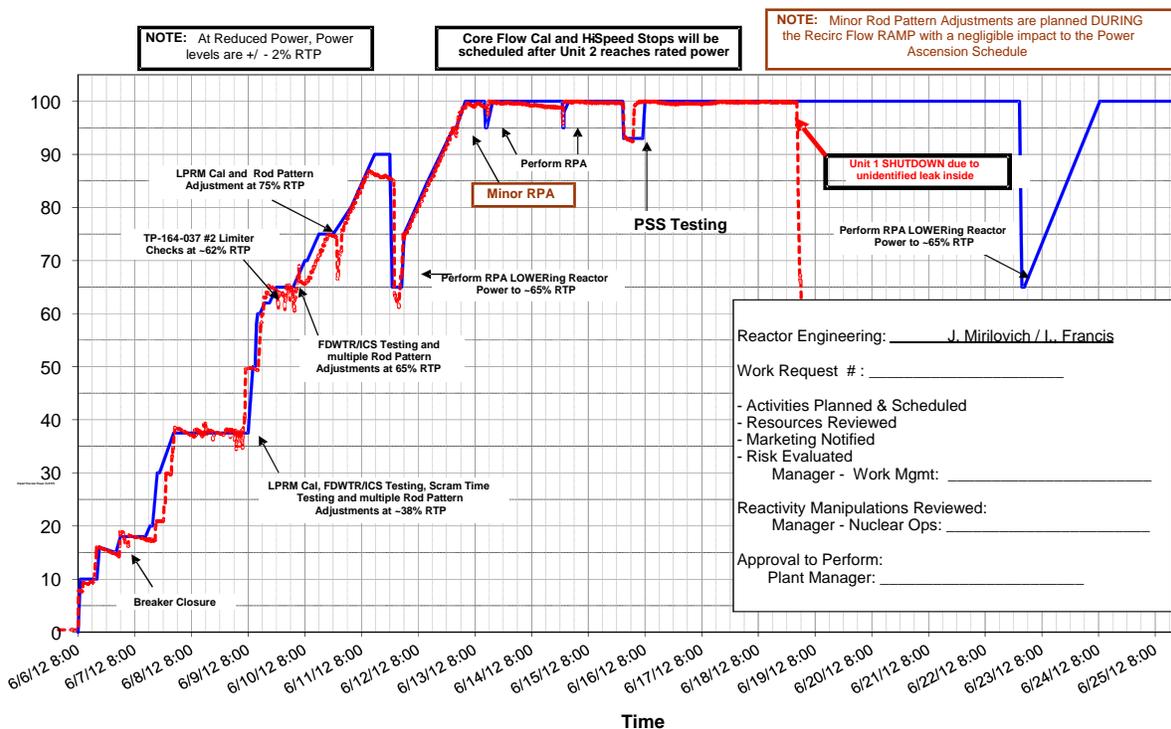
“This indicator monitors the number of unplanned power changes (excluding scrams) that could have, under other plant conditions, challenged safety functions. It may provide leading indication of risk-significant events but is not itself risk-significant. The indicator measures the number of plant power changes for a typical year of operation at power.”

Further, NEI 99-02, Rev.6, page 14, lines 10 through 14 state:

“ Equipment problems encountered during a planned power reduction greater than 20% that alone may have required a power reduction of 20% or more to repair are not counted as part of this indicator if they are repaired during the planned power reduction. However, if during the implementation of a planned power reduction, power is reduced by more than 20% of full power beyond the planned reduction, then an unplanned power change has occurred.”

Susquehanna Unit 1 was in the process of reducing power on 6/11/2014, at 21:35, for a planned rod pattern adjustment. See the load profile below for a comparison of the predicted power changes in blue and the actual power changes in red.

U1C18 BOC Startup Load Profile



PPL Susquehanna concluded that this was not an unplanned power change because:

- The power reduction was greater than 20% and was planned greater than 72 hours in advance of the rod pattern adjustment. The planned reduction was from approximately 90% power to approximately 65% power.
- Shortly after commencing the planned power reduction, in response to a “Condenser Area Transfer Sump High Level alarm, plant operators initiated a manual reactor recirculation pump runback to limiter 2. The runback started at approximately 84% power and ended at approximately 62% power.
- The emergent condenser area issue was resolved quickly and operators completed the planned rod pattern adjustment. Although the planned evolution was briefly delayed it was completed. If the planned evolution had been canceled (not just briefly delayed) because of the emergent condition, this would be considered an unplanned power change.
- The guidance from NEI 99-02, Rev. 6 page 14 discussed above provides the reasoning for this to not be an unplanned power change. Although the power change was greater than 20%, it was resolved during the planned power reduction window and the emergent issue did not require power to be reduced by more than 20% beyond the planned power reduction.

Therefore, an unplanned power change did not occur.

Additional considerations:

The power reduction to perform the rod pattern adjustment was a planned evolution with additional personnel supporting the normal shift compliment. Consistent with the purpose of this indicator, no challenge to safety systems occurred. Shift personnel were ready for a power reduction, a potentially significant problem arose, shift personnel took conservative action to place the plant in a status where nuclear and radiological safety was maximized, and the potentially significant problem was addressed in a matter of minutes rather than a potentially longer period of time with higher radiation exposure.

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

The following NRC Resident Inspector Position (with concurrence from RI/DRP/PB4) position was provided:

A) The inspectors considered the following NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 6, guidance deemed pertinent to this discussion:

- 1) Page 13, Lines 9-10: The purpose of IE03 is to monitor “the number of unplanned power changes (excluding scrams) that could have, under other plant conditions, challenged safety functions.”
- 2) Page 13, Lines 25-29: The term *Unplanned changes in reactor power* is defined as “changes in reactor power that are initiated less than 72 hours following the discovery of an off-normal condition, and that result in, or require a change in power level of greater than 20% of full power to resolve. Unplanned changes in reactor power also include uncontrolled excursions of greater than 20% of full power that occur in response to

changes in reactor or plant conditions and are not an expected part of a planned evolution or test.”

- 3) Page 14, Lines 10-14: “Equipment problems encountered during a planned power reduction greater than 20% that alone may have required a power reduction of 20% or more to repair are not counted as part of this indicator if they are repaired during the planned power reduction. However, if during the implementation of a planned power reduction, power is reduced by more than 20% of full power beyond the planned reduction, then an unplanned power change has occurred.
- 4) Page 14, Lines 16-18: “Unplanned power changes and shutdowns include those conducted in response to equipment failures or personnel errors and those conducted to perform maintenance. They do not include automatic or manual scrams or load-follow power changes.”
- 5) Page 14, Lines 23-24: “Unplanned power changes include runbacks and power oscillations greater than 20% of full power.”
- 6) Page 16, Line 14: “Downpowers of greater than 20% of full power for ALARA reasons are counted in the indicator.”

B) The inspectors considered the following information from PPL sources pertinent to this discussion:

Upon receipt of the sump alarm, the Operators used the Alarm Response Procedure, AR-125-001, Reactor and Turbine Bldg Miscellaneous Sumps Panel 1C692, Revision 8, according to operator logs. The procedure directs operators to “determine source of excessive inleakage and isolate as necessary” and “if excessive leakage is evident, perform ON-169-001.” The following Off Normal Procedures were entered: ON-169-001, Flooding in the Turbine Building, ON-164-002, Loss of Reactor Recirculation Flow, and ON-178-002, Core Flux Oscillations. Operator logs on 6/11/12 at 2148 hours stated “Initiated Recirc Pump Runback to Limiter #2 in order to lower power to reduce Condenser Area Radiation Levels in support of a pending Condenser Area investigatory entry.” The runback was reset at 2316 hours. Reactor power at that time was approximately 62 percent. PPL’s investigation into the event determined this was a mispositioning event based on a valve found in the closed position.

Reactor Engineering staff were present for the control rod pattern adjustment evolution. Their Reactivity Manipulation Request was annotated with the comments “condenser area transfer sump Hi alarm. Downpower to ~60% by *unplanned power reduction* (emphasis added) form OP-AA-338-5.” OP-AD-338-5 is the Controlled Shutdown/Unplanned Power Reduction form and has two means of entry: a controlled shutdown is required or an unplanned power reduction to below the reactor power maneuvering envelope. The copy used was annotated that a Transient was in progress and that a core flow reduction was required to mitigate the transient.

C) The inspectors questioned PPL’s basis for not counting the downpower as unplanned. This is based on A(3) above in that the power reduction was not implemented as planned. Specifically, PPL’s planned power reduction had not included a recirculation runback as part of the downpower sequence, was an interruption of the rod pattern adjustment, and was completed “more rapidly than originally projected.” The resident inspectors also considered the runback a

deviation from the planned power reduction based on the off-normal procedures entered as well as the procedure entered to implement the runback as described in B) above.

Based on the runback being a deviation from the downpower plan, the inspectors further considered the other NEI 99-02 entries described in A) above.

- 1) The annunciator alarm was due to a configuration control error where an operator mispositioned a condenser bay valve. The inspectors considered this information in light of reference A(4) above. Therefore, this was a personnel error that resulted in an operator response by reducing power >20%.
- 2) The operators inserted a recirculation runback in response to the alarm. The inspectors considered this information in light of reference A(5) above. Therefore, this was a runback >20% and unplanned power change.
- 3) Based on PPL operator logs, the runback was initiated to lower radiation levels in the condenser bay. Using reference A(6) above, the downpower occurred for ALARA reasons.
- 4) PPL's description of the event in the FAQ states, in part, that "the runback was necessary to rapidly decrease radiation levels." Based on reference A(1), the inspectors considered that the rapid reduction in power under other plant conditions could have challenged safety functions.
- 5) PPL discovered an off-normal condition that required a >20% power reduction to resolve and it was not an expected part of the planned rod pattern adjustment. Based on this and reference A(2) above, the runback was for an off-normal condition and was not an expected part of the planned evolution.

In summary, the power change that occurred was not planned as implemented. The downpower for a control rod pattern adjustment is normally executed through PPL's General Operating (GO) procedure and supporting Operations and Reactor Engineering procedures. In this case, PPL responded to an annunciator alarm resulting from a human performance mispositioning event by using Off Normal and Unplanned Power Reduction procedures and implemented a Recirculation Runback that resulted in a power change > 20%.

Potentially relevant existing FAQ numbers:

Archived FAQ's related to the Unplanned Power Changes per 7000 Critical Hours PI (IE03) were reviewed for applicability and consideration of the manner in which power was reduced. A direct correlation to this FAQ was not found. However, archived FAQs are not to be used as a reference for current situations. NEI 99-02, Rev. 6, Appendix E, page E-4 states:

"At the time of a revision of NEI 99-02, active FAQs will be reviewed for inclusion in the text. These FAQs will then be placed in an "archived" file. Archived FAQs are for historical purposes and are not considered to be part of NEI 99-02."

The currently approved IE03 FAQs (469 and 483) were reviewed and the changes proposed by these FAQ's are not applicable to the question posed by this FAQ.

Proposed Resolution of FAQ:

The resolution to this event should be to conclude that it should not be reported as an unplanned power change per 7000 critical hours. Propose adding clarification to Page 14, Lines 10-14 as follows: "Problems encountered during a planned power reduction greater than 20% that alone may have required a power reduction of 20% or more to repair are not counted as part of this indicator if they are repaired during the planned power reduction. However, if during the implementation of a planned power reduction, power is reduced by more than 20% of full power beyond the planned reduction, then an unplanned power change has occurred."