FAQ 18-XX
Turkey Point Unit 3 Shutdown

Plant: Turkey Point Unit 3
Date of Event: November 20, 2017
Submittal Date:
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Performance Indicator: IE03 Unplanned Power Changes per 7,000 Critical Hours

Site-Specific FAQ (see Appendix D)? (__) Yes or (XX) No

FAQ to become effective (XX) when approved or (other date)

Question Section

NEI 99-02 Guidance needing interpretation (include page and line citation):
Page 14 - Unplanned power change definition:

The number of unplanned changes in reactor power of greater than 20% of full-power, per 7,000 hours of critical operation excluding manual and automatic scrams.

Unplanned changes in reactor power, for the purposes of this indicator, is a change in reactor power that:
(1) was initiated less than 72 hours following the discovery of an off- normal condition that required or resulted in a power change, of greater than 20% of full power to resolve, and
(2) has not been excluded from counting per the guidance below. 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.

Page 15 – Examples of occurrences that would be counted against this indicator include:

- Power reductions that exceed 20% of full power and are not part of a planned and documented evolution or test. Such power changes may include those conducted in response to equipment failures or personnel errors or those conducted to perform maintenance.
- Power reductions due to equipment failures that are under the control of the nuclear unit are included in this indicator.

Event or circumstances requiring guidance interpretation:

On November 20, 2017, with Turkey Point Unit 3 operating at 100% power, control room operators noted a reduction in Reactor Coolant Pump (RCP)Seal Flow. The plant procedure, 3-ONOP-041.1 “Reactor Coolant Pump Off-Normal,” directs shutdown of the unit following “General Operating Procedure” 3-GOP-100 “Fast Load Reduction” fast power reduction section. The intent is to protect the equipment and shut down the reactor so that repairs can be made. It should be noted that the procedure directs immediate trip of the reactor if RCP

temperatures exceed acceptable limits. However, since RCP temperatures remained within those limits, plant operators commenced Unit 3 shutdown using a normal shutdown procedure.

Timeline:

0323 Control Room alarm on RCP Controlled Bleed Off (CBO) high temperature and entered procedure 3-ONOP-041.1 for RCP off-normal condition
0738 Control Room alarm for RCP Trouble, 3C RCP CBO flow changed from 2.4 gpm to 0. For that condition, 3-ONOP-041.1 directs operations to "commence unit shutdown using (normal plant shutdown procedure) 3-GOP-100, Fast Load Reduction section.
0742 Operations briefed the plan to shutdown the reactor and entered the procedure 3-GOP-100.
0844 Control Room Operators completed a power reduction using 3-GOP-100 and then inserted a manual scram at 18% power.

Unit 3 was shutdown in accordance with plant procedure for equipment protection. Since the unit was initially at 100% power and the shutdown exceeded a 20% power change, the power change was appropriately counted against the Unplanned Power Changes per 7000 Hrs Critical Performance Indicator (IE02).

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

NRC Resident Inspector does not agree with the licensee. The Resident Inspector believes the licensee did not fully address the applicable item in NEI 99-02. Specifically, while the scram occurred at less than 35% power level and was inserted using normal operating procedures, the licensee did not address whether this was a planned shutdown. The plant was shut down following the rapid load reduction procedure, 3-GOP-100 and the procedure used for normal planned shutdowns is 3-GOP-103. Because the licensee did not use the normal method of implementing a planned shutdown, the occurrence should count in the unplanned scrams performance indicator.

Potentially relevant FAQs:

Perry FAQ 440
Date of Event: June 2007
Entered : 3/19/2008

Response Section

Proposed Resolution of FAQ:

Turkey Point Unit 3 shutdown should count against the Unplanned Power Changes Performance Indicator. It was a planned shutdown to address an equipment issue which utilized a normal shutdown procedure. The equipment required a plant shutdown to repair and would not allow for 72 hours for planning. The operating procedure directed Operators to commence shutdown in order to be able to remove the RCP from service. The condition did not warrant insertion of an immediate (unplanned) plant scram and so should be counted as an

Unplanned Power Change, as operators were given the time necessary to conduct an orderly reactor shutdown. The scram was inserted at 18% power, well below the 35% threshold.

The Unplanned Power Changes and Unplanned Scrams Performance Indicators are included in the set of “Initiating Events” and are both intended to provide indication of off normal conditions that can present challenges to plant operators. However, the distinction is that Unplanned Power Changes “monitors the number of unplanned power changes (excluding scrams) that could have, under other plant conditions, challenged safety functions.” By contrast, Unplanned Scrams “measures the rate of scrams per year of operation at power and provides an indication of initiating event frequency.”

The definition of Unplanned Scram implies a plant transient or other condition necessitating immediate trip of the reactor (manual scram in anticipation of automatic scram). The exceptions make it clear that a condition that allows time for operators to take deliberate action to reduce power and then manually manual trip the reactor, should not be counted against the Indicator. This conclusion is further confirmed in the examples of scrams to be included (page 10 of NEI 99-02, rev 7, lines 38-41) and the examples of scrams that are not included (page 11 of NEI 99-02, rev 7, lines 12-14).

NRC inspection Manual Chapter (IMC) 308, contains additional information that helps to inform the understanding of the Unplanned Scrams PI. Page 14 of Attachment 1 states “Some industry representatives indicated that including manual scrams in the current scram PIs could result in non-conservative decision-making by operators during a plant event for which a manual scram is warranted.” From this quote, it is clear that the PI was expanded to capture manual scrams that are initiated to preclude and automatic scram. Since the Turkey Point Unit 3 shutdown was neither automatic, nor to avoid an automatic trip, it should not be counted in the Unplanned Scrams PI.

Turkey Point reduced power in accordance with their general operating procedure and shutdown Unit 3 at 18% power and within less than 72 hours from the initial indication of equipment issue. Thus the shutdown was counted in the Unplanned Power Changes per 7000 hours Critical PI.

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

N/A

PRA update required to implement this FAQ?

No

MSPI Basis Document update required to implement this FAQ?

No