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Our ref: LTR-NRC-08-22

April 22, 2008

Subject: "WCAP-15830, R01, 'Staggered Integrated ESF/LOOP Testing at CE NSSS Plants' dated July 2007, Response to Request for Additional Information issued March 28, 2008, NRC Probabilistic Risk Assessment Branch, April 2008" (Non-Proprietary)

Enclosed is one (1) copy of the non-proprietary version of, "WCAP-15830, R01, 'Staggered Integrated ESF/LOOP Testing at CE NSSS Plants' dated July 2007, Response to Request for Additional Information issued March 28, 2008, NRC Probabilistic Risk Assessment Branch, April 2008."

This submittal does not contain proprietary information and may be placed in the public domain.

Very truly yours,

F. Gigliotti /for

J. A. Gresham, Manager
Regulatory Compliance and Plant Licensing

Enclosure

cc: Holly Cruz (NRC O-12E1)

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NRR

WCAP-15830, Rev 01
"Staggered Integrated ESF/LOOP Testing at CE NSSS Plants" dated July 2007
Response to Request for Additional Information issued March 28, 2008
NRC Probabilistic Risk Assessment Branch

April 2008

After review of the PWROG responses to DRA RAIs, there are a number of these in which additional clarification is required.

- PRA RAI #1 identified that the TR identifies two risk impacts to be considered, "total or aggregate" and "cumulative." The RAI asked what was intended and where in the TR risk assessment methodology these two risk impacts were calculated. In response, the PWROG discusses Section 6.2.2 dealing with PRA scope and RG 1.200, and that the aggregate risk is "dominant" while the cumulative risk is secondary. It is still not answered as to what these two risk metrics are, nor is it demonstrated how the TR calculates them and evaluates them.

Response:
The proposed surveillance test interval (STI) changes impact a number of individual components. The cumulative risk impact is the sum of the calculated risk impact of each individual change taken one at a time. The aggregate risk impact is the total risk impact of the change in surveillance frequency for all impacted components. For this application, the aggregate risk is considered to encompass the cumulative risk therefore the cumulative risk is not calculated independently. The risk impact was determined in terms of ΔCDF and ΔLERF and is discussed in TR Sections 4.4 and 6.0. The cumulative impact of all previous TS changes is implicitly included in the base risk model and had been found to be acceptable via other risk informed applications.

- PRA RAI #4 identified a discrepancy in Sections 4.1 and 4.3.1 for Category C component testing intervals. The PWROG response provided a reiteration of the Section 4.1 testing interval, but did not disposition the inconsistency with Section 4.3.1.

Response:
Section 4.1, Section 4.3.1 will be updated to remove inconsistencies when referring to "other required tests." Other required tests are TS surveillances performed "on the same or more frequent basis."

- PRA RAI #5 questioned the discussion in Section 4.1 regarding applicability to 24-month fuel cycle plants. The PWROG response restated essentially what the TR says, but the staff does not accept that it is clear as to whether or not this TR is applicable to such plants, nor does it accept that plant-specific sensitivity analyses are adequate to justify applicability.

Response:

Section 4.1 will be revised to clarify the WCAP-15830 is only applicable to plants with an 18-month refueling cycle. It is not the intent of WCAP-15830 to define the additional testing requirements necessary to permit staggered integrated ESF/LOOP testing for plants on a 24-month refueling cycle.

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- PRA RAI #6 identified that "special effects testing" discussed in Section 4.3.1 appeared to conflict with other sections of the TR, including the PWROG response to RAI #4, which requires such tests to be required by TS, and not simply under administrative controls. The PWROG response does not remove this discrepancy, since it appears to continue to state that a separate test may be performed when a TS required test does not exist.

Response:
In OG-07-540, the response to PRA RAI 6 advised that Section 4.3.1 will be revised to state that a "alternate separate effects test" may be performed. Section 4.3.1 will be revised to clarify that an "alternate separate effects test" means a new "TS required test." This test must have the pedigree of a TS required test and not be purely under plant administrative control (where it could be easily changed) to justify moving a component from Category A to Category C.

- PRA RAI #8a requested clarification of requiring Category A components to be considered "risk significant" for maintenance rule, since 10CFR50.65 does not use the phrase "risk-significant." In response, the PWROG states that using the phrase "risk-significant" is intended to "advise utilities to enter needed components into their maintenance rule program," and "verify all Category A components are covered by the Maintenance Rule, because all Category A components are risk-significant." This discussion does not clarify the issue.

Response:
The intent of this statement is to clarify that any Category A component not already covered by the utility's Maintenance Rule program must be added to their program.

- PRA RAI #8c questioned how failure trends could be identified with such limited (36 month interval) testing. In response, the PWROG simply restated that such trends would be clearly evident. The staff does not agree with this assessment, and does not believe the Section 9.0.4 can be implemented as written.

Response:
Utilities implementing a staggered integrated ESF/LOOP testing program will continue to accumulate additional equipment and test performance information every 18 months because one train will be tested each refueling interval

- PRA RAI #8d questioned why a handful of specific elements of the TR methodology for PRA modeling were reiterated in Section 9.0.6. The PWROG does not answer this question, referring to responses to previous staff requests.

Response:
Category A3 and A4 components are listed in Section 9.0.6 since they must be added to the utility's risk model. This action is needed independent of whether the ESF/LOOP test is performed on a staggered test basis or not because these components represent omissions from the current risk model.

The staff notes the NEI 04-10 Rev. 1 has been approved, with a TSTF scheduled for late spring, which would permit licensees to relocate most STIs and make changes without prior NRC approval. Both NEI 04-10 and this TR require a PRA which is evaluated with RG 1.200 for technical adequacy.