Southern Nuclear Operating Company

ND-19-0947

Enclosure 4

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to the Licensing Basis Documents

(LAR-19-017)

Note:
Added text is shown as Blue Underline
Deleted text is shown as ~~Red Strikethrough~~
Omitted text is shown as three asterisks (*...*...*)

(This Enclosure consists of 4 pages, including this cover page)

COL Appendix C Changes

COL Appendix C, Subsection 2.2.3, Table 2.2.3-4 – Revise ITAAC 2.2.03.08b.01 as shown below.

Table 2.2.3-4
Inspections, Tests, Analyses, and Acceptance Criteria

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
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175	2.2.03.08b.01	8.b) The PXS provides core decay heat removal during design basis events.	1. A heat removal performance test and analysis of the PRHR HX will be performed to determine the heat transfer from the HX. For the test, the reactor coolant hot leg temperature will be initially at ≥ ~~540~~ 350°F with the reactor coolant pumps ~~stopped~~ running. The IRWST water level for the test will be above the top of the HX. ~~The IRWST water temperature is not specified for the test.~~ The test will continue until the hot leg temperature ~~decreases below 420~~ is ≤ 250°F.	1. A report exists and concludes that the PRHR HX heat transfer rate with the design basis number of PRHR HX tubes plugged is: ≥ ~~1.78 x 10^8~~ 8.46 x 10^7 Btu/hr with ~~520~~ 250°F HL Temp and ~~80°F~~ an initial IRWST temperature~~s~~ of 80°F. ~~≥ 1.11 x 10^8 Btu/hr with 420°F HL Temp and 80°F IRWST temperatures.~~ The heat transfer rate measured in the test should be adjusted to account for differences in the HL and IRWST temperatures and the number of tubes plugged.
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UFSAR Changes

UFSAR Subsection 1.9.4.2.1, *TMI Action Plan Issues*, Revise text as shown below.

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I.G.1 Training Requirements

Discussion:

Item I.G.1 included the issue of natural circulation testing for use as input into operator training.

AP1000 Response:

For the AP1000, natural circulation heat removal using the steam generators is not safety-related, as in current plants. This safety-related function is performed by the passive residual heat removal system. ~~Natural circulation heat removal via the passive residual heat removal heat exchanger is tested for every plant during hot functional testing. This testing of~~ Testing of the passive residual heat removal system meets the intent of the requirement to perform natural circulation testing and the results of this testing is factored into the operator training.

For the AP1000, the tests outlined below are contained in the AP1000 initial test plan and demonstrate the effectiveness of natural circulation cooling.

1. Not Used. ~~During hot functional testing, prior to fuel load, with the reactor coolant pumps not running and offsite power not being used for heat removal, the heat removal capability of the passive residual heat removal heat exchanger with natural circulation flow is verified (See Subsection 14.2.9.1.3, item e).~~

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6. Data obtained from the first plant only natural circulation tests using the steam generators and PRHR is provided for operator training on a plant simulator at the earliest opportunity. ~~Operating training for subsequent plants is also obtained while performing the hot functional PRHR natural circulation test described in item 1 above.~~

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UFSAR Subsection 3.9.1.1.1.17, *Passive Residual Heat Removal Test*, revise as shown below.

During the initial test program ~~hot functional testing with the reactor coolant system in hot standby condition~~, the passive residual heat removal flow and heat transfer rates are tested. Passive residual heat removal flow is initiated by opening the passive residual heat removal isolation valves. ~~The passive residual heat removal cools the reactor coolant system for up to 30 minutes.~~ For component design purposes, the temperature and pressure responses to this testing are based on a conservative definition of the test conditions with a total of 5 occurrences.

UFSAR Subsection 6.3.6.1.2, *Heat Transfer Testing*, revise as shown below.

Initial verification of the heat transfer capability of the passive residual heat removal heat exchanger is performed by conducting a forced flow ~~natural circulation~~ test. This test is conducted during hot functional testing of the reactor coolant system and performed as described in Subsection 14.2.9.1.3 item g). ~~Measurements of heat exchanger flow rate and inlet and outlet temperatures are recorded, and calculations are performed to verify that the heat transfer performance of the heat exchanger is greater than that provided in Table 6.3-2.~~

UFSAR Subsection 14.2.9.1.3, *Passive Core Cooling System Testing*, revise as shown below.

* * *

The passive core cooling system emergency core decay heat removal function is verified by the following testing of the passive residual heat removal heat exchanger.

e) During hot functional testing of the reactor coolant system, the heat exchanger supply and return line piping water temperatures are recorded to verify that natural circulation flow ~~initiates~~ can initiate.

f) Not used. ~~The heat transfer capability of the passive residual heat removal heat exchanger is verified by measuring natural circulation flow rate and the heat exchanger inlet and outlet temperatures while the reactor coolant system is cooled to ≤ 420°F. This testing is performed during hot functional testing with the reactor coolant system initial temperature ≥ 540°F and the reactor coolant pumps not running. The acceptance criteria for the PRHR HX heat transfer under natural circulation conditions are that the heat transfer rate is > 1.78 E+08 Btu/hr based on a 520°F hot leg temperature and ≥ 1.11 E+08 Btu/hr based on 420°F hot leg temperature with 80°F IRWST temperature and the design number of tubes plugged. These plant conditions are selected to be close to the expected test conditions and are different than those listed in Table 6.3-2. The PRHR HX heat transfer rate has been adjusted to account for these different conditions. The heat transfer rate measured in the test should be adjusted to account for differences in the hot leg and IRWST temperatures and number of tubes plugged.~~

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