



Ronald A. Jones
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May 25, 2016

Docket Nos.: 52-027
52-028

NND-16-0185
10 CFR 55.46(b)

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station Units 2 and 3
Request for a Commission-Approved Simulation Facility –
Response to a Request for Additional Information

- References: (1) Letter NND-16-0109, "Request for a Commission-Approved Simulation Facility," dated April 21, 2016 (ADAMS Accession No. ML16112A256)
- (2) NRC Request for Additional Information, "Subject: Request for Additional Information Letter No. 01 Related to Summer Commission-Approved Simulation Facility for Virgil C. Summer Nuclear Station Units 2 And 3 Combined Licenses (Tac No. RQ0441)," dated May 12, 2016
- (3) NRC Public Meetings held on May 5th and 12th, 2016 (ADAMS Accession Nos. ML16113A229 and ML16113A232)

Ladies and Gentlemen:

On April 21, 2016, South Carolina Electric & Gas Company (SCE&G) submitted a request for a Commission-Approved Simulation Facility (CAS) for Virgil C. Summer Nuclear Station (VCS) Units 2 and 3 (Reference 1), pursuant to 10 CFR 55.46(b). On May 12, 2016, the Nuclear Regulatory Commission (NRC) provided a Request for Additional Information (RAI) related to the CAS request (Reference 2).

The enclosure to this letter provides a response to the RAI and to information discussed during public meetings on May 5th and 12th, 2016 (Reference 3).

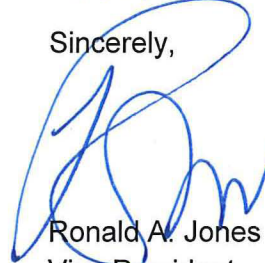
This letter makes no regulatory commitments.

If you have any questions regarding this letter, please contact April Rice at (803) 941-9858.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 25th day of May, 2016

Sincerely,



Ronald A. Jones
Vice President
New Nuclear Operations

RJ/gs

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**South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station (VCS) Units 2 and 3**

NND-16-0185

Enclosure

**Request for a Commission-Approved Simulation Facility –
Response to a Request for Additional Information**

(This Enclosure consists of 7 pages, including this cover page.)

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 Request for a Commission-Approved Simulation Facility –
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| NRC RAI No. | Evaluation | Question(s) | Response(s) |
|----------------|--|---|---|
| 13.02.01-1 | <p>Letter NND-15-0467 (aggregate impact evaluation) stated the test plan for software patches used to correct simulator deficiencies. This test plan was titled the “Patch Post-Fix Test Plan” and the letter stated that notification of the completion of the testing would be provided to the NRC.</p> <p>Letter NND-16-0109 (CAS request letter), Enclosure 7 (List of Westinghouse’ Simulator corrective actions) lists the discrepancy reports that have “passed.”</p> | <p>1. Provide confirmation that a discrepancy report listed as “passed” means all elements of the “Patch Post-Fix Test Plan” have been completed satisfactorily.</p> <p>2. The “Individual fix testing” item 6 states, “Run each ANSI (Malfunctions) MALFS test which had an associated SDR. The “ANSI/ANS 3.5 Testing Redux (integrated response)” item 3 states “Repeat selected Malfunctions which are associated with SDRs fixed.</p> <ul style="list-style-type: none"> • Explain how the latter criterion (item 3) is different from the former criterion (item 6). • For the latter criteria, explain how malfunctions are “selected.” | <p>The test plan, as described in NND-15-0467, has been completed for the fixes installed on the VCS Simulator. Specific retest activities and results are included in NND-16-0109, table E5-1 and table E7-1. A Simulator Discrepancy Report (SDR) was considered “Passed” (or “SAT”) if all the elements of the “Patch Post-Fix Test Plan” (generated by the Simulator Operations Specialists) were satisfactorily met. If passed, the associated SDR would be closed. Otherwise, the test was considered “Unsat” and the associated SDR remained open.</p> <p>Item 6 refers to SDRs that were identified during a specific ANSI/ANS-3.5 Malfunction test. In these cases, the testing was focused on ensuring that the specific SDR was satisfactorily addressed. Item 3 refers to testing of fixes to SDRs that were discovered outside of the ANSI/ANS-3.5 Malfunction testing but for which an existing malfunction test could be used to evaluate the fix. The tests in item 3 were selected based upon the nature of the discrepancy and the scope of coverage offered by an existing malfunction test. In addition to testing the specific fixes, regression testing was accomplished by conducting portions of our ANSI/ANS-3.5</p> |

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|----------------|---|---|---|
| | | <ul style="list-style-type: none"> Does the test plan ensure that the retest scenarios establish the same test conditions under which the simulator discrepancy was originally identified? | <p>testing that were deemed appropriate to ensure the integrity of the simulator. That testing included transients, normal evolutions prior to return to service.</p> <p>The retest scenarios in the test plan recreated the conditions under which the simulator discrepancy was originally identified.</p> |
| 13.02.01-2 | <p>Discrepancy reports 1507-09 (Insufficient PCS flow through single drain line) and 1507-53 (rod bottom alarm) are stated as being corrected in Letter NND-15-0467 (aggregate impact evaluation). Letter NND-16-0109 (CAS request letter), Enclosure 9 (List of open simulator discrepancies) states they are open. The staff could not find any explanation in either document that would explain why they are still open. If they are open it appears they should be addressed in the aggregate impact evaluation along with the other open simulator discrepancies.</p> | <ol style="list-style-type: none"> Are these discrepancies open or closed? Explain the status. If these discrepancies are open explain their individual and aggregate impact on the simulation facilities capability for supporting operator exams. | <p>SDR 1507-09 and 1507-53 are both currently open.</p> <p>SDR 1507-09 is transparent to the Operators.</p> <p>PCS normally has three parallel flowpaths that provide flow to the top of the Containment vessel at the top. There is an UFSAR flow requirement for sufficient flow when all drain paths are available and an additional Westinghouse M3C table that provides a nominal flow for each flowpath individually.</p> <p>The UFSAR requirement for flow through 2 flowpaths was, and remains, sufficient. The SDR documented that flow for only one drain line achieved only 73% of the required flow listed in the Westinghouse M3C table. The CAS123 patch set improved the individual flowpath flowrate to 93% of the M3C requirement. This small difference does not alter the plant response to a full</p> |

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| | | | <p>PCS actuation, or adversely affect the response to a partial actuation. It does not affect the ability to create, validate, and administer an equitable and consistent exam, because the plant response to an actuation are repeatable. It also does not contribute to any aggregate impact of other SDRs because the difference in flow is so small, and the results of actuation are consistently achieved.</p> <p>SDR 1507-53 is transparent to the Operators.</p> <p>The "Any Rods at Bottom" alarm is actuating anytime a bank of rods are being driven through a rod height of 12 steps in sequence. This should be automatically bypassed under these circumstances.</p> <p>This was initially scoped to be fixed as part of the Commission Approved Simulator (CAS) patches, but was not pursued based on consideration of the time required to develop, retest, and install the fix. That fix is planned for BL8.</p> <p>This SDR is currently being mitigated through an Initial Condition modification, and use of Application (APP) files. The end result is transparent to the operator. It does not affect the ability to create, validate, and administer an equitable and</p> |

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| | | | consistent exam. It also does not contribute to any aggregate impact of other SDRs, because it is being mitigated so that it is transparent to the Operators. |
| 13.02.01-3 | Discrepancy report VC-1508-108 (Simulator Failures of J station commands when resetting <1/day) identifies failures which would appear to disable the simulator in a manner that could interrupt simulator exams. The frequency of problem occurrence is not clear. | 1. Provide additional detail describing why the discrepancy does not affect the simulator’s capability to execute the operator exam. | This item is transparent to the Operators. This discrepancy was noted after 24 hours or greater of prolonged simulator operation without a simulator restart. The simulator had experienced Jstation commands not being executed and Alarm Presentation System (APS) server indicating FROZEN while the simulator was in run. These were observed during the initial timeframe of simulator service at VCS. It has not occurred after implementing a combination of simulator upgrades (patches) and administrative controls (periodic restarts). The SDR is left open while considering enhancements to eliminate the need for the periodic restarts. Note that the simulator will necessarily have to be restarted for exam security purposes for both exam development and conduct of exams. It does not affect the ability to create, validate, and administer an equitable and consistent exam. |

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Additional Information Related to Questions Discussed During the NRC Public Meetings on May 5th and 12th, 2016:

Provide verification of the total number of SDRs as described in NND-15-0467, Enclosure 6.

99 SDRs were considered in the Aggregate Assessment included in NND-15-0467.

Detailed explanation:

NRC staff members asked:

NND-15-0467, Enclosure 6, Page 2 of 77 – The first paragraph of the “Background” section states that an individual, and aggregate assessment of the impact of the 33 newly identified simulator discrepancy items was conducted....

Is 33 the correct number? It appears to conflict with the previous sentence. If 33 is correct, what reduced the discrepancies evaluated from 66 to 33?

Verbal response provided during the phone call:

This is a typo. The 33 items referenced are those items that were previously determined significant as a result of the first Assessment done on 4/28/15. Those previously identified 33 items have been rolled forward into the Assessment done on 9/1/15, to be considered for any addition aggregate impact along with the 66 new items identified.

Follow up response:

NND-15-0567, Request for a Commission-Approved Simulation Facility – Response to Unresolved Items, included an Assessment of New Simulator Discrepancy Report (SDR) Items related to CAS in Enclosure 4 (Redacted) and Enclosure 6 (Un-Redacted). This RAI Response clarifies the first two paragraphs of the “Background” section, beginning on the middle of page 2 of 77 of Enclosure 6 as follows:

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There were 66 SDRs added to the VCS Unit 2 and 3 Simulator Discrepancy Report (SDR) database between 4/28/15 and 9/1/15. An individual, and aggregate assessment of the impact of the ~~33~~ newly identified Simulator Discrepancy items was conducted to determine if any of the issues, by themselves or in aggregate, constituted a challenge to any of the 13 criteria of 10 CFR 55.45(a). **Additionally, there were 33 SDRs which had been previously identified as significant in an earlier Aggregate Assessment done on 4/28/15. These 33 SDRs were also rolled forward into this (9/1/15) Aggregate Assessment to determine if any of the issues, considered in aggregate with the 66 newly identified SDRs constituted a challenge to any of the 13 criteria of 10 CFR 55.45(a). In total, 99 SDRs were considered during the 9/1/15 Aggregate Assessment.**

In order to facilitate an assessment of the 66 new SDRs, items were first screened to determine if they potentially impact the 13 criteria. Out of the 66 discrepancies, 47 were determined to be relevant to the 13 criteria listed under 10 CFR 55.45(a). A table of the 19 items not impacting 10 CFR 55.45(a) is provided at the end of this assessment, starting on page 64. The table includes an evaluation bases for why each item screened out as not impactful.

Section 1 of the Aggregate Assessment provides an assessment of each SDR against the 13 NRC Operating test attributes described in 10CFR55.45(a)(1-13). The assessment for each attribute is further broken down into 4 parts:

- a. Identifying the new SDRs added to the list, and a summary of each items impact;**
- b. The aggregate impact of these new SDRs;**
- c. Any SDRs previously identified during the 4/28/15 assessment – and the impact of those included with the new items,**
- d. The conclusion of impact of SDRs binned to this attribute**