NRR-PMDAPEm Resource

From: Martin, Robert
Sent: Wednesday, May 14, 2014 4:40 PM
To: McElroy, G. Ken (GKMCELRO@southernco.com); eganners@southernco.com
Cc: Hamzehee, Hossein; ONeal, Daniel; Gennardo, David; Elliott, Robert; Bucholtz, Kristy; Pascarelli, Robert
Subject: DRAFT RAIs - Vogtle 4b TS Initiative
Attachments: 05 14 14 RAIs 4b Draft .pdf

By letters dated September 13, 2012, and August 2, 2013, Southern Nuclear Operating Company, Inc. (SNC), submitted a license amendment request (LAR) to modify the VEGP Technical Specifications requirements to permit the use of Risk Informed Completion Times in accordance with Nuclear Energy Institute (NEI) report NEI- 06-09, Revision 0, *Risk Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS).*

The Nuclear Regulatory Commission (NRC) staff is continuing its review of this LAR and is developing further requests for additional information (RAIs). The attached DRAFT RAIs are provided for your information and to ensure that the RAIs are understandable.

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Subject: DRAFT RAIs - Vogtle 4b TS Initiative
Sent Date: 5/14/2014 4:39:50 PM
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Mr. C. R. Pierce
Regulatory Affairs Director
Southern Nuclear Operating Company, Inc.
Post Office Box 1295, Bin - 038
Birmingham, AL 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 (VEGP) – REQUEST FOR ADDITIONAL INFORMATION (TAC NOS. ME9555 AND ME9556)

Dear Mr. Pierce:

By letters dated September 13, 2012, and August 2, 2013, Southern Nuclear Operating Company, Inc. (SNC), submitted a license amendment request (LAR) to modify the VEGP Technical Specifications requirements to permit the use of Risk Informed Completion Times in accordance with Nuclear Energy Institute (NEI) report NEI- 06-09, Revision 0, *Risk Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS).* The Nuclear Regulatory Commission (NRC) staff finds that additional information is needed as set forth in the Enclosure.

The NRC staff would usually request that the additional information be provided within thirty days. However, considering the pilot nature of this review and the additional time that may be required for SNC to respond, we request that SNC provide a schedule for the responses to these RAIs, not to exceed 120 days.

Sincerely,

Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosure: Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION (RAI)

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SOUTHERN NUCLEAR OPERATING COMPANY, INC (SNC)

VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 (VEGP)

By letter dated September 13, 2012, as supplemented on August 2, 2013, (Agencywide Documents Access and Management System Accession Nos. ML12258A055 and ML13217A072, References 1 and 2, respectively), SNC submitted a license amendment request (LAR) to modify the VEGP Technical Specification (TS) requirements to permit the use of Risk Informed Completion Times (RICT) in accordance with Nuclear Energy Institute (NEI) 06-09, Revision 0, *Risk Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines* (Reference 3). The Nuclear Regulatory Commission (NRC) staff finds that the following additional information is needed.

Technical Specification Review RAIs

In the LAR, SNC has requested changes that are considered a deviation from what was approved by the NRC staff in Technical Specification Task Force (TSTF) Traveler TSTF-505 (Reference 4). Specifically, the deviations are:

- TS Limiting Condition for Operation (LCO) 3.5.5, "Seal Injection Flow," Condition A,
- TS LCO 3.7.3, "Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and Associated Bypass Valves," Conditions A, B, C, and D, and
- TS LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, Starting Air, and Ventilation," Condition A.

1. Provide a technical basis for NRC staff review for the requested change to TS LCO 3.5.5, "Seal Injection Flow," Condition A or remove the requested change from the LAR.

2. Provide a technical basis for NRC staff review for the requested changes to TS LCO 3.7.3, "Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and Associated Bypass Valves," Conditions A, B, C, and D or remove the requested changes from the LAR.

3. Provide a technical basis for NRC staff review for the requested change to TS LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, Starting Air, and Ventilation," Condition A or remove the requested change from the LAR.

4 An oversight occurred during the NRC review of TSTF-505, Revision 1 and the "-A" was omitted from the reference to NEI 06-09, Revision 0, (Reference 3) in the Risk Informed Completion Time Program in proposed TS section 5.5.22. Please provide a revised TS 5.5.22, with the reference as follows (Reference 5): Nuclear Energy Institute, NEI 06-09, "Risk-Informed Technical Specification Initiative 4b: Risk-Managed Technical Specification (RMTS)," Revision 0-A, October 2012.

5 An oversight occurred during the NRC review of TSTF-505, Revision 1, and a specific scenario was not satisfactorily addressed. SNC is requested to address the following scenario.

For this scenario, the TS System is comprised of train A and train B and performs two associated Probabilistic Risk Assessment (PRA) success criteria, called PRA function 1 and PRA function 2.

In an emergent condition, with both TS system train A and train B TS inoperable and the associated PRA success criteria considered PRA functional with train A able to perform PRA function 1 and train B able to perform PRA function 2 (i.e., neither train by itself can perform PRA functions 1 and 2 but both trains together maintain PRA functionality), the NEI 06-09 guidelines will allow a risk informed completion time to be entered in this scenario, however there is no way to repair either train A or train B without losing PRA functionality. In this scenario, NEI 06-09 allows delaying a plant shutdown up to 30 days, depending on the system's risk significance, to repair the necessary system. This scenario was overlooked during the NRC staff's review of TSTF-505, and although the NRC staff approved NEI 06-09 and TSTF-505 it was not our intention to allow delaying plant shutdown in this type of scenario.

Please provide changes to the proposed "Risk Informed Completion Time Program," in VEGP TS 5.5.22, which prevents entry into a risk informed completion time for this specific scenario.

Probabilistic Risk Assessment Review RAIs

1. Internal Events PRA Peer Review [1]

In Enclosure 2 of the LAR (page E2-4), it is stated that, "In May 2009, the VEGP PRA internal events model Revision 4 (including internal flooding) was reviewed against the requirements of the 2007 version of the PRA Standard … as amended by RG [Regulatory Guide] 1.200, Revision 1 […]."

Please summarize the peer review conducted in May 2009 and clarify if it was a full peer review where the team met the guidelines outlined in NEI 00-02 (Reference 9) (e.g., 5 or 6 members that included the full range of experience required to perform an internal events PRA), followed the process outlined in NEI 00-02 (e.g., offsite preparation, one week onsite review, and post review documentation), and reviewed the PRA against all the elements in the ASME 2009 standard (Reference 10). If the review was not a full peer review, please describe the review in detail and provide all earlier Findings and Observations (F&Os) from any previous reviews.

2. Unreviewed Analysis Methods (UAMs) [2]

[1] A similar RAI was made as part of the staff's review of another licensing action as noted in Reference 6.

Please identify and provide technical justification for any fire PRA methodology that has not been formally accepted by the NRC staff. The NRC staff has formally accepted methods during resolution of UAMs as well as NUREG/CR-6850 (as supplemented) (References 13 and 14) or the National Fire Protection Association Standard (NFPA) 805, "Performance Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," frequently asked question (FAQ) guidance. If a position on a method has been established by the NRC, please confirm that the accepted version of the method is used per the NRC position and, if not, then provide an acceptable alternative.

3. LAR Page E2-34, F&O FSS-G4-01

Please discuss the method for assigning barrier failure probabilities of different types. If it does not follow NUREG/CR-6850, please provide the basis for it. If NUREG/CR-6850, Section 11.5.4, Table 11-3 fire barrier type failure probabilities are used, is the sum of the barrier failure probabilities used in the Fire PRA? If not, please explain how the Fire PRA will be updated to account for barriers that require summing these barrier type probabilities.

4. LAR Page E2-41, F&O UNC-A2-01

The F&O description for UNC-A2-01 in LAR Table E2.5 notes differences were identified between mean values of Core Damage Frequency (CDF) and Large Early Release Frequency (LERF) when using the new Electric Power Research Institute (EPRI) ignition frequencies and NUREG/CR-6850 Table 6-1 ignition frequencies. The resolution of the F&O notes that the Fire PRA is based on the updated EPRI fire frequency values as published in NUREG/CR-6850, Supplement 1. For purposes of 4b, a sensitivity analysis should be applied to the baseline Fire PRA model using the NUREG/CR-6850 Table 6-1 ignition frequency bins characterized by an alpha that is less than or equal to one. If the sensitivity analysis results in the total CDF or LERF exceeding the RG 1.174 (Reference 15) baseline risk acceptance criteria of 1E-4/yr (CDF) or 1E-5/yr (LERF), then explain how you plan to reduce risk to bring the total CDF or LERF into the acceptable guidance region for the 4b application. Furthermore, provide assurance that the RICT program configuration control program will keep the PRA model up-to-date with the most current NRC-accepted fire ignition frequency database when updates are made to the database.

5. PRA Functional: Safety Margins

The LAR states in the "Significant Hazards Considerations" section: "The proposed change permits the extension of Completion Times provided risk is assessed and managed within the Risk Informed Completion Time Program. The proposed change implements a risk-informed configuration management program to assure that adequate margins of safety are maintained."

A TS operability determination is made before a PRA functionality determination. A structure, system, and component (SSC) which is inoperable may be found to be outside limits in the TS or applicable code performance parameter(s), according to Inspection Manual Part 9900 (now Inspection Manual Chapter 0326, Reference 16); therefore, a PRA functional SSC may have parameter(s) outside certain limits. As such the RICT program must assure that safety margins

[2] A similar RAI was made as part of the staff's review of another licensing action as noted in References 11 and 12.

are maintained for a PRA functional condition.

Safety margins assessment includes an assessment of assumptions or inputs to a safety analysis as discussed in RG 1.177 (Reference 17):

> Safety analysis acceptance criteria in the Final Safety Analysis Report (FSAR) are met or proposed revisions provide sufficient margin to account for analysis and data uncertainties (e.g., the proposed TS CT [Completion Time] or SF [Surveillance Frequency] change does not adversely affect any assumptions or inputs to the safety analysis, or, if such inputs are affected, justification is provided to ensure sufficient safety margin will continue to exist). For TS CT changes, an assessment should be made of the effect on the FSAR acceptance criteria assuming the plant is in the condition addressed by the proposed CT (i.e., the subject equipment is inoperable) and there are no additional failures. Such an assessment should result in the identification of all situations in which entry into the condition addressed by the proposed CT could result in failure to meet an intended safety function.

Please explain if the RICT program considers these factors related to safety margin as noted above for a PRA functionality determination.

6. <u>PRA Functionality: Success Criteria</u>

From NEI 06-09, Section 11.1, "If a component is declared inoperable due to degraded performance parameters, but the affected parameter does not and will not impact the success criteria of the PRA model, then the component may be considered PRA functional for purposes of the RICT calculation. …"

Since NEI 06-09 states that the methodology is consistent with RG 1.174 philosophy, success criteria used for the RICT program must be consistent with maintaining safety margin and defense in depth philosophy as described in RG 1.174.

Success criteria information could be at a detailed or a high level (e.g., parameter, component, train, system, or other). The appropriate success criteria should be considered for a PRA functionality determination when evaluating the impact on success criteria of the PRA model. For example, a PRA functionality determination may need to consider more than train-level success criteria (e.g., potentially both system and train level success criteria, and possibly other success criteria information). Please explain how your RICT program ensures the appropriate success criteria are considered in a PRA functionality determination.

7. <u>SSC Performance Levels</u>

Per 10 CFR 50.36(c)(2) *Limiting conditions for operation.* (i) Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility.

Section 3 of the TSTF-505 Model Safety Evaluation (SE) (Reference 18) states:

> The RICT Program provides the necessary administrative controls to permit

extension of CTs and thereby delay reactor shutdown or remedial actions, if risk is assessed and managed within specified limits and programmatic requirements. The specified safety function or performance levels of TS required SSCs are unchanged, and the remedial actions, including the requirement to shut down the reactor, are also unchanged; only the CTs for the Required Actions are extended by the RICT Program.

Please discuss how your RICT program addresses how required SSCs performance levels are unchanged.

8. PRA Functionality: Reliability

Section 3 of the TSTF-505 Model SE states: "The proposed RICT Program uses plant-specific operating experience for component reliability and availability data. Thus the allowances permitted by the RICT Program are directly reflective of actual component performance in conjunction with component risk significance."

In some instances a PRA functional SSC would be assigned its nominal unreliability in the PRA model for a RICT calculation. Depending on the specific situation and the degradation mechanism for the PRA functional SSC, the nominal reliability model may not be applicable. Please address the following:

a. Explain how the RICT calculation would be performed, considering PRA functionality, if an evaluation determined that the SSC's reliability may be less than nominal (e.g., an increase in the failure rate over the PRA mission time). Would it be considered as non-functional for the RICT calculation (i.e., not taking credit for PRA functionality in the RICT)?

b. If it was determined to use a nominal reliability for a PRA functional SSC, would the potential for uncertainty in the reliability be considered in the RICT program? For example, does the RICT program include performing a sensitivity analysis to identify additional Risk Management Actions (RMAs) for defense in depth?

9. PRA Functionality: Process

A PRA functionality determination may include a number of steps, both non-PRA related and PRA related, which can take time to complete. For example, a TS operability determination must be made before a PRA functionality determination, among other steps. Describe the process to support a PRA functionality determination and whether this process can be accomplished within short LCO completion time frames, such as those associated with a loss-of-function, in order to support a quality decision on the RICT. If there is not enough time to step through the process, consider removing the RICT program from the loss-of-function LCOs.

10. Common Cause Failure (CCF) Modeling

RG 1.177 Appendix A describes an acceptable method for treating CCF for equipment out of service for preventive maintenance or for corrective maintenance. The CCF treatment discussed

on page E6-7 of the LAR does not appear to be consistent with this guidance. Provide assurance that RICT calculations will follow RG 1.177 guidance for CCF for preventive and corrective maintenance, or an acceptable alternative.

11. SSCs Not In the PRA

a. In some instances SSCs may not be in the PRA model which may have an impact on CDF and LERF, and are necessary to quantify a RICT. Examples are the SSCs noted in Table E6.1 of the LAR. In such instances, how does your RICT program consider quantification of a RICT for those SSCs?

b. In other instances, SSCs may not be in the PRA model as a result of analyses showing no impact on CDF or LERF. In such instances a RICT may not be quantifiable for the SSCs. Please address the following for TS LCOs 3.6.6, and 3.6.2.

i. TS LCO 3.6.6 Containment Spray (CS) and Cooling Systems. Table E1.1 of the LAR (page E1-8) notes that CS is not credited in the PRA for containment heat removal. It also notes that the CS system does contribute to the draw down on the RWST which impacts CDF, but inoperability of CS has no severe risk impact and is included in the scope of the RICT program. The CS system also appears to be not modeled in the PRA due to low probability. Please explain if the impact on the RWST level is incorporated into the PRA model.

ii. TS LCO 3.6.2 Containment Air Locks. The LCO required actions apply to restoring the air lock to operable status after verifying a door is closed. According to LAR Table E1.1 (page E1-7) the containment air locks are in the PRA model. However, it is not clear if there is an impact expected on CDF. LAR Table E1.2 (page E1-20) appears to indicate there is no impact on CDF. However, according to LAR Table E1.3 (page E1-32), and "Note 2," (page E1-41), "the calculated RICT value is less than the front-stop CT, so the RICT program cannot be entered for this instance," which appears to indicate that the impact on LERF would not allow the RICT to be applied to the TS LCO. Please explain how these observations support the inclusion of this TS LCO in the RICT program.

12. Variable Limits

According to TSTF-505, Rev. 1, Scope Item 9 the following is assumed for the Traveler:

> The Traveler will not modify Required Actions in Conditions in which variables are not within limit unless a modeled system could be used as a surrogate in calculating a RICT (e.g., using the modeled pressurizer as a surrogate for pressurizer level).

According to the LAR, the following LCOs cite variable limits:

3.5.1 Accumulators Condition A
3.5.4 Refueling Water Storage Tank (RWST) Condition A
3.6.3 Containment Isolation Valves Conditions A, B, and C

3.7.6 (Unit 1) Condensate Storage Tank (CST) Condition A
3.7.6 (Unit 2) Condensate Storage Tank (CST) Condition A

The RAI response letter dated August 2, 2013, notes on page E-11 that for the Unit 1 and Unit 2 TS LCO 3.7.6, the CST itself is the surrogate. Does this mean the CST will be unavailable in the PRA model to calculate a RICT? For the other TS LCOs above, please also discuss the surrogate and its ability to be used for a RICT calculation. Also note if the surrogate provides a conservative estimate.

13. Programmatic: Success Criteria Differs from Design Basis

The LAR, Enclosure 1, was provided to address the following submittal guidance:

"The comparison should justify that the scope of the PRA model, including applicable success criteria such as number of SSCs required, flow rate, etc., are consistent [with the] licensing basis assumptions (i.e., 50.46 ECCS flow rates) for each of the TS requirements, or an appropriate disposition or programmatic restriction will be provided" (Reference 19, page 21).

Enclosure 1 identified LCOs with differences between the design basis and the PRA success criteria. For such LCOs, please address the following:

a. In a number of instances, the disposition in Table E1.1 justifies such differences as PRA success criteria representing "more realistic success criteria." Since the PRA success criteria differ in some instances from design basis success criteria, please confirm that the PRA success criteria is up-to-date, clearly and fully documented for the "4b" application to the level of detail necessary for the RICT program, and appropriate review processes are being implemented for the supporting calculations.

b. Discuss any applicable programmatic restrictions.

14. RMAs for Infrequently Tested SSCs

Some SSCs or SSC function(s) in the PRA model may have relatively long times between surveillances or tests. Some SSCs or SSC function(s) may be under the TSTF-425 program for surveillance test intervals which have a monitoring program requirement. For such SSCs or SSC function(s) would a check of the results of the standby SSC's monitoring program be made prior to establishing a RICT, or would defense in depth RMAs related to the SSC be a consideration, depending on the SSC and standby time between surveillances or tests, for a RICT?

15. RMAs

The EPRI Equipment Out of Service (EOOS) tool provides insights such as the important equipment available during the RICT to help in identifying RMAs. However, other insights (e.g., important fire areas) may also be checked for potential RMAs. Please describe how your RICT program guidance considers insights, other than the EOOS tool-generated list of equipment, to identify RMAs.

16. Risk Management Action Times (RMATs)

NEI 06-09 guidance notes that if an emergent condition occurs such that a RMAT is exceeded that RMAs shall be identified and implemented. Discuss how your RICT program addresses the unlikely scenario of exceeding 1E-3/yr (CDF) and 1E-4/yr (LERF) as a result of an emergent condition, how the reduction in risk will be known given that NEI 06-09 does not require RMAs to be quantified, and the immediate steps your RICT program would perform if such an event were to occur.

17. RG 1.177 Tier 2

A Tier 2 assessment would be performed for each RICT prior to entry into the TS LCO. Discuss your RICT program Tier 2 requirements and implementation. Also, provide assurance that the Tier 2 results are reviewed for reasonableness.

18. Scope of Equipment

NEI 06-09 guidance states that RICT and RMAT calculations shall include contributions from external events, internal flooding, and internal fire events.

Some equipment may not be considered for a RICT calculation. Please describe the intended scope of the equipment not to be included in your RICT program (e.g., fire-protection, seismic-related, etc.).

19. Scope of the Implementation and Monitoring Program

The implementation and monitoring program described in RG 1.177 includes maintenance rule control for TS equipment affected by the TS change. Please provide assurance that the proposed TS LCO equipment for the RICT program is covered under the licensee's maintenance rule program.

20. RICT for Multiple SSCs inoperable

In some of the proposed TS LCOs, multiple SSCs may be inoperable per TS; however, the applicable TS required actions require restoring a subset of the number of SSCs. An example is TS LCO 3.4.11 Required Actions F.2 and F.3. Condition F is a condition for more than one block valve inoperable. The RICT is being proposed for F.2, restore one block valve to operable status, and F.3, restore remaining block valve to operable status. Another example is TS LCO 3.7.4 Condition B, two or more required Atmospheric Relief Valve (ARV) lines inoperable. Required Action B.1 is to restore at least two ARV lines to operable status. In such cases a RICT is being requested. If a TS LCO Condition is entered due to multiple SSCs inoperable (e.g., greater than one block valve for TS LCO 3.4.11, or greater than two ARVs for TS LCO 3.7.4), the RICT for restoring multiple SSCs is expected to be shorter than the RICT for restoring a lesser number of

SSCs (e.g., at least 1 block valve, or at least two ARVs). Please clarify how a RICT will be calculated for restoration of a lesser number of SSCs than for which the LCO was entered.

21. TS LCO 3.7.2 Required Actions D.1 and E.1

TS LCO 3.7.2 Required Actions D.1 and E.1 require "verification" for Main Steam Isolation Valves (MSIVs) versus "restoration." In such a case, please explain how a RICT would be performed if a

MSIV was considered PRA functional and there is no required action to "restore" to operability. Consider, for example, if PRA functionality was related to the MSIV closure status (e.g., not fully closed). Without a "restore" required action how is a time length determined for a RICT calculation?

22. TS LCO 3.7.9 Condition B Success Criteria

License Amendments No. 170 and 152 for Vogtle Units 1 and 2 (Reference 20), respectively, revise TS 3.7.9 by changing the criteria for nuclear service cooling water (NSCW) tower three-and four-fan operation and provides a 7-day CT for one fan/spray cell being inoperable under certain conditions.

Please describe whether this will have any impact on the PRA success criteria and explain how you plan to meet the minimum performance level of the equipment. If it is determined that the PRA success criteria needs to be updated for TS LCO 3.7.9 Condition B, please explain how you plan to update the PRA success criteria.

Note that, per LAR Table E1.1 (page E1-12), the current PRA success criteria for TS LCO 3.7.9 Condition B requires: "4 of 4 fans when SI signal has actuated." (This is discussed further in Table E6.2 on page E6-5.) This seems to indicate that 4 fans are currently required to ensure the minimum performance level of the equipment in the event of a LOCA, per the PRA success criteria.

References

1. Letter from Mark J. Ajluni, SNC, VEGP, to NRC, "License Amendment Request to Revise Technical Specifications to Implement NEI 06-09, Revision 0, 'Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," September 13, 2012 (ADAMS Accession No. ML12258A055).

2. Letter from Charles R. Pierce, SNC, VEGP, to NRC, "Response to Request for Additional Information on Plant Vogtle License Amendment Request to Revise Technical Specifications to Implement NEI 06-09, Revision 0, 'Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," August 2, 2013 (ADAMS Accession No. ML13217A072).

3. Nuclear Energy Institute, NEI 06-09, "Risk-Informed Technical Specification Initiative 4B Risk-Managed Technical Specification Guidelines," Revision 0, November 2006 (ADAMS Accession No. ML063390639).

4. Technical Specification Task Force Traveler TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b," June 14, 2011, and Model Application dated January 31, 2012. (ADAMS Package Accession No. ML120330410)

5. Nuclear Energy Institute, NEI 06-09, "Risk-Informed Technical Specification Initiative 4b: Risk-Managed Technical Specification (RMTS)," Revision 0-A, October 2012 (ADAMS Accession No. ML12286A321).

6. Letter from Charles R. Pierce, Southern Nuclear Company Vogtle Units 1 and 2, to U.S. Nuclear Regulatory Commission, “Pilot 10 CFR 50.69 License Amendment Request Response to Request for Additional Information,” May 17, 2013 (ADAMS Accession No. ML13137A480).

7. ASME PRA Standard ASME RA-Sc-2007, Addenda to ASME RA-S-2002, “Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications.”

8. Regulatory Guide 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,” Revision 1, January 2007 (ADAMS Accession No. ML070240001).

9. NEI 00-02, Revision 1 “Probabilistic Risk Assessment (PRA) Peer Review Process Guidance,” Revision 1, May 2006 (ADAMS Accession No. ML061510621).

10. ASME/ANS PRA Standard ASME/ANS RA-Sa-2009, Addenda to ASME RA-S-2008, “Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications.”

11. Letter from Charles R. Pierce, Southern Nuclear Company Vogtle Units 1 and 2, to U.S. Nuclear Regulatory Commission, “Pilot 10 CFR 50.69 License Amendment Request Response to Request for Additional Information,” July 2, 2013 (ADAMS Accession No. ML13184A267).

12. Letter from Charles R. Pierce, Southern Nuclear Company Vogtle Units 1 and 2, to U.S. Nuclear Regulatory Commission, “Pilot 10 CFR 50.69 License Amendment Request Response to Request for Additional Information,” September 13, 2013 (ADAMS Accession No. ML13256A306).

13. NUREG/CR-6850 and EPRI 1011989, EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities, Volumes 1 and 2, September 2005.

14. NUREG/CR-6850 Supplement 1 and EPRI 1019259, Fire Probabilistic Risk Assessment Methods Enhancements, September 2010.

15. Regulatory Guide 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” Revision 2, May 2011 (ADAMS Accession No. ML100910006).

16. Inspection Manual Chapter 0326, “Operability Determinations and Functionality Assessments for Conditions Adverse to Quality or Safety,” (ADAMS Accession No. ML13274A578).

17. Regulatory Guide 1.177, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications,” Revision 1, May 2011. (ADAMS Accession No. ML100910008)

18. Nuclear Regulatory Commission, “Model Safety Evaluation for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF-505, Revision 1, ‘Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b,’” (ADAMS Accession No. ML120200401).

19. Nuclear Regulatory Commission, “Final Safety Evaluation for Nuclear Energy Institute Topical Report 06-09, ‘Risk-Informed Technical Specification Initiative 4B Risk-Managed Technical Specification Guidelines’,” Revision 0, May 2007 (ADAMS Accession No. ML071200238).

20. Nuclear Regulatory Commission, “VEGP Units 1 and 2 – Issuance of Amendments Regarding Nuclear Service Cooling Water (NSCW) Fan Operation,” September 18, 2013 (ADAMS Accession No. ML13231A054).