

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

SOUTHERN NUCLEAR OPERATING CO.

(Vogtle Electric Generating Plant, Units 3 and 4)

)
)
) Docket Nos.
) 52-025-COL & 52-026-COL
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ORDER

(Transmitting Pre-Hearing Questions)

On August 10, 2011, the Commission issued its notice that it would convene an evidentiary hearing at its Rockville, Maryland headquarters on September 27, 2011, pursuant to section 189(a) of the Atomic Energy Act, to receive testimony and exhibits in the uncontested portion of the captioned proceeding.¹ In connection with that hearing, pursuant to my authority under 10 C.F.R. § 2.346(a) and (j), Southern Nuclear Operating Company (Applicant) and the NRC Staff should file written responses to the questions presented in the table, below. Responses should be filed by **September 13, 2011**,

¹ See Notice of Hearing: Southern Nuclear Operating Co., et al.; Combined Licenses for Vogtle Electric Generating Plant, Units 3 and 4, and Limited Work Authorizations, 76 Fed. Reg. 50,767 (Aug. 16, 2011).

PRE-HEARING QUESTIONS²

<u>No.</u>	<u>Category</u>	<u>Reference</u>	<u>Directed To</u>	<u>Question</u>
1	Safety	General	Staff	SECY-11-0110 mentions that “some portions of the VEGP FSER contain information from previously issued safety evaluations for Bellefonte.” Is that statement intended to mean that the Vogtle FSER incorporates in some fashion portions of the incomplete Bellefonte DSER?
2	Safety	General	Staff	Since it appears that TVA may not pursue a combined license for a reactor at the Bellefonte site, why is it appropriate that Vogtle or other applicants have endorsed standard content in an application that may never proceed to licensing?
3	Safety	General	Staff	The ACRS recommended that an effective ISI/IST program be in place to ensure operability of the squib valves in the automatic depressurization system. According to SECY-11-0110, it appears that such a program has not been developed yet. What steps have been taken to ensure that a requirement for this program will be imposed on an applicant or combined license holder?

² Acronyms used in the table: ACRS (Advisory Committee on Reactor Safeguards); COL (Combined License); DAC (Design Acceptance Criteria); DCD (Design Control Document); DSEIS (Draft Supplemental Environmental Impact Statement); DSER (Draft Safety Evaluation Report); EIS (Environmental Impact Statement); ER (Environmental Report); ESP (Early Site Permit); FSEIS (Final Supplemental Environmental Impact Statement); FSER (Final Safety Evaluation Report); ISI/IST (Inservice Inspection/Inservice Testing); ITAAC (Inspection, Test, Analysis, and Acceptance Criterion/Criteria); MC&A (Material Control and Accounting); SECY (Office of the Secretary of the Commission); SER (Safety Evaluation Report); TSC (Technical Support Center); TVA (Tennessee Valley Authority), VEGP (Vogtle Electric Generating Plant); VEGP DEP (DCD Departure Number).

<u>No.</u>	<u>Category</u>	<u>Reference</u>	<u>Directed To</u>	<u>Question</u>
4	Safety	General	Staff	<p>Near-Term Task Force Recommendations</p> <p>a) How much time and effort would it take the Staff to fully implement the Near-Term Task Force recommendations for near-term combined license applications as license conditions for Vogtle? As inspections, tests, analyses and acceptance criteria for Vogtle?</p> <p>b) The Near-Term Task Force recommended that their recommendations be implemented as inspections, tests, analyses and acceptance criteria. Why did the Staff suggest implementation as license conditions in SECY-11-0110?</p> <p>c) Would the NRC Staff face any additional administrative or regulatory hurdles if the implementation of the recommendations were delayed until after the Vogtle combined license has been issued?</p> <p>d) Considering that the Fukushima accident clearly indicates that multiple concurrent events can occur at a multi-reactor site, why is the Staff confident that the finding with regards to “inimical” to health and safety of the public has been met? Did the Staff consider accident scenarios that required a response to concurrent events at multiple-reactors and/or spent fuel storage facilities at the Vogtle site?</p> <p>e) Which parts of the Vogtle draft license and FSER would need to be modified in order to implement all the recommendations of the Near-Term Task Force that are applicable to design certifications or combined licenses?</p>
5	Safety	General	Staff	<p>The Vogtle draft combined license seems to contain a provision that would allow the licensee to make changes to the design prior to receiving NRC approval. Inclusion of such a provision seems contrary to the spirit of the finding that the facility will be constructed in accordance to the combined license. How is the Staff able to make the finding that the facility will be constructed in accordance with the license, if the COL holder can make changes prior to receiving NRC approval?</p>

<u>No.</u>	<u>Category</u>	<u>Reference</u>	<u>Directed To</u>	<u>Question</u>
6	Safety	General	Staff	<p>Pre-Operational Testing License Condition</p> <p>a) Each of the tests listed under heading (a) contains a note that test is to be performed by first plant or first three plants. Will this condition be included in all AP1000 combined licenses until a plant or first three plants have completed the tests?</p> <p>b) If the construction and operation of Vogtle proceed at a pace such that Vogtle is not the first or first of three that conducts the required test, how is the need to conduct or not conduct the tests communicated to the licensees?</p> <p>c) If the results of the tests identified in section (a) of the pre-operational testing license condition are not within an acceptable range, what actions are the first and subsequent "plants" required to perform? Where is that requirement described?</p>
7	Safety	General	Staff	What criteria were used to decide which operational programs to include in the operational program implementation license condition?
8	Safety	General	Staff	Normally, the Atomic Safety and Licensing Board handles both the contested and uncontested hearings for limited work authorizations. Why is the second limited work authorization for the Vogtle site being addressed as part of the combined license mandatory hearing?
9	Safety	General	Staff	Considering that a limited work authorization would permit the Applicant to start safety-related construction in specific areas prior to receipt of a combined license, what benefits, if any, are there to issuing a Vogtle combined license and limited work authorization concurrently?
10	Safety	General	Staff	A number of operating reactors are still having difficulty resolving the long-standing issue of sump blockage. How did the Applicant address downstream effects associated with the Generic Issue 191, "Assessment of Debris Accumulation on PWR Sump Performance"?
11	Safety	General	Staff	Does the Vogtle site fall within the portion of the United States that is being addressed under Generic Issue 199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants?" If so, how did the Applicant address the concerns stated in Generic Issue 199?

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12	Safety	General	Staff	The Bellefonte SER is mentioned multiple times in the Vogtle FSER. Is the Bellefonte SER publicly available, and is the Staff planning to publish the Bellefonte SER as a NUREG? If so, will it be published on a comparable schedule as the Vogtle FSER?
13	Safety	General	Staff	When will the Vogtle combined license holder be required to start making contributions to the decommissioning fund?
14	Safety	General	Staff	Foreign Ownership a) Understanding that none of the individual corporations or entities that will own Vogtle, Units 3 and 4 is owned, controlled, or dominated by a foreign corporation or foreign government, what will be the percent of domestic and foreign ownership? b) With regard to foreign ownership, the FSER contains the assertion that the Staff does not know or have reason to believe the Applicants are controlled, or dominated by a foreign corporation or foreign government, but does not describe how the Staff confirmed this to be true. What actions did the NRC Staff take to confirm that the individual corporations or entities that will own Vogtle, Units 3 and 4 are not owned, controlled, or dominated by a foreign corporation or foreign government? Where are the actions to confirm amount of foreign ownership summarized in the FSER?

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15	Safety	General	Staff	<p>ITAAC</p> <p>a) If inspections, testing, or analyses are not explicitly stated or described in individual ITAACs (including design certification, early site permit, or plant-specific), what publicly available document contain those specifics? For the following ITAACs, please provide references for the applicable documents, including page numbers:</p> <ul style="list-style-type: none"> i) ITAAC 1 concerning backfill material in Table 2.5-1. ii) ITAAC 1 concerning mudmat in Table 3.8-1. iii) ITAAC 6 concerning reactor coolant pumps in Table 8.2A-1. iv) ITAAC 6.3 concerning release of radioactive materials in Table 13.3-1. <p>b) If it is determined after a combined license has been issued that the acceptance criteria for an ITAAC are unclear or are in dispute, what regulatory mechanisms are in place to provide the needed clarity or resolve the dispute?</p> <p>c) If it is determined after a combined license has been issued that the test, inspection, or analysis used to demonstrate acceptability of the acceptance criteria was not adequate, what regulatory mechanisms are in place to provide the needed clarity or resolve the dispute?</p>
16	Safety	General	Staff	How many ITAACs does the Staff estimate will be standard ITAACs for other AP1000 COLs? Please identify those ITAACs.
17	Safety	General	Staff	Please provide a summary of COL items that are expected to be referenced in future COLs and those that will be strictly site-specific.
18	Safety	General	Staff & Applicant	What process was used to determine which technical areas involved interfaces between the COL and matters addressed by the design certification that would have otherwise been excluded from consideration in the COL review?
19	Safety	General	Staff	Did any of the technical areas of interface discussed in Question 18, above, involve matters related to recent updates to the application for a certified design for the AP1000? If so, how did the Staff ensure that the COL review encompassed the most current information regarding the design certification?

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20	Safety	General	Staff	What was the threshold or metric used by the Staff to determine if the changes were significant enough to warrant further interaction with the ACRS? Was ACRS notified of the changes?
21	Safety	General	Staff	The Fukushima Task Force report contains three specific recommendations for near-term COL applications associated with confirming station blackout and spent fuel pool capabilities, enhancing onsite emergency response capability, and enhancing emergency planning to address prolonged station blackout and multi-unit accidents. The Commission could choose to adopt some or all of these recommendations and implement them in the COLs through license conditions prior to issuance of the COLs or the Commission could issue the COLs and later modify, add, or delete any terms or conditions of the COLs to reflect any new Commission requirements in accordance with existing regulatory provisions. In the latter case, implementation of any Commission decisions on the Task Force recommendations generally would be comparable for both the near-term COLs and for operating reactors. Are both of these alternatives equal in regulatory viability or is one preferable over the other?
22	Safety	General	Staff	In its review of the AP1000 design, the ACRS noted that the automatic depressurization system ADS-4 squib valves must operate to achieve passive long-term cooling after a loss-of-coolant accident. The valves, actuated by an explosive charge, are one-time-use valves until the internals are replaced. According to the ACRS, the development of an effective ISI/IST program to ensure the operability of the valves is needed. The ACRS suggested that periodic removal and firing of the explosive charge that initiates operation of the valve may not be sufficient for ensuring the operability of these critical components. The ACRS recommended that the NRC establish a regulatory requirement focused on the development of an ISI/IST program, including a review of the lessons learned from the valve design and qualification process. How are these valves to be proven operable prior to being placed in service?

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23	Safety	General	Staff	What specifically were the differences between the final DCD (Rev. 19) and that which the ACRS reviewed? How did the Staff determine that there were no significant deviations between those versions such that an ACRS re-review was not necessary?
24	Safety	General	Applicant	Describe the plant's ability to deal with a station blackout event.
25	Safety	FSER (General) Draft COL	Staff	a) Please provide a summary of how the DAC from the certified design were addressed in the context of the COL. b) How does the Staff expect that follow-on COLs will treat these DAC, particularly in comparison with the Vogtle COL?
26	Safety	FSER Sec. 1.5.1	a) Staff b) Applicant c) Staff d) Staff	a) Were Requests for Additional Information issued on the topic of financial qualifications? If so, please provide references. b) The Staff's financial assessment was based on the construction period beginning in November 2011 and ending with Unit 3 operation in April 2016 and Unit 4 operation in April 2017. Do the current projected operation dates differ, and could this impact the Staff's analysis? c) The FSER at p.1-40 (regarding financial qualifications) states that the Staff considers studies from independent sources and collects projected construction costs from COL applicants for comparison and reasonableness. What independent sources did the Staff consider and how were they used? d) Please describe the further steps necessary to ensure compliance with the decommissioning funding mechanism requirements (see FSER at p. 1-48).
27	Safety	FSER Sec. 1.5.4	Staff	Please explain the methodology for evaluating the exemption regarding the material control and accounting program. Is this a standard issue that has been or will be raised in other COL applications?
28	Safety	FSER Sec. 1.5.4 FSER App. A SECY-11-110 p. 20	Staff	SECY-11-0110 describes ensuring "the presence of appropriate controls on sources and materials during construction" and notes that license conditions were established to address this concern. What are those controls and how were they determined? Which license conditions address this concern?

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29	Safety	FSER Sec. 13.3.4 FSER App. A SECY-11-110 p. 15	Staff	SECY-11-0110 states that, regarding the emergency response facility locations, an ITAAC for a full participation emergency response exercise was established to demonstrate adequacy of TSC location. Please describe this ITAAC.
30	Safety	FSER Sec. 13.8.4.24	Staff	Regarding the Applicant's cyber-security plan, what areas, if any, does the Staff consider to be the most significant deviations from Regulatory Guide 5.71, and why?
31	Safety	FSER Sec. 19A SECY-11-110 p. 18	Staff & Applicant	Since this is the first COL review regarding loss of large areas of the plant due to explosions or fire, please describe how the Applicant's approach was similar to that used by operating reactors under 10 C.F.R. Part 50. Where program details in the Mitigating Strategies document could not be finalized and implemented until the construction phase, the Applicant identified commitments for future action prior to fuel load. Please describe these commitments.
32	Safety	SECY-11-0110 Discussion Section II, p. 13	Staff	The first full paragraph discusses the exemption from MC&A requirements in 10 C.F.R. Parts 70 and 74 to this application, which is under Part 52. Can this exemption be addressed generically for future applications, and, if so, does the Staff plan to do so and how would the Staff go about this?
33	Safety	SECY-11-0110 VEGP DEP 2.5-1 p. 13	Staff	This departure accepts a nominal 6 inch thickness for the mudmat, while the AP1000 DCD specifies a 6 inch minimum thickness. What is the difference between nominal and minimum in this case?
34	Safety	SECY-11-0110 Section IV p. 25	Staff	The first sentence of the first full paragraph on this page states that, in "some cases, the Staff's reasonable assurance finding required the imposition of license conditions or ITAAC as part of the licenses." Please identify three to five representative examples of ITAACs and license conditions imposed by the Staff, including a summary of the rationale for their imposition.

<u>No.</u>	<u>Category</u>	<u>Reference</u>	<u>Directed To</u>	<u>Question</u>
35	Environmental	General – identifying and evaluating new and significant information	a) Staff b) Staff c) Applicant	a) Is there a review plan or other guidance document to help the Staff determine whether information is new or significant? If so, please identify. b) Please describe the site audit conducted by Staff to review environmental information, potentially new and significant information, etc. Is that akin to any other routine Staff site audit? c) Describe the Applicant's methodology for identifying and evaluating potentially new and significant information.
36	Environmental	General	Staff & Applicant	What process was used to determine whether there was new and significant information subsequent to the issuance of the EIS for the ESP that should be included in the ER for the COL application or in the SEIS?
37	Environmental	General	Staff	How will the Staff and Applicant account for revisions to the plant layout that occur between issuance of the license and construction of the plant that may impact the Staff's original environmental or safety analyses? For example, the transmission line route has not yet been determined. How will the Staff ensure that environmental impacts are fully addressed?
38	Environmental	SECY-11-0110 Discussion Section III.c. p.21	Staff	The final sentence in the last full paragraph on this page states that, in performing its environmental review, the Staff found new information that warranted further analysis but determined that it was not significant within the meaning of 10 C.F.R. § 51.92. Please elaborate on the criteria for determining significance in this context.
39	Environmental	FSEIS Chapter 9	Staff	Please describe any new information regarding alternatives since the identification of those that were examined during the ESP review.
40	Environmental	FSEIS Sec. 11.6	Staff	The FSEIS states that the cost-benefit assessment is the same for the COL as it was for the ESP, with mitigation measures. Please describe those mitigation measures.
41	Environmental	FSEIS App. E	Staff	Please highlight major themes from the comments on the DSEIS, and generally describe the Staff's responses to those comments.

IT IS SO ORDERED.

For the Commission

[NRC Seal]

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 31st day of August, 2011.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
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SOUTHERN NUCLEAR OPERATING COMPANY)	Docket Nos. 52-025-COL and
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(Vogtle))	
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(Mandatory Hearing))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing ORDER (Transmitting Pre-Hearing Questions) have been served upon the following persons by Electronic Information Exchange and by electronic mail as indicated by an asterisk*.

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Vogtle, Docket Nos. 52-025-COL and 52-026-COL (Mandatory Hearing)
ORDER (Transmitting Pre-Hearing Questions)

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[Original signed by R. Giitter]
Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 31st day of August 2011.