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JUL - 9 2010

Docket Nos.: 52-025  
52-026

ND-10-1305

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555-0001

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Units 3 and 4 Combined License Application  
Response to Bellefonte Safety Evaluation Report Open Items for Chapter 01

Ladies and Gentlemen:

By letter dated March 28, 2008, Southern Nuclear Operating Company (SNC) submitted an application for combined licenses (COLs) for proposed Vogtle Electric Generating Plant (VEGP) Units 3 and 4 to the U.S. Nuclear Regulatory Commission (NRC) for two Westinghouse AP1000 reactor plants, in accordance with 10 CFR Part 52. As a result of the NRC's detailed review of the Reference COL application (R-COLA), the NRC has written a safety evaluation report (SER) with open items for the chapter identified in the above subject line. The open items identified in the SER for the R-COLA are addressed by the enclosure to this letter. For completeness, each open item is identified but responses are provided only for the items impacting standard information or otherwise resulting in standard changes for the AP1000 COL applications. The open items identified as plant specific will be addressed on the Bellefonte docket by the Tennessee Valley Authority.

If you have any questions regarding this letter, please contact Mr. Wes Sparkman at (205) 992-5061 or Ms. Amy Aughtman at (205) 992-5805.

DD92  
NRD

Mr. B. L. Ivey states he is a Vice President of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



B. L. Ivey

Sworn to and subscribed before me this 9<sup>th</sup> day of July, 2010

Notary Public: Nancy Louise Henderson

My commission expires: March 23, 2014

BLI/AGA

Enclosure: Supplemental Response to R-COLA SER with Open Items, Chapter 01

cc: Southern Nuclear Operating Company

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Document Services RTYPE: AR01.1053  
File AR.01.02.06

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**Southern Nuclear Operating Company**

**ND-10-1305**

**Enclosure**

**Supplemental Response to R-COLA SER with Open Items**

**Chapter 01**

<u>Open Item</u>	<u>Response</u>
01-01	Standard – July 29, 2009
01-02	Standard – July 29, 2009
01.04-01	Plant-Specific – Bellefonte (not included)
01.04-02	Standard – Sept. 21, 2009
01.04-03	Standard – July 29, 2009
01.04-04	Standard – July 29, 2009
01.05-01	Standard – Supplement enclosed

**eRAI Tracking No. 2566**

**NuStart Qb Tracking No. 3910**

**NRC SER OI Number 01.05-01:**

In TVA's letter transmitting Revision 1 of the COL application, dated October 30, 2007, and in Part 1, "General and Financial Information," of the application TVA requested material licenses for receipt, possession and use of source, byproduct and special nuclear material in accordance with Commission regulations in 10 CFR Parts 30, 40, and 70. The reviews conducted to support the issuance of the COL encompass those necessary to support granting 10 CFR Parts 30, 40, and 70 licenses. The standard license that the staff intends to issue is based on operating licenses for nuclear power plants licensed in accordance with 10 CFR Part 50. The staff is considering the following standard license provisions for the Bellefonte combined license as it relates to authorization pursuant to regulations in Parts 30, 40, and 70:

"Subject to the conditions and requirements incorporated herein, the Commission hereby licenses TVA:

- (1) (i) pursuant to the Act and 10 CFR Part 70, to receive and possess at any time, special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, described in the final safety analysis report (FSAR), as supplemented and amended;  
(ii) pursuant to the Act and 10 CFR Part 70, to use special nuclear material as reactor fuel, after the finding in Section 2.D(1) of this license has been made (note: 2D(1) is a reference to the 10 CFR 52.103(g) finding), in accordance with the limitations for storage and amounts required for reactor operation, and described in the FSAR, as supplemented and amended;
- (2) pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, at any time, any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (3) pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required, any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (4) pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility."

The staff notes that FSAR Table 13.4-201 of the BLN 3 and 4 COL application provides milestones for various operational programs to be implemented. Important milestone dates for various operational programs that support issuance of the license and requirements relative to 10 CFR Parts 30, 40, and 70 include the following:

- Radiation Protection Program (including ALARA principles) – prior to initial receipt of byproduct, source, or special nuclear materials (excluding exempt quantities as described in 10 CFR 30.18)
- Fire Protection Program – prior to receipt of fuel onsite
- Security Program including physical security, safeguards contingency programs, training and qualification program – prior to receipt of fuel onsite

These implementation milestones are discussed in Section 13.4 of this SER.

In addition to the evaluation of the implementation milestones noted above, the staff's evaluation of the radiation protection program that supports the issuance of the 10 CFR Parts 30, 40, and 70 licenses is addressed in Chapter 12 of this SER. Additional staff evaluations that support the issuance of the 10 CFR Part 70 license are addressed in Chapter 9 of the SER (i.e., new fuel storage, spent fuel storage, and fire protection programs) and in the staff's evaluation of TVA's security program. The staff finds that the information in the Bellefonte COL application to support granting of the 10 CFR Part 70 license mentioned as part of the license above is sufficient, pending resolution of the open items in the SER related to new and spent fuel, fire protection program, security program, and the implementation of the fire protection and security programs. However, TVA needs to provide a discussion of which parts of its COL application other than the reference to the radiation protection program provide sufficient information to support compliance with the applicable portions of 10 CFR Part 30 and 40, prior to the 10 CFR 52.103(g) finding. This is Open Item 1.5-1.

During June 2010, the NRC identified the following additional information needs during the SCEG Summer review. However, these concerns were determined to be related to STANDARD information.

- A. Relative to Item 14, "Emergency Planning," in FSAR Table 13.4-201:
  - (1) Discuss the reference to "(portions applicable to SNM)" with respect to regulatory citations 10 CFR 30.32 and 40.31, which address byproduct and source material.
  - (2) Discuss why special nuclear material is included in the "Milestone" column without any reference to 10 CFR Part 70.
  - (3) Discuss the references in the "Requirements" column to only 10 CFR 30.32(a) and 10 CFR 40.31(a) when the "Milestone" column addresses special nuclear material.
  - (4) Discuss why 10 CFR 30.32(a) and 10 CFR 40.31(a) were used in the "Requirements" column rather than the specific regulatory references related to emergency planning (10 CFR 30.32(i)(1)(i) and (ii); 10 CFR 40.31(j)(1)(i) and (ii)).
- B. Regarding Section 3, "Operational Program Implementation," in Part 10, "Proposed License Conditions (Including ITAAC)," of the COL Application:
  - (1) Section C.4, "Emergency Planning," states that "applicable portions" of emergency planning will be in place prior to the initial receipt of byproduct, source, or special nuclear materials. Discuss the meaning of "applicable portions."
  - (2) Discuss the omission of emergency planning in Section D, "Fuel Receipt," or explain how an event involving special nuclear material at Units 2 and 3 will be handled, if new fuel is received prior to the implementation of emergency planning program.
  - (3) Discuss why special nuclear material is included in Section C, when Section D addresses the receipt of fuel.

**SNC Response:**

FSAR Chapter 11, Radioactive Waste Management, Chapter 12, Radiation Protection, and Chapter 13, Conduct of Operations, provide sufficient information to support compliance with the applicable portions of 10 CFR Parts 30 and 40. The application information in these Parts requests information related to material and its purposes, radiation safety personnel, personnel

training, facilities and equipment, waste management, and the radiation safety program in general.

Specifically:

- Information related to radiation sources containing byproduct, source, and special nuclear material, including their purposes, storage, and security of the sources, is provided in FSAR Section 12.2. This section also addresses procedures specifically related to such sources.
- Information related to the organizational structure of the applicant, including those responsible for source, byproduct and special nuclear material radiation safety, is provided in FSAR Section 13.1.
- Information related to training of personnel, including those responsible for source, byproduct and special nuclear material radiation safety, is provided in FSAR Section 13.2.
- Information related to facilities and equipment, is provided in FSAR Section 12.5.
- Information related to the radiation safety program, is provided in FSAR Sections 11.5, 12.1, 12.3 and 12.5.
- Information related to the fire protection program, is provided in FSAR Section 9.5.1.
- Information related to the relevant waste management processes, is provided in FSAR Section 11.4.
- Information related to plant procedures, including those used to control source, byproduct and special nuclear material, is provided in FSAR Section 13.5.
- Information related to security, including safeguards of source, byproduct and special nuclear material, is provided in FSAR Section 13.6.
- Information related to source, byproduct and special nuclear material program milestones is provided in FSAR Section 13.4 (as modified by BLN-RAI-LTR-109 Supp and as shown below in the Applications Revisions section).

**Supplemental Response:**

A. Relative to Item 14, "Emergency Planning," in FSAR Table 13.4-201:

- (1) The "(portions applicable to SNM)" will be revised to a more general reference of "(portions applicable to radioactive materials)" for item 14 and also for item 8, Fire Protection Program, item 11, Non-Licensed Plant Staff Training Program, and item 15, Physical Security Program. Additionally, the references to the regulatory citations of 10 CFR 30.32 and 40.31, which address byproduct and source material, will be revised to be more specific to Emergency Planning requirements, and will also be revised to include a reference to 10 CFR 70.22 as shown in the COLA Revisions section below. Specifically, the "Program Source" references will become 10 CFR 30.32(i)(3), 10 CFR 40.31(j)(3), and 10 CFR 70.22(i)(3), and the "Implementation Requirement" references will become 10 CFR 30.32(i)(1), 10 CFR 40.31(j)(1), and 10 CFR 70.22(i)(1). These latter references are specific to "possession" of byproduct, source, and special nuclear material, respectively, and thus are considered to be the explicit implementation requirements for possession by the licensee at the licensee site.

With regard to specifics for the "portions (of the emergency plan) applicable to [radioactive] materials," there are requirements in 10 CFR 30.32(i)(1)(ii) and



30.32(i)(3), 10 CFR 40.31(j)(1)(ii) and 40.31(j)(3), and 10 CFR 70.22(i)(1)(ii) and 70.22(i)(3) that specify the purpose and necessary contents of emergency plans submitted with an application for byproduct, source, and special nuclear material, respectively. Thus, those portions of the emergency plan that fit the criteria within the pertinent regulations are the "portions (of the emergency plan) applicable to [radioactive] materials."

Specifically, 10 CFR 30.32(i)(1)(ii) requires "An emergency plan for responding to a release of radioactive material." Thus, those portions of the emergency plan which would be necessary to respond to a release of radioactive byproduct material would be required for possession of byproduct material by the licensee at the licensee site. Similarly, 10 CFR 40.31(j)(1)(ii) requires "An emergency plan for responding to the radiological hazards of an accidental release of source material and to any associated chemical hazards directly incident thereto." Thus, those portions of the emergency plan which would be necessary to respond to a release of source material and any associated chemical hazards would be required for possession of source material by the licensee at the licensee site. Finally, 10 CFR 70.22(i)(1)(ii) requires "An emergency plan for responding to the radiological hazards of an accidental release of special nuclear material and to any associated chemical hazards directly incident thereto.." Thus, those portions of the emergency plan which would be necessary to respond to a release of special nuclear material and any associated chemical hazards would be required for possession of special nuclear material by the licensee at the licensee site. As indicated above the contents of the emergency plan for the licensed unit(s) would be those portions necessary to comply with 10 CFR 30.32(i)(3), 10 CFR 40.31(j)(3), and 10 CFR 70.22(i)(3).

Items 8, 11, and 15 will retain their existing Part 30 and Part 40 references, and each will have an appropriate Part 70 (or Part 73) reference added to address special nuclear materials. Note that Part 70 does not specifically address security for special nuclear materials since it had already been specifically addressed in Part 73. As such, a Part 73 reference is provided for security for the special nuclear materials.

- (2) As indicated in (1) above, an appropriate reference to 10 CFR Part 70 will be included for item 14.
  - (3) As indicated in (1) above, an appropriate reference to 10 CFR Part 70 will be included for item 14.
  - (4) As indicated in (1) above, the "Requirements" column will be revised for item 14 to reference 10 CFR 30.32(i)(1), 10 CFR 40.31(j)(1), and 10 CFR 70.22(i)(1).
- B. Regarding Section 3, "Operational Program Implementation," in Part 10, "Proposed License Conditions (Including ITAAC)," of the COL Application:
- (1) See A(1) above for discussion of the meaning of "applicable portions." The above discussion and the associated revisions to FSAR Table 13.4-201 identified above provide the clarity of the meaning of "applicable portions."

- (2) Section D, "Fuel Receipt" will be revised to include implementation of the portions of the emergency planning program applicable to special nuclear material.
- (3) Special nuclear material will be retained in Section C. While Section D addresses the receipt of fuel (or special nuclear material), Section C would be applicable if the licensee were to take possession of any special nuclear material other than fuel. If the only special nuclear material is fuel, then C and D are essentially duplicate requirements.

This response is expected to be STANDARD for the S-COLAs.

**Associated VEGP COL Application Revisions:**

Revisions related to the July 2009 response were incorporated into Revision 2 of the FSAR. The revisions identified below will be incorporated into a future revision of the COLA.

1. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 8, Fire Protection Program, Program Title column, will be revised from:  
(portions applicable to SNM)  
To read:  
(portions applicable to radioactive material)
2. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 8, Fire Protection Program, will be revised to add the following reference under the "Program Source" column.  
10 CFR 70.22
3. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 8, Fire Protection Program, will be revised to add the following reference under the "Implementation Requirement" column.  
10 CFR 70.22(a)
4. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 11, Non-Licensed Plant Staff Training Program, will be revised from:  
(portions applicable to SNM)  
To read:  
(portions applicable to radioactive material)
5. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 11, Non-Licensed Plant Staff Training Program, will be revised to add the following reference under the "Program Source" column.  
10 CFR 70.22

6. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 11, Non-Licensed Plant Staff Training Program, will be revised to add the following reference under the "Implementation Requirement" column:  
10 CFR 70.22(a)
7. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 14, Emergency Planning, Program Title column, will be revised from:  
(portions applicable to SNM)  
To read:  
(portions applicable to radioactive material)
8. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 14, Emergency Planning, Program Source column, will be revised from:  
10 CFR 30.32  
10 CFR 40.31  
To read:  
10 CFR 30.32(i)(3)  
10 CFR 40.31(j)(3)  
10 CFR 70.22(i)(3)
9. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 14, Emergency Planning, Implementation - Requirement column, will be revised from:  
10 CFR 30.32(a)  
10 CFR 40.31(a)  
To read:  
10 CFR 30.32(i)(1)  
10 CFR 40.31(j)(1)  
10 CFR 70.22(i)(1)
10. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 15, Physical Security Program, Program Title column, will be revised from:  
(portions applicable to SNM)  
To read:  
(portions applicable to radioactive material)
11. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 15, Physical Security Program, will be revised to add the following reference under the "Program Source" column.  
10 CFR 73.1
12. COLA Part 2, FSAR Chapter 13, Section 13.4, Table 13.4-201, item 15, Physical Security Program, will be revised to add the following reference under the "Implementation Requirement" column.  
10 CFR 73.1(a)

13. COLA Part 10, Proposed License Condition 3, "Operational Program Implementation," will be revised to add the following new milestone (where the # is replaced with the next appropriate number):

D.# – Emergency Planning (applicable portions)