

## PMVogtleCOLPEm Resource

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**From:** Christian Araguas  
**Sent:** Wednesday, February 25, 2009 7:20 PM  
**To:** wasparkm@southernco.com; AGAUGHTM@SOUTHERNCO.COM  
**Cc:** PMVogtleCOLPEm Resource; Mark Tonacci; John-Chau Nguyen  
**Subject:** RAI Letter No. 028 Related SRP Section 2.4.2 for Vogtle Units 3 and 4  
**Attachments:** VOG-RAI-LTR-028.pdf

Wes/Amy,

Attached is RAI Letter No. 028 related SRP Section 2.4.2 for Vogtle Units 3 and 4. The ADAMS accession number is ML090560817.

Christian Araguas  
Lead Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

**Hearing Identifier:** Vogtle\_COL\_Public  
**Email Number:** 38

**Mail Envelope Properties** (CB87FC66F95637428C5E0D066E756B6FABAE15FCB5)

**Subject:** RAI Letter No. 028 Related SRP Section 2.4.2 for Vogtle Units 3 and 4  
**Sent Date:** 2/25/2009 7:20:01 PM  
**Received Date:** 2/25/2009 7:20:13 PM  
**From:** Christian Araguas

**Created By:** Christian.Araguas@nrc.gov

**Recipients:**

"PMVogtleCOLPEm Resource" <PMVogtleCOLPEm.Resource@nrc.gov>

Tracking Status: None

"Mark Tonacci" <Mark.Tonacci@nrc.gov>

Tracking Status: None

"John-Chau Nguyen" <John-Chau.Nguyen@nrc.gov>

Tracking Status: None

"wasparkm@southernco.com" <wasparkm@southernco.com>

Tracking Status: None

"AGAUGHTM@SOUTHERNCO.COM" <AGAUGHTM@SOUTHERNCO.COM>

Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	296	2/25/2009 7:20:13 PM
VOG-RAI-LTR-028.pdf	143402	

**Options**

**Priority:** Standard

**Return Notification:** No

**Reply Requested:** No

**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

## VoglecolRAIsPEm Resource

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**From:** Christian Araguas  
**Sent:** Wednesday, February 25, 2009 6:48 PM  
**To:** VoglecolRAIsPEm Resource  
**Cc:** John-Chau Nguyen  
**Subject:** Request for Additional Information Letter No. 028 Related to SRP Section 02.04.02 for the Vogtle 3 and 4 Combined License Application  
**Attachments:** VOG-RAI-LTR-028.doc

Christian Araguas  
Lead Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

**Hearing Identifier:** Vogtle\_COL\_eRAIs  
**Email Number:** 31

**Mail Envelope Properties** (CB87FC66F95637428C5E0D066E756B6F99385F76E5)

**Subject:** Request for Additional Information Letter No. 028 Related to SRP Section 02.04.02 for the Vogtle 3 and 4 Combined License Application  
**Sent Date:** 2/25/2009 6:48:27 PM  
**Received Date:** 2/25/2009 6:48:29 PM  
**From:** Christian Araguas

**Created By:** Christian.Araguas@nrc.gov

**Recipients:**

"John-Chau Nguyen" <John-Chau.Nguyen@nrc.gov>

Tracking Status: None

"VogtlecolRAIsPEm Resource" <VogtlecolRAIsPEm.Resource@nrc.gov>

Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	144	2/25/2009 6:48:29 PM
VOG-RAI-LTR-028.doc	54778	

**Options**

**Priority:** Standard

**Return Notification:** No

**Reply Requested:** No

**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

February 25, 2009

Mr. Joseph A. (Buzz) Miller  
Senior Vice President  
Southern Nuclear Operating Company  
P.O. Box 1295  
Birmingham, AL 35201

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 028 RELATED TO  
SRP SECTION 02.04.02 FOR THE VOGTLE ELECTRIC GENERATING PLANT  
UNITS 3 AND 4 COMBINED LICENSE APPLICATION

Dear Mr. Miller:

By letter dated March 28, 2008, Southern Nuclear Operating Company (SNC), submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advance passive pressurized water reactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me for the Vogtle Electric Generating Plant combined license at 301-415-3637.

Sincerely,

**/RA/**

Christian Araguas  
Lead Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-025  
52-026

Enclosure:  
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me for the Vogtle Electric Generating Plant combined license at 301-415-3637.

Sincerely,

/RA/

Christian Araguas  
Lead Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-025  
52-026  
eRAI Tracking No. 2057

Enclosure:  
Request for Additional Information

Distribution:

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NRO-028

OFFICE	RSAC/BC	NWE1/PM	OGC	NWE1/L-PM
NAME	RRaione*	CAraguas*	AHodgdon*	CAraguas*
DATE	2/02/09	2/06/09	2/06/09	2/25/09

\*Approval captured electronically in the electronic RAI system.

**OFFICIAL RECORD COPY**

**Request for Additional Information No. 2057 Revision 0**  
**2/25/2009**  
**Vogle**  
**Southern Nuclear Operating Co.**  
**Docket No. 52-0025 and 52-0026**  
**SRP Section: 02.04.02 - Floods**  
**Application Section: COLA FSAR Section 2.4.2**

**QUESTIONS for Hydrologic Engineering Branch (RHEB)**

**02.04.02-1**

Staff reviewed the local intense precipitation flood event as described in FSAR Section 2.4.2. In accordance with requirements based on 10 CFR 100.20(c) and 10 CRF 52.79(a), staff requests additional information concerning the drainage basins and ditches in the vicinity of Vogle Units 3 and 4.

Specifically, staff's assessment of the HEC-RAS input files provided by the applicant noted the following: 1) three of the drainage ditches shown in drainage maps referenced in the FSAR are not included in the local flooding analysis, 2) a comparison with HEC-RAS input files provided by the applicant includes a culvert but this feature is not included in Figure 2.4.2.4-102 (FSAR Figure 2.4-201), 3) a map referencing the HEC RAS cross section was not provided, and 4) the feature that appears to cover feeder ditches 2 and 3 at their downstream ends in Figure 2.4.2.4-102 is unclear as to the type of feature or its impact on the drainage system.

The applicant should provide: 1) additional information or clarification regarding the deletion of certain channels from the analysis, 2) clarification regarding the inconsistency of the HEC-RAS model and the figure regarding the culvert, 3) a figure showing the locations of the cross-sections used in developing the HEC-RAS model inputs, and 4) additional information concerning the feature that appears to cover the feeder ditches 2 and 3 at the downstream ends.

**02.04.02-2**

Staff reviewed the local intense precipitation flood event as described in FSAR Section 2.4.2. In accordance with requirements based on 10 CFR 100.20(c) and 10 CRF 52.79(a), staff requests additional information concerning the drainage associated with local intense precipitation at Vogle Units 3 and 4.

In FSAR Section 2.4.2.3, the applicant states that adjustments to conveyance were made as necessary to eliminate flooding. However, no information was provided regarding the specific changes that were made. Staff's analysis must account for any adjustment to cross-sections, roughness or other conveyance parameter in the final design plan.

The applicant should provide more information about what modifications were made to improve conveyance.

**02.04.02-3**

Staff reviewed the local intense precipitation flood event as described in FSAR Section 2.4.2. In accordance with requirements based on 10 CFR 100.20(c) and 10 CFR 52.79(a), staff requests additional information concerning the drainage basins and ditches in the vicinity of Vogle Units 3 and 4.



In its review of the applicant's HEC-RAS model, the NRC staff found that the cross-sections for the feeder ditches had top widths of approximately 1000 feet with an overall channel length of about 1200 feet and the topography is relatively flat. Consequently, it is difficult to determine what features constrain the flow into channels and whether the 1-dimensional analysis is appropriate. Additionally, the overbank area constitutes much of the cross-sectional area during peak flow and affects the conveyance properties and water surface elevation.

The applicant should justify the use of a 1-dimensional assumption for the hydraulic analysis. Also, the applicant should provide additional hydraulic information/calculation concerning the conveyance properties of the overbanks and channels.