

Attachment 1 -- CONFIDENTIAL
Filed under a Protective Order
Not included in Public filing

Attachment 2
Affidavit of Dr Sydney Bacchus on RAI 108

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of) April 9, 2012
Progress Energy Florida, Inc.) Docket Nos. 52-029-COL
Levy Nuclear Plant, Units 1 and 2) 52-029-COL

AFFIDAVIT OF SYDNEY T. BACCHUS
IN SUPPORT OF JOINT INTERVENORS'
SUPPLEMENTAL MOTION FOR EXTENSION OF TIME
AND REQUEST FOR COMPLETION OF RAI SEISMIC STUDY PRIOR TO HEARING

Under penalty of perjury, I, Sydney T. Bacchus, Ph. D., declare as follows:

1. **Name and address** - My name is Sydney Bacchus. My business address is P. O. Box 174, Athens, Georgia 30603.

2. **Joint intervenors' expert on environmental impacts** - I am a Hydroecologist. In 2009, after reviewing initial documents prepared and/or submitted by Progress Energy Florida, Inc. (PEF), I was retained as the Ecology Party of Florida's expert for the above-referenced proposed project regarding myriad large and irreversible adverse environmental impacts that would occur if the proposed Levy Nuclear Plant Units 1 and 2 ("LNP") was constructed and additional large and irreversible adverse environmental impacts if operation of the proposed LNP occurred.

3. **New seismic analysis is inside scope of Contention 4A.** - A letter dated March 15, 2012 was sent by NRC staff to Progress Energy Florida ("PEF") requesting additional information ("RAI") to support the licensing process. The letter, number 108 directs PEF to:
Evaluate the seismic hazards at your site against current NRC requirements and guidance, and, if necessary, update the design basis and structures systems and components important to safety to protect against the updated hazards (seismic portion only - of detailed Recommendation 2.1 - Enclosure 7 of SECY-12-0025).

This seismic analysis will have a significant bearing on Contention 4A ("C4A") because seismic issues combined with the underlying regional karst aquifer system are the basis for modifications to the enormous excavation and massive impermeable structures planned for LNP 1 & 2.

Construction of the proposed LNP includes the roller compacted concrete structure below each nuclear island, essentially creating "artificial bed rock" for the nuclear reactors. A November 15, 2011 staff teleconference with PEF on SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation, Application Section: 19.59 QUESTIONS for PRA and Severe Accidents Branch (SPRA) 19-75 made it perfectly clear that the function of the roller compacted concrete primarily was of concern in the event of a seismic event impacting the karst aquifer system, resulting in liquefaction. The concern of C4A is not liquefaction, but the impact of constructing the roller compacted concrete mats - one for each nuclear island, plus a "test mat" - for a total of three.

4. **Karst connections** - There can be no debate over why issues impacting karst and karstic connections influence C4A. Intervenor specifically addressed the underlying regional karst aquifer system at the proposed LNP site and described LARGE adverse environmental impacts that would result from construction of the proposed LNP at that karst site. In fact, the Draft Environmental Impact Statement fails to correctly identify problems with the underlying geology of the Levy area. This failure to address the karst formation and potential adverse environmental impacts related to the presence of sinkholes, relict sinkholes underlying the depressional cypress wetlands throughout and surrounding the proposed LNP site and fractures in the affected area of the proposed LNP will lead to misidentification of dewatering and aquifer flow issues. See the map of some of the recognized sinkholes in the affected area of the proposed LNP, incorporated herein as Bacchus Attachment 1.

5. **Dewatering and altered natural hydroperiod** – Construction of the proposed LNP includes multiple significant excavations and the dimensions and nature of those excavations may, in fact probably will, change in response to the referenced RAI. One of the most significant issues of the Intervenor's contention ("C4A") is the dewatering and alteration of the natural hydroperiod from construction of the proposed LNP at the proposed site. See Intervenor's contention.

6. **Potential new understanding of seismic issues may change design of seismic-related structures** such as the bridge mats below the nuclear islands. Since RAI 108 specifically directs PEF to do the seismic study and also consider if an "update" is "necessary" and to report any updates to structures, it is reasonable to wait and see if there are changes that would impact the issues raised here, and in previous filings on C4A.

7. **Significant change of LNP structures can result in significant LARGE adverse environment impacts** – In my professional opinion, significant changes in proposed LNP structures at the proposed LNP site can result in significant LARGE adverse environment impacts

8. **NEPA considerations** – In my professional opinion, if the Intervenor is forced to proceed with the hearing before the Board on the proposed LNP they will not have access to the essential information ensured by the National Environmental Policy Act (NEPA).

9. **Relevance of the seismic study to Contention 4A** – The seismic study may yield information clarifying the characteristics and condition of the karst features at the proposed LNP site. Any new information regarding the karst features could clarify the connection(s) of the proposed site to the underlying Florida aquifer stem, as well as connections to water bodies referenced in C4A.

10. **A complete record** – It is my expert opinion that a complete record requires that the seismic study be part of the evidentiary hearing of C4A because this issue constitutes a substantial and significant component of my testimony as an expert witness for the Intervenor.

11. **Declaration** - I declare under penalty of perjury that the statements above are true and correct, to the best of my knowledge, and that the expressions of opinion stated above are based on my best professional judgment.

Sydney T. Bacchus

Executed in Accordance with 10 CFR § 2.304(d)

Sydney T. Bacchus, Ph. D.

Hydroecologist

Applied Environmental Services, LLC

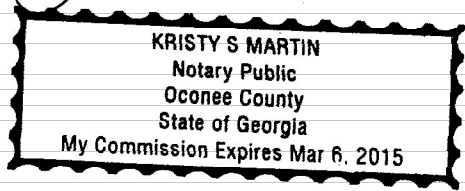
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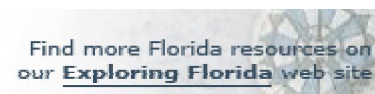
Athens, GA 30603

appliedenvirserve@gmail.com

SWORN TO AND SUBSCRIBED before me this 9th day of April 2012, by the
affiant, SYDNEY T. BACCHUS, who is personally known to me or who has produced
GADL as identification.

Kristy S. Martin
NOTARY PUBLIC, State of Georgia
My commission expires: Mar. 6 2015
Commission No.:

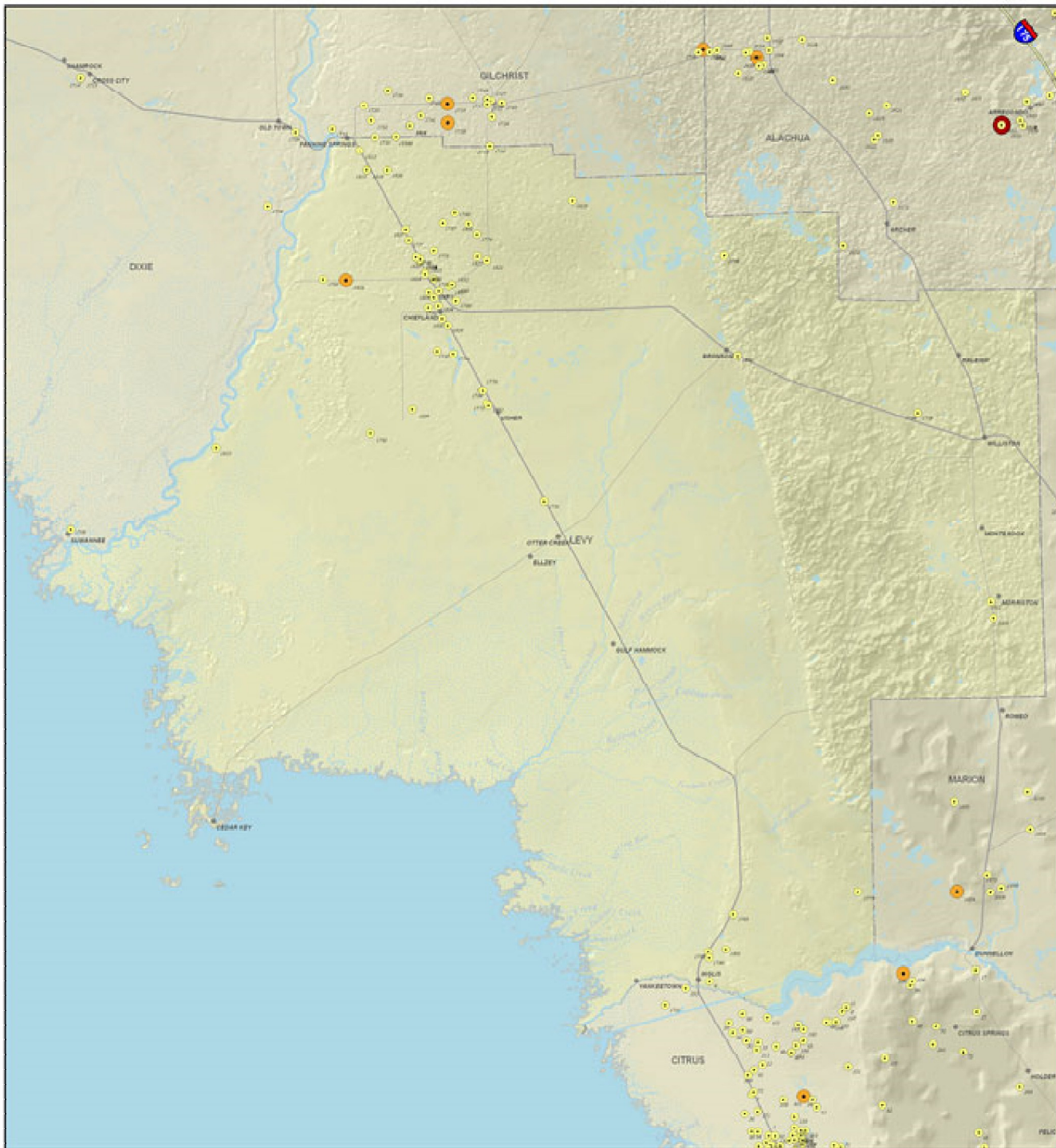




[FL Maps](#) > [County](#) > [Levy](#) > Sinkholes of Levy County, Florida , 2008

[Site Map](#)

Sinkholes of Levy County, Florida , 2008



Legend

Sinkholes with less than 10	Lake
11 - 30	Swamp or Marsh
31 - 80	Rivers/Streams
81 - 200	County Boundaries
>200	US Interstate Hwy
	Roads
	Cities, Towns

Levy County Sinkholes

Produced in 2008 by the Florida Center for Instructional Technology (FCIT) using data from the Florida Department of Environmental Protection and the Florida Geological Survey.

0 2 4 6 Miles

Title: Sinkholes of Levy County, Florida [Main Map Page](#)
Projection: [Zoomify Version](#)
Source Bounding Coordinates: [B/W PDF Version](#)
W: E: N: S: [Color PDF Version](#)
Puzzles: [Easy](#), [Medium](#), [Hard](#)
[Google Earth](#)

Description: This map was created by FCIT and represents reported sinkhole events in Levy County based on data gathered by the Florida Geological Survey (FGS) and the Florida Department of Environmental Protection (FDEP). " This dataset represents a set of points for reported sinkhole events. The data herein represents reported sinkhole activity but may also contain non-karst related subsidence such as collapsed septic systems, water mains, and/or other man-made features. This information contained in this dataset is primarily used to more fully understand the unique relationship between karst and the state's groundwater resources and aquifer systems." DATA DISCLAIMER This geologic data was developed to carry out agency responsibilities related to management, protection, and development of Florida's natural resources. Neither FDEP/FGS or the Florida Center for Instructional Technology assumes any responsibility for the consequences of inappropriate uses or interpretations of the data.

For a complete list of sinkholes in this county, click [here](#).

Place Names: Levy, Yankeetown, Gulf Hammock, Ellzey, Otter Creek, Usher, Bronson, Raleigh, Williston, Montbrook, Morriston, Cedar Key, Chiefland, Fanning Springs,

ISO Topic Categories: boundaries, geoscientificInformation, inlandWaters

Keywords: Sinkholes of Levy County, Florida , Sinkhole, Karst, Caves, Sinks, physical, political, ksinkhole, transportation, physical features, geological, county borders, roads, boundaries, geoscientificInformation, inlandWaters, 2008

Source: Florida Center for Instructional Technology, *Sinkholes* (Tampa, FL: University of South Florida, 2008)

Map Credit: Courtesy of the Florida Center for Instructional Technology

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[FL Maps](#) > [County](#) > [Levy](#) > Sinkholes of Levy County, Florida , 2008

[Site Map](#)

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Attachment 3
NRC Staff Request for More Information # 108

March 15, 2012

Mr. John Elnitsky, Vice President
Nuclear Plant Development
Progress Energy Florida, Inc.
PO Box 14042
Saint Petersburg, FL 33733

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 108
CONCERNING IMPLEMENTATION OF FUKUSHIMA NEAR-TERM TASK
FORCE RECOMMENDATIONS

Dear Mr. Elnitsky:

The U.S. Nuclear Regulatory Commission (NRC) staff is preparing to implement some of the Fukushima Near-Term Task Force recommendations, as described in SECY-12-0025, "Proposed Orders and Requests for Information in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Tsunami" dated February 17, 2012. In SECY-12-0025, the staff proposed requiring new reactors to comply with certain Fukushima recommendations prior to licensing. On March 9, 2012, the Commission approved, with certain modification, the recommendations of SECY-12-0025 in SRM-12-0025. Accordingly, the staff is requesting that you provide additional information that describes how you have addressed (or plan to address) the actions in SECY-12-0025 that were approved by SRM-12-0025, as outlined below, in the combined license application for the Levy County Nuclear Power Plant. SECY-12-0025 and SRM-12-0025 are available in ADAMS as Accession Numbers ML12039A103 and ML120690347, respectively.

- Evaluate the seismic hazards at your site against current NRC requirements and guidance, and, if necessary, update the design basis and structures systems and components important to safety to protect against the updated hazards (seismic portion only - of detailed Recommendation 2.1 - Enclosure 7 of SECY-12-0025).
- Provide reasonable protection for equipment currently provided pursuant to 10 CFR 50.54(hh)(2) from the effects of design-basis external events and to add equipment as needed to address multi-unit events while other requirements are being revised and implemented (detailed Recommendation 4.2 - Enclosure 4 of SECY-12-0025).
- Provide sufficient reliable instrumentation, able to withstand design-basis natural phenomena, to monitor key spent fuel pool parameters (i.e., water level, temperature, and area radiation levels) from the control room (detailed Recommendation 7.1 - Enclosure 6 of SECY-12-0025).
- Determine and implement the required staff to fill all necessary positions for responding to a multi-unit event, conduct periodic training and exercises for multiunit and prolonged station blackout (SBO) scenarios, ensure that emergency preparedness equipment and

facilities are sufficient for dealing with multi-unit and prolonged SBO scenarios, provide a means to power communications equipment needed to communicate onsite and offsite during a prolonged SBO and maintain the Emergency Response Data System capability throughout the accident (detailed Recommendation 9.3 - Enclosure 7 to SECY-12-0025).

In order to minimize delays to the current licensing schedule, we request that you respond to all Fukushima-related requests for additional information (RAIs) within 60-days of receipt of the RAIs or provide a schedule for your response within 30-days. If you have any questions concerning this letter, please contact Mr. Brian C. Anderson at 301-415-9967 or email Brian.Anderson@nrc.gov.

Sincerely,

/RA Amy Snyder for:/

Mark Tonacci, Chief
Licensing Branch 4 (LB4)
Division of New Reactor Licensing
Office of New Reactors

Docket Nos.: 50-029
50-030

Enclosures:
As stated

cc: See next page

facilities are sufficient for dealing with multi-unit and prolonged SBO scenarios, provide a means to power communications equipment needed to communicate onsite and offsite during a prolonged SBO and maintain the Emergency Response Data System capability throughout the accident (detailed Recommendation 9.3 - Enclosure 7 to SECY-12-0025).

In order to minimize delays to the current licensing schedule, we request that you respond to all Fukushima-related requests for additional information (RAIs) within 60-days of receipt of the RAIs or provide a schedule for your response within 30-days. If you have any questions concerning this letter, please contact Mr. Brian C. Anderson at 301-415-9967 or email Brian.Anderson@nrc.gov.

Sincerely,

/RA Amy Snyder for:/

Mark Tonacci, Chief
 Licensing Branch 4 (LB4)
 Division of New Reactor Licensing
 Office of New Reactors

Docket Nos.: 50-029
 50-030

Enclosures:
 As stated

cc: See next page

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NRO-002

OFFICE	PM:DNRL:LB4	LA:DNRL:LB4	OGC	BC:DNRL:LB4	DD:DNRL
NAME	BAnderson*	RButler	JMartin*	MTonacci	FAkstulewicz
DATE	02/27/2012	02/24/2012	02/28/2012	02/29/2012	03/13/2012

OFFICIAL RECORD COPY

COL - Progress Energy - Levy County Mailing List

(Revised 01/26/2012)

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COL - Progress Energy - Levy County Mailing List

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Attachment 4
NRC Staff Status Report Levy COL February 29, 2012

February 29, 2012

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
PROGRESS ENERGY FLORIDA, INC.)
) Docket Nos. 52-029 and 52-030
)
(Levy County Nuclear Power Plant,)
Units 1 and 2))

STATUS REPORT

In accordance with the Atomic Safety and Licensing Board's (Board) Initial Scheduling Order,¹ the NRC staff (Staff) is providing the Board with the Staff's thirtieth Status Report.

The Staff completed the Advanced Final Safety Evaluation Report (AFSER) on September 15, 2011, and the Staff met with the AP1000 ACRS Subcommittee on October 18-19, 2011. The Staff met with the full committee of the ACRS on December 1-2, 2011. The ACRS letter that includes the results of the ACRS review of the AFSER was issued on December 7, 2011 and is available on ADAMS (ML11339A126). After the Staff met with the ACRS, the Staff determined in SECY-12-0025 that certain recommendations from the Fukushima Near Term Task Force should be implemented for new reactors prior to licensing. Consequently, the Staff intends to issue requests for additional information (RAIs) regarding these recommendations to the Applicant. At this time, the Staff anticipates that these RAIs will delay the issuance of the FSER by two months.

¹ *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-22, 70 NRC 640, 646 (August 27, 2009).

For the environmental review, as stated in the Staff's August 5, 2010 Status Report, the Staff publicly released the Draft Environmental Impact Statement (DEIS) on August 5, 2010 and sent it to the Environmental Protection Agency on August 6, 2010. The Staff currently plans to issue the final Environmental Impact Statement on April 27, 2012.

Respectfully submitted,

/Signed (electronically) by/

Laura R. Goldin
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
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Laura.Goldin@nrc.gov

Dated at Rockville, Maryland
The 29th day of February 2012

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
)
PROGRESS ENERGY FLORIDA, INC.) Docket Nos. 52-029 and 52-030
)
)
(Levy County Nuclear Site, Units 1 and 2))

CERTIFICATE OF SERVICE

I hereby certify that copies of the NRC Staff's Status Report have been served on the following persons by Electronic Information Exchange on this 29th day of February 2012:

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/Signed (electronically) by/

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Attachment 5
Southern Co. March 30, 2012 Preliminary Amendment Request

C. R. "Chuck" Pierce
Director
Regulatory Affairs

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Post Office Box 1295
Birmingham, AL 35242

Tel 205.992.7872
Fax 205.992.5296



MAR 30 2012

Docket No.: 52-025

ND-12-0671
10 CFR 50.90

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 3
Preliminary Amendment Request (PAR):
Nuclear Island Basemat Thickness Tolerance (PAR-12-003)

Ladies and Gentlemen:

The U.S. Nuclear Regulatory Commission (NRC) issued the Vogtle Electric Generating Plant (VEGP) Unit 3 combined license (COL) (License No. NPF-91) to Southern Nuclear Operating Company (SNC) on February 10, 2012. SNC expects that a request for an amendment to the COLs for both VEGP Units 3 and 4 to revise the basemat thickness tolerances is imminent. The associated License Amendment Request (LAR) (LAR-12-003) letter is expected to be submitted no later than April 6, 2012.

Construction activities associated with pouring concrete for the nuclear island basemat structure affected by the proposed license amendment are scheduled to begin mid June 2012. SNC hereby submits a Preliminary Amendment Request, PAR-12-003, to allow construction activities to proceed in accordance with the current integrated schedule for Unit 3. In order to avoid unnecessary construction delays during the NRC's evaluation of the related license amendment request (LAR), the determination of whether the NRC has any objection to SNC proceeding with the installation of the proposed plant licensing basis modification identified in the PAR/LAR is requested to be provided by June 1, 2012. Delayed determination regarding this PAR could result in an additional delay in the construction of the nuclear island basemat structure and subsequent construction activities that are dependent upon the completion of the basemat structure.

The requested revisions are necessary to support changes identified during the surveying of the mudmat which forms the foundation upon which the basemat is constructed. A description, a reason for the change, and associated regulatory evaluations are contained in Enclosure 1 to this letter. To facilitate the staff's review of this activity, a proposed markup depicting the requested change to the licensing basis document is contained in Enclosure 2 to this letter. This PAR has been developed in accordance with guidance provided in Interim Staff Guidance on Changes during Construction Under 10 CFR Part 52, COL-ISG-25 [ML111530026], and corresponds

DD92
NRD

accurately and technically with the above-mentioned LAR-12-003. The technical scope of this PAR is consistent with the technical scope of the LAR.

This letter does not contain any NRC commitments. Should you have any questions, please contact Mr. Wesley Sparkman at (205) 992-5061.

Mr. C. R. Pierce states that he is the Regulatory Affairs Director 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

C. R. Pierce

C. R. Pierce

CRP/ERG/dmw

Sworn to and subscribed before me this 30th day of March 2012

Notary Public: *Deborah A. Jaworski*

My commission expires: October 24, 2012

- Enclosure 1: Vogtle Electric Generating Plant (VEGP) Unit 3 – Preliminary Amendment Request Regarding Nuclear Island Basemat Thickness Tolerances
- Enclosure 2: Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – LAR Licensing Basis Document Proposed Change

cc: Southern Nuclear Operating Company

Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. J. A. Miller, Executive Vice President, Nuclear Development
Mr. D. A. Bost, Chief Nuclear Officer
Mr. B. L. Ivey, VP, Regulatory Affairs
Mr. M. D. Rauckhorst, VP, Vogtle 3 & 4 Construction
Mr. D. H. Jones, VP, Regulatory Affairs, Vogtle 3 & 4
Mr. J. R. Johnson, VP, Operational Readiness, Vogtle 3 & 4
Mr. T. E. Tynan, Site VP, Vogtle 1 & 2
Mr. D. M. Lloyd, Project Support Director, Vogtle 3 & 4
Mr. M. J. Ajluni, Nuclear Licensing Director
Mr. D. L. Fulton, Environmental Manager
Mr. J. D. Williams, Site Support Manager, Vogtle 3 & 4
Mr. C. H. Mahan, Site Licensing Manager, Vogtle 3 & 4
Ms. A. G. Aughtman, Corporate Licensing Manager, Vogtle 3 & 4
Mr. W. A. Sparkman, Licensing Supervisor
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Nuclear Regulatory Commission

Mr. V. M. McCree, Region II Administrator
Mr. F. M. Akstulewicz, Deputy Director Div. of New Reactor Licensing
Mr. M. E. Tonacci, AP1000 Licensing Branch Chief
Mr. R. G. Joshi, Lead Project Manager of New Reactors
Mr. D. C. Habib, Project Manager of New Reactors
Ms. D. L. McGovern, Project Manager of New Reactors
Mr. B. M. Bovol, Project Manager of New Reactors
Ms. M. A. Sutton, Environmental Project Manager
Mr. L. M. Cain, Senior Resident Inspector of VEGP 1 & 2
Mr. J. D. Fuller, Senior Resident Inspector of VEGP 3 & 4

Georgia Power Company

Mr. B. H. Whitley, Nuclear Development Director

State of Georgia

Mr. J. H. Turner, Environmental Protection Division Director

Oglethorpe Power Corporation

Mr. M. W. Price, Executive Vice President and Chief Operating Officer
Mr. K. T. Haynes, Director of Contracts and Regulatory Oversight

Municipal Electric Authority of Georgia

Mr. J. E. Fuller, Senior Vice President, Chief Financial Officer
Mr. S. M. Jackson, Vice President, Power Supply

Dalton Utilities

Mr. D. Cope, President and Chief Executive Officer

Bechtel Power Corporation

Mr. J. S. Prebula, Project Engineer
Mr. R. W. Prunty, Licensing Engineer

Tetra Tech NUS, Inc.

Ms. K. K. Patterson, Project Manager

Shaw Stone & Webster, Inc.

Mr. G. Grant, Vice President, Licensing & Regulatory Affairs
Ms. K. Stoner, Vogtle Project Manager
Mr. C. A. Castell, Licensing Engineer
Mr. E. C. Wenzinger, Licensing Engineer, Vogtle Units 3 & 4

Westinghouse Electric Company, LLC

Ms. J. Falascino, Vice President, Project Delivery
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Mr. R. F. Ziesing, Director, Vogtle AP1000 Operations and Consortium Licensing
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Southern Nuclear Operating Company

ND-12-0671

Enclosure 1

Vogtle Electric Generating Plant (VEGP) Unit 3

Preliminary Amendment Request

Regarding

Nuclear Island Basemat Thickness Tolerances

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC) is currently preparing a license amendment request (LAR) to change the Vogtle Electric Generating Plant (VEGP), Units 3 and 4, licensing basis documents associated with Combined License Nos. NPF-91 and NPF-92, respectively. Accordingly, SNC requests the determination of whether the NRC has any objection to proceeding with the installation of the proposed plant modification identified in the Preliminary Amendment Request (PAR) provided below which is consistent with the LAR to be provided by the date shown below.

PAR Request Number: PAR-12-003	Station Name: VEGP	Unit Number(s): <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4	PAR Request Date: March 30, 2012
1. NRC PAR Notification Requested Date (see Block 9 for basis): June 1, 2012			
2. License Amendment Request References (as applicable):			
<input type="checkbox"/> LAR submittal date and SNC Correspondence Number: _____			
<input checked="" type="checkbox"/> Expected LAR submittal date: on or before April 6, 2012			
3. Brief Description of Proposed Change:			
<p>The proposed change will change the upper tolerance on the Nuclear Island (NI) critical sections basemat thickness as identified in the VEGP Units 3 and 4 Final Safety Analysis Report (FSAR), which includes plant-specific Design Control Document (DCD), Subsection 3.8.5 and associated Table 3.8.5-3, Note 2, where this thickness tolerance value is identified. The note is designated as Tier 2* design information and identifies the NI critical sections basemat thickness upper tolerance as +1 inch. The proposed change is to increase this tolerance to +4 inches.</p>			
4. Reason for License Amendment Request:			
<p>The AP1000 nuclear island consists of three seismic Category I structures founded on a common basemat. The three structures that make up the nuclear island are the coupled auxiliary and shield buildings, the steel containment vessel, and the containment internal structures. The nuclear island is shown in Final Safety Analysis Report or FSAR (which includes the plant-specific Design Control Document or DCD) Figure 3.7.1-14. For ease of construction, the foundation is built on a mudmat. The mudmat is lean, nonstructural concrete and rests upon the load-bearing soil.</p> <p>The construction tolerance included in the note is appropriate for a section using forms to determine the concrete thickness. The basemat concrete is placed without forms on top of the mudmat with the mudmat at its as-built location. The construction tolerance for this method of construction needs to be increased to account for the variability of the mudmat surface and relative settlement at the time of concrete placement.</p> <p>Recent surveys of the mudmat upon which the basemat is to be constructed have indicated that the upper surface is not as level as expected. With the identified variations in the top surface of the mudmat, the existing thickness tolerances for the nuclear island (NI) basemat critical locations provided in the FSAR/plant-specific DCD Table 3.8.5-3, Note 2 cannot be obtained while providing a level upper surface of the basemat upon which the rest of the nuclear island (NI) is to rest. Since a level upper surface is desired</p>			

for construction of the remainder of the NI, the upper tolerance for the basemat thickness is requested to be increased.

This proposed change is consistent with ACI 117-90. A review of ACI 117-90 indicates that the identification of a +1 inch upper tolerance value for the NI basemat thickness is very conservative and is aligned with the tolerances for formed structural elements instead of the tolerance for structural elements cast against soil. Dimensions of structural elements cast against soil often require greater tolerance due to the variability of the soil surfaces that the concrete is cast against. This is proving to be the case for the Vogtle NI mudmat which is set upon a soil foundation.

The increase in the basemat thickness construction tolerance may result in slightly more concrete than the nominal basemat design. This additional concrete will not have an adverse impact on the strength of the basemat or the response of basemat to loads, including seismic loads, from the nuclear island structures supported by the basemat. The basemat design with the increase in the basemat thickness construction tolerance remains in compliance with ACI-349. No increase in structural reinforcement is required to compensate for the additional concrete. The additional concrete mass does not have an adverse impact on the seismic design spectra or the structural analysis of the basemat or other nuclear island structures.

The increase in basemat thickness construction tolerance has no impact on the finite element analysis methods used to analyze the nuclear island structures. The modeling of the structures is not impacted. The analysis of the reactor coolant system and core to normal operation and postulated accident conditions is not impacted by the increase in basemat thickness construction tolerance.

5. Is Exemption Request Required? Yes No

If Yes, Briefly Describe the Reason for the Exemption. Not Applicable

6. Identify Applicable Precedents: No precedents identified.

7. Preliminary Assessment of Significant Hazards Consideration [10 CFR 50.92(c)]:

The proposed LAR changes would amend Combined Licenses Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively, in regard to increasing the upper tolerance on the thickness of the nuclear island (NI) basemat critical sections as identified in Final Safety Analysis Report (and plant-specific Design Control Document or DCD) Table 3.8.5-3, Note 2, which is Tier 2* information. An increase in the upper tolerance is requested in order to directly provide a level upper surface of the basemat upon which the rest of the NI is to rest.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

As indicated in FSAR (plant-specific DCD) Subsection 3.8.5.5, the design function of the basemat is to provide the interface between the nuclear island

structures and the supporting soil or rock. The basemat transfers the load of nuclear island structures to the supporting soil or rock. The basemat transmits seismic motions from the supporting soil or rock to the nuclear island. The revision of the basemat construction tolerance does not have an adverse impact on the response of the basemat and nuclear island structures to safe shutdown earthquake ground motions or loads due to anticipated transients or postulated accident conditions. The revision of the basemat construction tolerance does not impact the support, design, or operation of mechanical and fluid systems. There is no change to plant systems or the response of systems to postulated accident conditions. There is no change to the predicted radioactive releases due to normal operation or postulated accident conditions. The plant response to previously evaluated accidents or external events is not adversely affected, nor does the change described create any new accident precursors. Therefore, there is no significant increase in the probability or consequences of an accident previously evaluated.

2. **Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?**

Response: No

The proposed change is to increase the construction tolerance for the basemat thickness. The revision of the basemat construction tolerance does not change the design of the basemat or nuclear island structures. The revision of the basemat construction tolerance does not change the design function, support, design, or operation of mechanical and fluid systems. The revision of the basemat construction tolerance does not result in a new failure mechanism for the basemat or new accident precursors. As a result, the design function of the basemat is not adversely affected by the proposed change. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. **Does the proposed amendment involve a significant reduction in a margin of safety?**

Response: No

The revision in the basemat thickness construction tolerance does not have an adverse impact on the strength of the basemat. The increase in the basemat thickness construction tolerance does not have an adverse impact on the seismic design spectra or the structural analysis of the basemat or other nuclear island structures. The revision in the basemat thickness construction tolerance has no impact of the analysis of the nuclear island for sliding or overturning. As a result, the design function of the basemat is not adversely affected by the proposed change. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

8. Preliminary Assessment of Categorical Exclusion from Environmental Review [10 CFR 51.22]:

The proposed amendment would revise the construction tolerance for the basemat concrete thickness. The basemat is located approximately 40 feet below grade underneath the nuclear island. The increase in the basemat thickness construction tolerance will not change the materials used in the basemat or the construction methods. The nature of this change is such that it will not produce conditions which could result in adverse environmental impact either during construction or subsequently during plant operation. This change would only affect the basemat and would have no effect on any plant effluents that may be released offsite, or on any aspects of plant design or operation that would affect individual or cumulative occupational radiation exposure. Furthermore, as discussed in Section 4.1 of License Amendment Request LAR-12-003, the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c).

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, facility construction and operation following implementation of the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

9. Impact of Change on Installation and Testing Schedules:

The project schedule currently identifies a near-term impact to the scheduled Nuclear Island (NI) basemat work for Vogtle Unit 3. The safety-related concrete pour for the NI basemat is forecast for mid June. However, this is a fluid date that may fluctuate based on the achievement of activities onsite. As such, the NRC PAR Notification Requested Date is as shown in Block 1. As this date approaches, communication and coordination will be necessary to update this schedule information.

Regardless of the date of the concrete pour, it would be a significant impact to pour other than a level surface. Thus, inability to accept the requested change to the upper surface thickness tolerances for the critical locations of the basemat would result in a delay in the construction of the basemat and subsequent construction activities that are dependent upon the completion of the basemat.

No testing is impacted by the change to the NI basemat thickness tolerances.

10. Impact of Change on ITAAC:

The change is specific to Tier 2* information in the FSAR (DCD) and does not impact the ITAAC related to the Nuclear Island (NI) structure basemat.

11. Additional Information: None.

Southern Nuclear Operating Company

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Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

LAR

Licensing Basis Document Proposed Change

This enclosure includes this cover page and 1 page showing proposed licensing basis document change.

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Enclosure 2

Preliminary Amendment Request (PAR-12-003): Nuclear Island Basemat Thickness Tolerances

Marked-up FSAR (DCD) Table 3.8.5-3 (Note 2)

*[2. The thickness of these sections is 6'0" with a construction tolerance of ~~+1~~+4 inches, -3/4 inch.]**