

January 15, 2014

Mr. B. L. Ivey, Vice President
Regulatory Affairs
Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway, B022
Birmingham, AL 35242

SUBJECT: WITHDRAWAL ACKNOWLEDGMENT LETTER FOR SOUTHERN NUCLEAR
OPERATING COMPANY'S LICENSE AMENDMENT REQUEST FOR THE
VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4: AUXILIARY
BUILDING STRUCTURAL FLOOR AND ROOF DETAILS (LAR 13-026)
(TAC NO. RP9474)

Dear Mr. Ivey:

By letter dated November 13, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13317B908) and revised by a letter dated December 6, 2013 (ADAMS Accession No. ML13343A012), Southern Nuclear Operating Company (SNC) submitted a license amendment request for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 combined licenses (COLs) (License Nos. NPF-91 and NPF-92 respectively). The proposed amendment would depart from plant-specific Design Control Document (DCD) Tier 2* and Tier 2 material by revising details of the design of auxiliary building structural floors and roof. The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of this amendment request. The acceptance review was performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the application has any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plant.

Consistent with Section 50.90 of 10 CFR, an amendment to the license must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 52.79 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal address the design and operating characteristics, unusual or novel design features, and principal safety considerations.

B. L. Ivey

- 2 -

By letter dated December 20, 2013 (ADAMS Accession No. ML13358A196), you requested to withdraw the application from NRC review. The NRC staff acknowledges your request to withdraw the application. NRC staff activities on the review have ceased and the associated Technical Assignment Control Number has been closed.

Although the staff's review was not completed, the NRC staff notes that its review to date has identified that your application did not provide the information (see Enclosure) to enable the NRC staff to perform a review. Therefore, if you decide to re-submit the request, it must include the information included in the enclosure.

If you have any questions, please contact me at (301) 415-6191 or Ravindra.Joshi@NRC.gov.

Sincerely,

/RA Denise McGovern for:/

Ravindra Joshi, Senior Project Manager
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Docket Nos.: 52-025
52-026

Enclosure: As stated

cc w/encl: See next page

B. L. Ivey

- 2 -

By letter dated December 20, 2013 (ADAMS Accession No. ML13358A196), you requested to withdraw the application from NRC review. The NRC staff acknowledges your request to withdraw the application. NRC staff activities on the review have ceased and the associated Technical Assignment Control Number has been closed.

Although the staff's review was not completed, the NRC staff notes that its review to date has identified that your application did not provide the information (see Enclosure) to enable the NRC staff to perform a review. Therefore, if you decide to re-submit the request, it must include the information included in the enclosure.

If you have any questions, please contact me at (301) 415-6191 or Ravindra.Joshi@NRC.gov.

Sincerely,

/RA Denise McGovern for:/

Ravindra Joshi, Senior Project Manager
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Docket Nos.: 52-025
52-026

Enclosure: As stated

cc w/encl: See next page

DISTRIBUTION:

| | | | |
|--------------------|------------------------|-----------|-----------|
| Public | RidsNroDnrl | MSutton | DMcGovern |
| RidsNroDnrlLB4 | JFuller | MErnstes | MBrown |
| RidsOgcMailCenter | RidsAcrcAcnwMailCenter | JBielecki | LBurkhart |
| RidsRgn2MailCenter | SBrunell | RButler | DJaffe |
| APonko | GKhouri | MShams | BTegeler |

ADAMS Accession No.: ML14008A093

NRO-002

| | | | | |
|--------|--------------|-------------|------------|-------------|
| OFFICE | DNRL/LB4: PM | DNRL/LB4:LA | DE/SEB1:BC | DNRL/LB4:BC |
| NAME | RJoshi | RButler | MShams | LBurkhart |
| DATE | 01/15/14 | 01/09/14 | 01/14/14 | 01/15/14 |

OFFICIAL RECORD COPY

Deficiencies in Southern Nuclear Operating Company's License Amendment Request (LAR-13-026), "Structural Floors and Roof Details"

In License Amendment Request (LAR) 13-26, Southern Nuclear Operating Company, Inc. (SNC) proposes revising the design of the reinforced concrete slabs described in Subsection 3H.5.3 and Figure 3H.5-8 of the Updated Final Safety Analysis Report (UFSAR), and modifying the subsection and figure accordingly.

Based on the current description of these slabs in Subsection 3H.5.3 and Figure 3H.5-8 of the UFSAR, staff understands that these structural elements are designed and detailed as a one-way composite slab system, consisting of an 8 inch thick reinforced concrete precast panel with 16 or 24 inches of cast-in-place concrete placed on top. Shear ties are placed between the precast and cast-in-place portions to develop the horizontal shear necessary for composite behavior. These slabs span between and are supported by the reinforced concrete shearwalls within the Auxiliary Building. Flexural reinforcement consists of positive moment reinforcement placed in the bottom of the precast panel and negative moment reinforcement placed in the top of the cast-in-place concrete portion. This reinforcement is fully anchored into the supporting walls and no relative rotation is assumed to occur between the composite slab and walls at their connection. For resisting loads applied after construction, the composite slab behaves as a 24 or 36 inch thick monolithic concrete slab built integrally with the supporting walls. Staff further understands that the structural models on which the in-structure response spectra (ISRS) were developed are consistent with these assumptions, and the concrete slabs described in this subsection of the UFSAR are to be designed and constructed in accordance with the requirements of ACI 349-01, including Chapter 17, and any applicable supplemental requirements of the UFSAR.

Based on the proposed revisions to Subsection 3H.5.3 and Figure 3H.5-8 of the UFSAR, staff understands that in the revised design the precast panel and concrete are not assumed or designed to act as one unit for resisting loads applied after construction. The floor system consists of a 16 or 24 inch one-way reinforced concrete slab cast on an 8-12 precast panel. The precast panel is provided as formwork for construction of the cast-in-place slab and is abandoned in place. After construction and attainment of sufficient strength, the cast-in-place slab supports all loads without reliance on the precast panel. During seismic events, the precast panel is assumed to be supported by the cast-in-place slab and ties are provided between the two elements for this purpose. Flexural reinforcement is placed in the top and bottom of the cast-in-place slab. This reinforcement is fully anchored into the supporting walls and no relative rotation is assumed to occur between the cast-in-place slab and walls at their connection. Reinforcement in the precast panel does not extend into the supporting walls and a gap may be present between the panel and wall. For resisting loads applied after construction, the floor system is assumed to be a 16 or 24 inch thick monolithic concrete slab built integrally with the supporting walls. These floors are to be designed and constructed in accordance with the requirements of ACI 349-01, and any applicable supplemental requirements of the UFSAR.

1. Please verify that SNC's understanding of the current design of the reinforced concrete slabs described in Subsection 3H.5.3 of the UFSAR is consistent with that of the staff in that the portions of Appendix 3H are applicable to entire segments of Nuclear Island and not only critical sections. If it varies, please provide specific points of disagreement.
2. Please verify staff's understanding of the revised design based on the proposed revisions to Subsection 3H.5.3 and Figure 3H.5-8 of the UFSAR is consistent with SNC's intent.
3. In Section 3 of the LAR, it states: "The precast panel is part of the Seismic Category I floor slab. The shear stirrups connecting the precast panel with the cast-in-place concrete support the precast panel to resist seismic loads acting on the precast panel. The weight of the precast panel is included in the analysis of the floor and is not considered as a separate element, in accordance with ACI 349, Chapter 17." Please clarify the intent of these statements:
 - a. In what manner is the precast panel assumed to be part of the Seismic Category I floor slab?
 - b. Is the precast panel an essential structural element of the floor?
 - c. Are the seats on which the precast panel rests part of the Seismic Category I floor system?
4. In Section 3 of the LAR, it states: "For the floors with precast concrete panels, the stiffness of the floor is based on the combined thicknesses of the cast-in-place portion and the precast concrete panel." Staff interprets this statement to mean that the depth assumed in calculating the moment of inertia and stiffness of the floor includes the thickness of the precast panel. If so, doesn't this assumption require the development of composite action between the precast panel and cast-in-place slab?
5. If composite behavior between the precast panel and cast-in-place portion is assumed in the stiffness calculations of the floor:
 - a. Please clarify how this assumption is compatible with assuming the cast-in-place portion supports all post-construction loads, and the revised description of the floor system proposed in the LAR.
 - b. Are consistent assumptions used in calculating the stiffness of the floor for structural design and determining the fundamental dynamic properties? If not, are the assumptions conservative and do they meet the requirements of Section 8.6 of ACI 349-01?
 - c. Will the design of the shear stirrups between the two elements be in accordance with the requirements of Chapter 17 of ACI 349-01?
 - d. Will the design of the reinforcement in the precast panel be based on composite behavior?
 - e. The thickness of the system at the wall connection will be that of the cast-in-place slab alone due to the gap and lack of continuity between the precast panel and wall. Has the non-prismatic nature of the revised floor system been considered in the analysis and design?
 - f. Please quantify the reduction in stiffness of the floor system due to the gap and lack of continuity between the precast panel and wall.

- g. Please quantify any changes to the ISRS due to the reduction in stiffness of the floor system.
- 6. If the precast panel and cast-in-place slabs are not assumed to act as a composite unit in calculating the moment of inertia and stiffness of the floor system:
 - a. Please clarify whether the revised system design is consistent with assumptions made in the design basis seismic analysis models (e.g., NI20 and NI05) and whether the stiffness of the precast panel has been included in calculating the fundamental dynamic properties of the floor? If so, please describe the methodology used.
 - b. Please quantify the reduction in stiffness of the revised floor system.
 - c. Please quantify the impact of the design change on ISRS due to the reduction in stiffness of the floor system.
- 7. Are the locations of the critical sections shown on figures 3H.5-1 consistent with Subsection 3H.5 of the UFSAR?

Vogtle Units 3 & 4 Mailing List

(Revised 01/06/2014)

cc:

Resident Manager
Oglethorpe Power Corporation
Alvin W. Vogtle Nuclear Plant
7821 River Road
Waynesboro, GA 30830

Stephen E. Kuczynski
Chairman, President and CEO
Southern Nuclear
P.O. Box 1295
Birmingham, AL 35201

Office of the Attorney General
40 Capitol Square, SW
Atlanta, GA 30334

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
Atlanta, GA 30334

Southern Nuclear Op. Co.
Document Control Coordinator
42 Inverness Center parkway
Attn: B236
Birmingham, AL 35242

Mr. Joseph A. (Buzz) Miller
Executive Vice President
Southern Nuclear Operating Company
241 Ralph McGill Blvd.
BIN 10240
Atlanta, GA 30308-3374

Anne F. Appleby
Oglethorpe Power Corporation
2100 East Exchange Place
Tucker, GA 30084

Resident Inspector
Plant Vogtle 3&4
7825 River Road
Waynesboro, GA 30830

County Commissioner
Office of the County Commissioner
Burke County Commission
Waynesboro, GA 30830

Elaine Sikes
Burke County Library
130 Highway 24 South
Waynesboro, GA 30830

Mr. James C. Hardeman
Environmental Radiation Program Manager
Environmental Protection Division
Georgia Dept. of Natural Resources
4220 International Pkwy, Suite 100
Atlanta, GA 30354-3906

Mr. Jerry Smith
Commissioner
District 8
Augusta-Richmond County Commission
1332 Brown Road
Hephzibah, GA 30815

B. L. Ivey
VP, Regulatory Affairs
Southern Nuclear Operating Company
40 Inverness Center Parkway, B022
Birmingham, AL 35242

Gene Stilp
1550 Fishing Creek Valley Road
Harrisburg, PA 17112

Rita Kilpatrick
250 Arizona Ave.
Atlanta, GA 30307

Mr. Robert E. Sweeney
IBEX ESI
4641 Montgomery Avenue
Suite 350
Bethesda, MD 20814

Vogle Units 3 & 4 Mailing List

George B. Taylor, Jr.
2100 East Exchange Pl
Atlanta, GA 30084-5336

Vogtle Units 3 & 4 Mailing List

Email

agaughtm@southernco.com (Amy Aughtman)
agbaker@southernco.com (Ann Baker)
awc@nei.org (Anne W. Cottingham)
bhwhitle@southernco.com (Brian Whitley)
Bill.Jacobs@gdsassociates.com (Bill Jacobs)
blivey@southernco.com (Pete Ivey)
bob.masse@opc.com (Resident Manager)
bwwaites@southernco.com (Brandon Waites)
chmahan@southernco.com (Howard Mahan)
cmeadors@southernco.com (Brian Meadors)
collinlj@westinghouse.com (Leslie Collins)
courtney@georgiawand.org (Courtney Hanson)
crpierce@southernco.com (C.R. Pierce)
csguinn@southernco.com (Candace Guinn)
cwaltman@roe.com (C. Waltman)
dahjones@southernco.com (David Jones)
danawill@southernco.com (Dana Williams)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
david.siefken@hq.doe.gov (David Siefken)
delongra@westinghouse.com (Rich DeLong)
dgbost@southernco.com (Danny Bost)
dlfulton@southernco.com (Dale Fulton)
drculver@southernco.com (Randy Culver)
ed.burns@earthlink.net (Ed Burns)
edavis@pegasusgroup.us (Ed David)
erg-xl@cox.net (Eddie R. Grant)
G2NDRMDC@southernco.com (SNC Document Control)
james1.beard@ge.com (James Beard)
jamiller@southernco.com (Buzz Miller)
jbtomase@southernco.com (Janice Tomasello)
jenmorri@southernco.com (Jennifer Buettner)
jim@ncwarn.org (Jim Warren)
jlhall@southernco.com (Jennifer Hall)
Joseph_Hegner@dom.com (Joseph Hegner)
jranalli@meagpower.org (Jerry Ranalli)
jrjohnso@southernco.com (Randy Johnson)
jtgasser@southernco.com (Jeff Gasser)
karen.patterson@ttnus.com (Karen Patterson)
karlg@att.net (Karl Gross)
Katherine.Janik@Hq.Doe.Gov (Katherine Janik)
kim.haynes@opc.com (Kim Haynes)
kmseiber@southernco.com (Kristin Seibert)
KSutton@morganlewis.com (Kathryn M. Sutton)

Vogtle Units 3 & 4 Mailing List

kwaugh@impact-net.org (Kenneth O. Waugh)
lchandler@morganlewis.com (Lawrence J. Chandler)
ldperry@southernco.com (Leigh D. Perry)
maria.webb@pillsburylaw.com (Maria Webb)
markus.popa@hq.doe.gov (Markus Popa)
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)
mcintyba@westinghouse.com (Brian McIntyre)
mdrauckh@southernco.com (Mark Rauckhorst)
media@nei.org (Scott Peterson)
Melissa.Smith@Hq.Doe.Gov (Melissa Smith)
mike.price@opc.com (M.W. Price)
MSF@nei.org (Marvin Fertel)
nirsnet@nirs.org (Michael Mariotte)
nlhender@southernco.com (Nancy Henderson)
Nuclaw@mindspring.com (Robert Temple)
patriciaL.campbell@ge.com (Patricia L. Campbell)
Paul@beyondnuclear.org (Paul Gunter)
pbessette@morganlewis.com (Paul Bessette)
randall@nexusamllc.com (Randall Li)
rhenry@ap.org (Ray Henry)
RJB@NEI.org (Russell Bell)
russpa@westinghouse.com (Paul Russ)
rwink@ameren.com (Roger Wink)
sabinski@suddenlink.net (Steve A. Bennett)
sblanton@balch.com (Stanford Blanton)
sfrantz@morganlewis.com (Stephen P. Frantz)
sjackson@meagpower.org (Steven Jackson)
skauffman@mpr.com (Storm Kauffman)
skuczyns@southernco.com (Steve Kuczynski)
sroetger@psc.state.ga.us (Steve Roetger)
stephan.moen@ge.com (Stephan Moen)
taterrel@southernco.com (Todd Terrell)
tlubnow@mpr.com (Tom Lubnow)
Tom.Bilik@nrc.gov (Thomas Bilik)
TomClements329@cs.com (Tom Clements)
Vanessa.quinn@dhs.gov (Vanessa Quinn)
Wanda.K.Marshall@dom.com (Wanda K. Marshall)
wasparkm@southernco.com (Wesley A. Sparkman)
wayne.marquino@ge.com (Wayne Marquino)
weave1dw@westinghouse.com (Doug Weaver)