SOUTHERN NUCLEAR OPERATING COMPANY, INC.

ALABAMA POWER COMPANY

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 209
Renewed License No. NPF-2

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Joseph M. Farley Nuclear Plant, Unit 1, (the facility), Renewed Facility Operating License No. NPF-2, filed by Southern Nuclear Operating Company, Inc. (the licensee), dated August 31, 2015, as supplemented by letters dated February 17, 2016; April 8, 2016; May 26, 2016; June 9, 2016; and November 2, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 209, Renewed Facility Operating License No. NPF-2 is hereby amended to authorize revision to the Joseph M. Farley Nuclear Plant, Unit 1, emergency plan as set forth in the Southern Nuclear Operating Company, Inc., application dated August 31, 2015, as supplemented by letters dated February 17, 2016; September 28, 2015; April 8, 2016; May 26, 2016; June 9, 2016; and November 2, 2016, and evaluated in the NRC staff's safety evaluation dated March 14, 2017.

3. This amendment is effective as of its date of issuance and shall be implemented by January 31, 2018.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by MEvans for/

William M. Dean, Director
Office of Nuclear Reactor Regulation

Date of Issuance: March 14, 2017

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 206
Renewed License No. NPF-8

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Joseph M. Farley Nuclear Plant, Unit 2, (the facility) Renewed Facility Operating License No. NPF-8, filed by Southern Nuclear Operating Company, Inc. (the licensee), dated August 31, 2015, as supplemented by letters dated February 17, 2016; April 8, 2016; May 26, 2016; June 9, 2016; and November 2, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 206, Renewed Facility Operating License No. NPF-8 is hereby amended to authorize revision to the Joseph M. Farley Nuclear Plant, Unit 2, emergency plan as set forth in the Southern Nuclear Operating Company, Inc., application dated August 31, 2015, as supplemented by letters dated February 17, 2016; September 28, 2015; April 8, 2016; May 26, 2016; June 9, 2016; and November 2, 2016, and evaluated in the NRC staff's safety evaluation dated March 14, 2017.

3. This amendment is effective as of its date of issuance and shall be implemented by January 31, 2018.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by MEvans for/

William M. Dean, Director
Office of Nuclear Reactor Regulation

Date of Issuance: March 14, 2017

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 209 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-2

AMENDMENT NO. 206 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-8

SNC STANDARD EMERGENCY PLAN

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-348 AND 50-364

1.0 INTRODUCTION

By application dated August 31, 2015 (Reference 1), as supplemented by letters dated February 17, 2016 (Reference 2); April 8, 2016 (Reference 3); May 13, 2016 (Reference 4 (this supplement only applies to the Vogtle Electric Generating Plant (VEGP), Units 3 and 4)); May 26, 2016 (Reference 5); June 9, 2016 (Reference 6); and November 2, 2016 (Reference 7), Southern Nuclear Operating Company, Inc. (SNC) submitted a license amendment request (LAR) for the Joseph M. Farley Nuclear Plant, Units 1 and 2 (FNP); Edwin I. Hatch Nuclear Plant (Hatch), Units 1 and 2; and VEGP, Units 1, 2, 3, and 4. The amendments request U.S. Nuclear Regulatory Commission (NRC or the Commission) approval of the proposed SNC Standard Emergency Plan (SEP), encompassing all SNC plants and respective plant-specific annexes.

The supplemental letters dated February 17, 2016; April 8, 2016; May 13, 2016; May 26, 2016; June 9, 2016; and November 2, 2016, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 27, 2015 (80 FR 65816).

2.0 REGULATORY EVALUATION

This safety evaluation addresses the impact of the proposed changes in the SNC SEP and the FNP SEP Annex as they apply specifically to FNP. The regulatory requirements, and guidance on which the NRC based its acceptance, are as follows:

2.1 Regulations

The LAR concerns the emergency plan. As defined in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q)(1)(ii), "emergency plan" means the documents prepared and maintained by the licensee that identify and describe the licensee's methods for maintaining emergency preparedness and responding to emergencies. As a condition of its license, per 10 CFR 50.54(q)(2), each licensee is required to follow and to maintain the effectiveness of an emergency plan that meets the requirements in Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, and the planning standards of 10 CFR Section 50.47(b). Appendix E to 10 CFR Part 50 establishes minimum requirements for emergency plans for use in attaining an acceptable state of emergency preparedness. Per Section IV of Appendix E to 10 CFR Part 50, emergency plans shall contain, but not necessarily be limited to, information needed to demonstrate compliance with the elements addressing organization for coping with radiological emergencies, assessment actions, activation of emergency organization, notification procedures, emergency facilities and equipment, training; maintaining emergency preparedness, recovery, and onsite protective actions during hostile action.

As stated in 10 CFR 50.54(q)(3), a licensee may change its emergency plan without NRC approval if the change does not reduce the licensee's capability to perform an emergency planning function in the event of a radiological emergency, and the plan, as changed, continues to meet Appendix E to 10 CFR Part 50 and the planning standards of 10 CFR 50.47(b). However, per 10 CFR 50.54(q)(4), changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in 10 CFR 50.54(q)(1)(iv) may not be implemented without prior approval by the NRC. Where a licensee determines that a change requires NRC approval, 10 CFR 50.54(q)(4) requires the licensee to:

> identify[] the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements in appendix E to this part [10 CFR Part 50] and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

In this instance, SNC desires to use a fleet SNC Standard Emergency Plan (SEP) with site-specific annexes. Changes would include usage of standard staff augmentation times, changes in staffing numbers, changing in staffing duties, and usage of a consolidated Joint Information Center. In its letter NL-15-1392, dated August 31, 2015, SNC states that it "conservatively evaluated the proposed changes as reductions in effectiveness requiring NRC approval per 10 CFR 50.54(q)." Accordingly, the NRC staff's review assessed how proposed usage of the SEP and the site-specific annexes would meet Appendix E to 10 CFR Part 50 and the planning standards of 10 CFR 50.47(b).

2.2 Guidance

- NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (Reference 8), which provides specific acceptance criteria that the NRC has determined is an acceptable means of complying with the standards in 10 CFR 50.47. These criteria provide a basis for NRC licensees, and State and local

governments to develop acceptable radiological emergency preparedness (REP) plans.

- Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR) Interim Staff Guidance (ISG) document - NSIR/DPR-ISG-01, "Interim Staff Guidance, Emergency Planning for Nuclear Power Plants" (Reference 9), which provides updated guidance for addressing emergency planning requirements for nuclear power plants, based on changes to emergency preparedness (EP) regulations in 10 CFR 50.47 and Appendix E to 10 CFR Part 50, which were published in the *Federal Register* on November 23, 2011 (76 FR 72560).[1]

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed SNC SEP and the FNP SEP Annex, as described in SNC's application. The staff's technical evaluation is provided below.

3.1 Background

As stated in its August 31, 2015, letter, SNC currently has separate NRC-approved emergency plans for the following plants:

- Joseph M. Farley Nuclear Plant, Units 1 and 2
- Edwin I. Hatch Nuclear Plant, Units 1 and 2
- Vogtle Electric Generating Plant, Units 1 and 2
- Vogtle Electric Generating Plant, Units 3 and 4

The proposed changes would revise each plant's license in order to adopt an SNC SEP that includes plant-specific annexes. By standardizing emergency plans, SNC expects to make improvements by increasing consistency of organizations, duties and responsibilities, procedures, and training across all SNC plants and corporate EP programs. SNC also plans to align the plants using consistent standards and definitions.

In NRC letter dated December 2, 2015 (Reference 10), the staff presented a request for additional information (RAI) related to facilities. NRC requested information related to the establishment of two central Joint Information Centers (JICs). SNC responded to the RAI in a letter dated February 17, 2016 (Reference 2), stating that it had decided not to propose these changes to the JIC, as originally described to the NRC in Enclosure 3 of the SNC application dated August 31, 2015. SNC stated that the practice for coordination and dissemination of information to the public, as provided in the current SNC emergency plans and the State and local emergency plans by the respective plants near site JICs, would remain unchanged in the proposed SNC SEP. The letter dated February 17, 2016, also provided revisions to the SNC documents submitted in the letter dated August 31, 2015.

[1] The NRC amended its regulations to make miscellaneous corrections (78 FR 34245; June 7, 2013). One of the changes affected Appendix E to 10 CFR Part 50, Section IV.F.2.a.(1). The phrase "rated power" was revised to read "rated thermal power" for clarity and consistency with 10 CFR 54(gg)(1).

In a letter dated February 4, 2016 (Reference 11), the NRC issued its second set of RAIs related to on-shift and augmented emergency response organization (ERO) staffing. In a letter dated April 8, 2016, SNC provided responses to the second set of RAIs, including revisions to SNC documents updated from the licensee's February 17, 2016 correspondence.

In a letter dated April 14, 2016 (Reference 12), the NRC issued a third set of RAIs related to the proposed SNC SEP. In a letter dated June 9, 2016, SNC provided its response to the third set of RAIs, including revisions to SNC documents updated in the licensee's April 8, 2016, correspondence.

3.2 Proposed Changes

In its August 31, 2015, letter, SNC provided 19 enclosures. The following 7 documents relate to FNP:

- Enclosure 1: Evaluation of the Proposed Changes – LAR for the Adoption of a Standard Emergency Plan for the SNC Fleet
- Enclosure 2: SNC Standard Emergency Plan
- Enclosure 3: Corporate Joint Information Center Description and Technical Evaluation
- Enclosure 4: Farley Staffing – Detailed Description and Technical Evaluation
- Enclosure 5: Farley Nuclear Plant Standard Emergency Plan Annex
- Enclosure 6: Farley Nuclear Power Plant Justification Matrix
- Enclosure 19: Off-site Response Organizations – Letters of Consultation and Concurrence

Enclosures not listed above apply to Hatch and VEGP, Units 1, 2, 3, and 4. Additionally, Enclosure 3 was deleted from the LAR by letter dated February 17, 2016.

The major changes that SNC is requesting in the proposed SNC SEP include: (a) the adoption of a standard staff augmentation time period of 75 minutes from time of an Alert or higher declaration, (b) changes to ERO augmentation staffing numbers, and (c) changes in ERO staffing duties and responsibilities.

3.3 Evaluation

3.3.1 Review of the Proposed SNC SEP and FNP SEP Annex Using the 10 CFR 50.47(b) Planning Standards and NUREG-0654 Evaluation Criteria

3.3.1.1 10 CFR 50.47(b)(1) and Evaluation Criteria of Section II.A of NUREG-0654 – Assignment of Responsibility (Organization Control)

> Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

The 10 CFR 50.47(b)(1) criteria and Evaluation Criteria of Section II.A of NUREG-0654 are addressed in portions of Section A, “Assignment of Responsibility,” and Section B, “Emergency Response Organization (ERO),” as well as the Introduction to the proposed SNC SEP, along with portions of Section 1, “Introduction,” and Section 2, “Organizational Control of Emergencies,” to the proposed FNP SEP Annex.

The SNC SEP identifies those Federal, State, local, and private sector (contractors and private) organizations expected to respond in the event of an emergency at FNP, as well as their respective roles. Schematic representations of the Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility (EOF), and JIC provide designated staffing positions and their relationship to other SNC emergency response locations, as well as with offsite response organizations (ORO), where appropriate.

The Shift Manager is in direct charge of shift plant operations and is responsible for the actions of the on-shift crew. In an emergency, the Shift Manager assumes the responsibility of the Emergency Director and takes necessary actions to identify and respond to the emergency until relieved by another qualified Emergency Director. The Shift Manager, as Emergency Director, has the responsibility and authority to immediately and unilaterally initiate emergency actions, including command and control functions. The Emergency Director also has overall coordinating authority for SNC resources. The proposed SNC SEP defines command and control functions as event classification; notification of the NRC and designated State and local agencies; protective action recommendation (PAR) decisions to offsite agencies; and onsite emergency exposure controls, including authorization of emergency exposures in excess of Federal limits and issuance of potassium iodide (KI) to plant employees as a thyroid blocking agent. These control functions will normally shift from the control room to the TSC and subsequently to the EOF as an emergency event escalates in severity. The TSC Emergency Director will relieve the Shift Manager in the control room of the classification and emergency exposure control functions. The EOF Emergency Director will accept responsibility for notification and PAR functions. Both the TSC and EOF are activated simultaneously upon an Alert declaration or at the Shift Manager’s discretion.

SNC and FNP maintain 24-hour emergency response capability. The normal on-shift complement provides the initial response to an emergency. This group is trained to respond to emergency situations until the augmented ERO arrives. The ERO is composed of personnel with specialties in operations, maintenance, engineering, radiochemistry, radiation protection (RP), fire protection, and security.

Letters of agreement (LOAs) are not necessary with Federal and State agencies that are legally required to respond to an emergency; however, agreements are necessary if an agency is expected to provide assistance not required by law. Therefore, written agreements have been developed that establish the extent of operations between FNP and other support organizations that have an emergency response role consistent with this plan. These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. FNP has obtained LOAs with private contractors and others who provide emergency support services, which are referenced in the FNP SEP Annex. FNP maintains these LOAs in accordance with Appendix E to 10 CFR Part 50, paragraph IV.A.7. LOAs, at a minimum, state that the cooperating organization will provide its normal services in support of an emergency at the affected plant.

SNC has committed to a sufficient number of qualified personnel being identified to ensure that positions listed in the SNC SEP can be staffed on a 24-hour per day basis for an extended event. Designated positions in the OSC, TSC, and EOF are responsible for assuring continuity of resources (technical, administrative, and material).

Based on the above, the NRC staff concludes that SNC has identified primary responsibilities for emergency response by FNP and State and local organizations within the emergency planning zones (EPZs); the emergency responsibilities of the various supporting organizations have been specifically established; and each principal response organization has staff to respond and to augment its initial response on a continuous basis. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(1) and Evaluation Criteria of Section II.A of NUREG-0654 have been addressed adequately.

3.3.1.2 10 CFR 50.47(b)(2) and Evaluation Criteria of Section II.B of NUREG-0654 – Onsite Emergency Organization

> On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

The 10 CFR 50.47(b)(2) criteria and Evaluation Criteria of Section II.B of NUREG-0654 are addressed in portions of Section B, “Emergency Response Organization(ERO),” of the proposed SNC SEP, along with Table 2.2.A, “Farley Nuclear Plant On-Shift Staffing,” of the proposed FNP SEP Annex. NSIR/DPR-ISG-01 provides further guidance to supplement the existing guidance in NUREG-0654, Section II.B, Evaluation Criterion B.5, and Table B-1, “Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies,” regarding assignment of emergency response functions and tasks to licensee personnel.

The normal plant organization of FNP comprises a staff capable of providing the initial response to an emergency event. In a letter dated January 18, 2013 (Reference 13), SNC provided a summary of the completed on-shift staffing analysis required by Section IV.A.9 to Appendix E of 10 CFR Part 50. The summary states that the final report forms the technical basis for on-shift staffing as described in Table 2.2.A of the proposed FNP SEP Annex and will be considered

when performing future change evaluations regarding on-shift emergency staffing and/or changes to assigned emergency response functions. Section 2.2 of the FNP SEP Annex states that an on-shift staffing analysis was completed in accordance with the requirements of Section IV.A.9 to Appendix E of 10 CFR Part 50. A copy of the analysis is maintained in the SNC document management system.

Enclosure 4 of the letter dated August 31, 2015, includes a detailed description and technical evaluation of the proposed FNP staffing in the event of an emergency. Under the Notification and Communication section, SNC describes the changes for the assigned on-shift communicator and concludes with a statement that the changes will ensure there will be sufficient, appropriately trained personnel on-shift so that the communications function may be assigned to a member of the control room staff with no collateral tasks and that this has been demonstrated and documented by performing a shift staffing evaluation.

Organizational structures and the on-shift staffing tables are provided in the FNP SEP Annex. FNP maintains a 24-hour emergency response capability. The normal on-shift complement provides the initial response to an emergency situation until the augmented ERO arrives.

As noted previously in Section 3.3.1.1 of this safety evaluation, the Shift Manager is in direct charge of shift plant operations and is responsible for the actions of the on-shift crew. Also, in an emergency, the Shift Manager, as Emergency Director, initially assumes the responsibility for the command and control functions, and takes necessary actions to identify and respond to the emergency until relieved by another qualified Emergency Director in the TSC or EOF, as part of ERO augmented staffing. After being relieved as Emergency Director, the Shift Manager directs the activities of the operating crew and is responsible for the safe operation of the plant. Command and control normally shifts from the control room to the TSC, and subsequently to the EOF, but they may move in either direction, depending on conditions that would warrant passing such authority. The transfer of command and control may be completed sequentially or in parallel. A qualified Emergency Director in either facility can relieve the other facility of the command and control authority and responsibilities.

Table 2.2.A of the FNP SEP Annex includes the position titles and major tasks, in accordance with Table B-1 of NUREG-0654. Tables 1 through 4 in Section B.2, “Onsite Emergency Response Organization,” of the SNC SEP, provide the staffing by functional area in the TSC, OSC, EOF, and JIC, in accordance with Table B-1 of NUREG-0654, Section II.B.2.

The interfaces between and among the onsite functional areas of emergency activity and local services support, and State and local government response organizations are represented in Figures B.2.1.A – B.3.2.A of the SNC SEP. Contractor and private organizations, as well as other utilities and organizations, are also referenced in the SNC SEP. Local emergency support organizations are included in the FNP SEP Annex by the type of assistance provided: local law enforcement agencies, ambulance services, medical services, and firefighting.

FNP maintains an on-shift organization as documented in the FNP Emergency Plan, Revision 64.0 (Reference 14). This plan identifies the authority and responsibilities for emergency response and assigns major functional areas to onsite and offsite response facilities for augmented response. The on-shift staffing in both FNP, Units 1 and 2, Emergency Plan, Revision 64, and the proposed FNP SEP Annex, exceeds the guidance in NUREG-0654. The

on-shift control room staff for FNP, as described, remains unchanged in the proposed FNP SEP Annex. The FNP Emergency Plan, Revision 64, provides for an on-shift capability to perform dose assessment by an RP individual. In the proposed FNP SEP Annex, on-shift dose assessment will be assigned to an on-shift chemistry individual appropriately trained and dedicated to this task with no other collateral emergency response duties.

The FNP Emergency Plan, Revision 64, provides for two individuals to perform onsite (out-of-plant) surveys: an individual qualified to perform the survey and an assistant to drive a vehicle. A chemistry technician provides support to coordinate communications between the out-of-plant team and the dose assessor as needed. As part of the proposed changes to the FNP SEP Annex, the FNP on-shift staffing for the onsite out-of-plant survey will be performed by a single RP technician, or other appropriately trained individual.

In addition, the FNP Emergency Plan, Revision 64, provides an additional individual designated as Fire Tanker Driver, who is assigned to drive a large transport vehicle pulling a trailer-mounted water tank used for fires affecting areas external to the plant. There is no requirement in the FNP Final Safety Analysis Report for this position, nor is there any regulatory requirement for maintaining this position as part of the site's emergency planning basis. The type of fires for which this equipment would be used will be addressed by offsite fire responders with whom FNP maintains support agreements. SNC states that since the equipment operated by this position is not used to fight fires affecting actual plant equipment, there is no impact to the performance of the Fire Fighting function as the result of eliminating this position from minimum FNP on-shift staffing requirements in the FNP SEP Annex.

Organizational structures and the on-shift staffing tables are provided in the FNP SEP Annex.

The standard definition for ERO augmentation is 75 minutes from event declaration in the proposed SNC SEP. Since the FNP augmentation time is already defined as 75 minutes from declaration of an Alert or higher classification, this does not constitute a change for FNP. Minimum augmentation staffing as depicted in Table 3 of the FNP Emergency Plan, Revision 64, is 19 personnel. As described in Tables 1 through 4 in Enclosure 2 of the letter dated June 9, 2016, the proposed minimum augmented ERO is listed for each emergency response facility (ERF) and consists of 13 personnel at the TSC, 14 personnel at the OSC, 17 personnel at the EOF, and 15 personnel at the JIC, for a total of 49 personnel.

In addition to the augmentation of an Emergency Director in the TSC within 75 minutes of the declaration of an Alert or higher classification, the proposed SNC SEP provides that an additional Emergency Director will be augmented in the EOF within 75 minutes of the declaration of an Alert or higher classification. The aspects of the Emergency Direction and Control function assigned to the Emergency Directors are clearly defined in the proposed SNC SEP. Under the proposed SNC SEP, within 75 minutes of the declaration of an Alert or higher classification, the Emergency Director in the control room is relieved by the TSC Emergency Director who assumes responsibility for classification and emergency exposure controls and the EOF Emergency Director who assumes responsibility for PARs, emergency notifications, and overall emergency management response. The proposed SNC SEP provides for the transfer of State and local notifications, including authority to approve the content of the notification form, directly to the EOF from the control room. The proposed change includes both sufficient

communications personnel to perform the communications and an Emergency Director with the authority to approve the content of the notification.

The FNP Emergency Plan, Revision 64, provides for an on-shift offsite survey team and an augmented offsite survey team reporting within 75 minutes of declaration an Alert or higher classification. The proposed staffing for the SNC SEP augments a single offsite survey team within 75 minutes of the declaration of an Alert or higher classification, and maintains the augmentation by the EOF Field Team Coordinator and Field Team Communicator positions as currently provided. A third augmented individual, together with the onsite/out-of-plant RP technician will make up the second offsite field monitoring team. Onsite monitoring will then become a function of the augmenting RP personnel in the OSC. These survey/field monitoring teams are typically used to verify the status of a potential release and validate the dose assessment model. Dose assessment model validation strategies developed and implemented by the EOF staff typically include directing one team to track the leading edge of the radiological plume, and one team to define the lateral edges of the plume and determine plume centerline radiological conditions. If the field monitoring team survey data indicates a departure from the dose assessment model, the radiation surveys and air samples collected by these two field monitoring teams can be used to perform dose assessment calculations.

An additional chemistry technician will be augmented in the OSC within 75 minutes of the declaration of an Alert or higher classification to assist in performing chemistry sampling and analysis. The RP Supervisor position in the TSC will be staffed within 75 minutes of the declaration of an Alert or higher classification, relieving the Shift Manager/Emergency Director of the role of oversight of the on-shift dose assessor. The TSC will retain this task until relieved by the EOF Dose Assessment staff, which consists of the Dose Assessment Supervisor and Dose Analyst. There is no loss of function or impact on the timing for performing either of the tasks of dose assessment or required radiochemistry sampling by the proposed on-shift staffing provided in the SNC SEP.

The proposed SNC SEP provides for augmentation of maintenance discipline specific leads in the OSC, as well as an overall OSC Manager within 75 minutes of an Alert or higher classification. Two RP technicians and an RP/chemistry OSC lead will be augmented in the OSC within 75 minutes of the declaration of an Alert or higher classification to support the Protective Actions in-plant function.

Based on the above, the NRC staff concludes that SNC has defined on-shift responsibilities for FNP, provides adequate staffing to maintain initial accident response in key functional areas at all times, includes timely augmentation of response capabilities, and specifies the interfaces among various onsite and offsite response activities and support. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(2) and Evaluation Criteria of Section II.B of NUREG-0654 have been addressed adequately.

3.3.1.3 10 CFR 50.47(b)(3) and Evaluation Criteria of Section II.C of NUREG-0654 – Emergency Response Support and Resources

> Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's Emergency Operations Facility have been made, and other

organizations capable of augmenting the planned response have been identified.

The 10 CFR 50.47(b)(3) criteria and Evaluation Criteria of Section II.C of NUREG-0654 are addressed in portions of Section A, “Assignment of Responsibility”; Section B, “Emergency Response Organization (ERO)”; Section C, “Emergency Response Support and Resources”; Section H, “Emergency Facilities and Equipment”; and Section L, “Medical and Public Health Support,” of the proposed SNC SEP, along with portions of Section 1, “Introduction”; Section 2, “Organizational Control of Emergencies”; and Section 5, “Emergency Facilities and Equipment,” of the proposed FNP SEP Annex. NSIR/DPR-ISG-01 provides further guidance to address the new requirements in Appendix E, Section IV.A.7, of the 2011 Final Rule regarding the identification of offsite resources to support onsite emergency response activities during an event involving hostile action. NUREG-0654, Section II.C, “Emergency Response Support and Resources,” addresses provisions for adequate emergency response support and resources in general.

Once an emergency has been declared, the Emergency Director has the authority and responsibility to request aid from offsite organizations, whether they are other SNC-operated nuclear power plants; Federal, State, and local organizations; or private organizations.

Resources of the designated Federal agencies are outlined in the SNC SEP.

The EOF, which is located in Birmingham, Alabama, is capable of accommodating designated SNC personnel and Federal, State, and local responders, including members of an NRC Site Team and the Federal Emergency Management Agency (FEMA) representatives. It is anticipated that representatives from the States of Georgia, South Carolina, Alabama, or Florida may be dispatched to the EOF for an event at applicable SNC plants. Responders from State and local agencies have access to plant parameters through the various data displays available in the EOF. SNC will also maintain space for members of an NRC Site Team and Federal, State, and local responders at a location near the plant to conduct briefings with emergency response personnel and communications with the licensee and offsite emergency responders.

FNP has a laboratory for analysis of radioactive samples. In addition, external facilities for counting and analyzing samples, and for dosimetry processing, can be provided by other SNC-operated facilities, including the Georgia Power Company Central Laboratory. Outside analytical assistance may also be requested from State and Federal agencies or through contracted vendors. The U.S. Department of Energy, through the Radiological Assistance Program, has access to any national laboratory.

The SNC SEP notes that written agreements have been developed that establish the extent of operations between SNC-operated plants and other support organizations that have an emergency response role consistent with this plan. These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. Non-SNC support groups (fire, medical, voluntary assistance, etc.) specific to the FNP site are listed in the FNP SEP Annex (Sections 1.3 through 1.7, Section 2.3, and Section 5.8).

Based on the above, the NRC staff concludes that SNC has identified the arrangements for requesting and effectively using assistance resources and arrangements to accommodate State and local staff at the licensee's EOF have been made, and SNC has identified other organizations capable of augmenting the planned response. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(3) and Evaluation Criteria of Section II.C of NUREG-0654 have been addressed adequately.

3.3.1.4 10 CFR 50.47(b)(4) and Evaluation Criteria of Section II.D of NUREG-0654 – Emergency Classification System

> A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Section D, "Emergency Classification System," of the SNC SEP provides an overall discussion regarding classification of emergencies and the basis for emergency classification, while Appendix B, "Emergency Action Level (EAL) Scheme," of the FNP SEP Annex will reflect the plant's specific EAL scheme matrix for event initiating conditions used to determine an EAL. The current EAL scheme is based on the Nuclear Energy Institute (NEI) document NEI 99-01, Revision 4, "Methodology for Development of Emergency Action Levels," January 2003 (Reference 15), and was approved by NRC letter dated April 30, 2007 (Reference 16).

Based on the above, the NRC staff concludes that an acceptable emergency classification and action level scheme is currently in place, the bases of which include facility system and effluent parameters in use by FNP, Units 1 and 2. Therefore, the NRC staff has concluded that the requirements of 10 CFR 50.47(b)(4) and Evaluation Criteria of Section II.D of NUREG-0654 have been addressed adequately.

3.3.1.5 10 CFR 50.47(b)(5) and Evaluation Criteria of Section II.E of NUREG-0654 – Notification Methods and Procedures

> Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

The 10 CFR 50.47(b)(5) criteria and Evaluation Criteria of Section II.E of NUREG-0654 are addressed in portions of Section E, "Notification Methods and Procedures," of the proposed SNC SEP, along with Appendix D, "Supporting Plans & Implementing Procedures," of the proposed FNP SEP Annex.

SNC has established procedures for notification, by FNP of State and local response organizations, and for notification of licensee ERO personnel.

A dedicated emergency notification network (ENN) will normally be used to accomplish State and local notifications. Backup means of communication are described in Section F, "Emergency Communications," of the SNC SEP. State and local agencies listed in Section 4, "Emergency Measures," of the FNP SEP Annex will be notified within 15 minutes of the following:

- initial declaration of an emergency classification,
- emergency classification change, and
- the issuance of, or change to, a PAR.

In conjunction with State and local authorities, SNC-operated plants have established the contents of the initial and subsequent notification message forms to be used during an emergency. Once transmitted to the OROs, the receipt of this information is confirmed using a dedicated communications link.

The Emergency Director is responsible for declaring the appropriate emergency classification and then notifying plant personnel of the emergency declaration in accordance with procedures. This notification may consist of the use of the plant emergency alarm, announcements over the plant public address system, or activation of the recall system. ERO personnel respond to their assigned ERFs upon notification of an Alert or higher classification. A means to provide early notification and clear instruction to the populace within the 10-mile plume exposure pathway EPZ have been established. Prompt alerting and notification of the public within the plume exposure pathway EPZ is the obligation of State and local government or other responsible authority. The responsibility for ensuring the means exist to carry out this purpose rests with SNC. An overview of these means is listed in the proposed FNP SEP Annex. The design objective for the alert and notification system (ANS) is to meet the acceptance criteria provided in a subsequent section of the FEMA-approved design report for the FNP site.

State and local authorities have developed procedures and messages to be provided to the public in the event of an emergency at an SNC-operated nuclear power plant. Details of these procedures and messages are in the appropriate State and local REP plans.

Based on the above, the NRC staff concludes that SNC has established provisions for: notification by FNP of State and local response organizations and of licensee emergency personnel, the content of initial and followup messages to response organizations, and means to provide early notification and clear instruction to the populace within the plume exposure pathway EPZ. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(5) and Evaluation Criteria of Section II.E of NUREG-0654 have been addressed adequately.

3.3.1.6 10 CFR 50.47(b)(6) and Evaluation Criteria of Section II.F of NUREG-0654 – Emergency Communications

> Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

The 10 CFR 50.47(b)(6) criteria and Evaluation Criteria of Section II.F of NUREG-0654 are addressed in portions of Section F, "Emergency Communications," of the proposed SNC SEP,

along with portions of Section 4, “Emergency Measures,” and Section 5, “Emergency Facilities and Equipment,” of the proposed FNP SEP Annex.

Several modes of reliable communication are available, during both normal and emergency conditions, to transmit and receive information among the control room, TSC, OSC, EOF, and other locations onsite and offsite, including the JIC near the FNP site. Reliable primary and backup means of communication have been established and are provided in the FNP SEP Annex. FNP maintains the capability to make initial notifications to the designated offsite agencies on a 24-hour per day basis. Offsite notifications can be made to State and local warning points and emergency operations centers (EOCs) from the control room and EOF using the ENN. State and local warning points are continuously staffed. Provisions exist for continuous communications with State and local governments within the plume exposure pathway EPZ, as detailed above.

SNC has established communications systems to provide reliable communications with Federal agencies. Communication with the NRC is on the Federal Telecommunications System (FTS) telephone network, which connects the FNP, Units 1 and 2, control room and the EOF with the NRC Operations Center. Commercial telephone lines serve as the backup communications means with the NRC. Communication with other Federal agencies is primarily by commercial telephone, with alternate systems being utilized as needed. FNP also has reliable communications with two-way radios for communication with field survey teams.

FNP uses an automated ERO Notification System to rapidly notify members of the ERO. The system is designed with redundant power and with geographic separation.

Communications have been established between the primary and backup medical hospitals and transportation services with SNC-operated plants, including FNP. Communication between FNP and the Southeast Alabama Medical Center in Dothan, Alabama, or the University of Alabama Hospital in Birmingham, Alabama, is by commercial telephone. Request for ambulance support will be made by the control room or site security to the Houston County 911 Center, Houston County EOC, or the Incident Command Post, as applicable, based on the nature and timing of the event.

Communications tests will be conducted on the frequency specified in the SNC SEP.

Based on the above, the NRC staff concludes that SNC has established provisions for prompt communications among principal response organizations to emergency personnel and to the public. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(6) and Evaluation Criteria of Section II.F of NUREG-0654 have been addressed adequately.

3.3.1.7 10 CFR 50.47(b)(7) and Evaluation Criteria of Section II.G of NUREG-0654 – Public Education and Information

> Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical

location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

The 10 CFR 50.47(b)(7) criteria and Evaluation Criteria of Section II.G of NUREG-0654 are addressed in portions of Section B, “Emergency Response Organization (ERO)”; Section G, “Public Education and Information”; and Section H, “Emergency Facilities and Equipment,” of the proposed SNC SEP, along with portions of Section 2, “Organizational Control of Emergencies,” and Section 5, “Emergency Facilities and Equipment,” of the proposed FNP SEP Annex.

The goal of the public information program is to acquaint the general public with the emergency plans for FNP and actions they should take in the event of a plant emergency. Emergency information is disseminated each calendar year for residents in the plume exposure pathway EPZ. SNC will provide education and emergency information to the public consisting of the following:

- The release of information to the public through the dissemination of timely, accurate emergency communications,
- The orderly flow of emergency information during the recovery period, and
- Providing public education and information for the distribution of EP materials to residents and transient populations.

SNC uses a number of ways to communicate the information to the plume exposure pathway EPZ population. These means are developed in coordination with respective offsite agencies. Any proposed change in the method of dissemination of emergency information to the public must be coordinated and discussed with, and agreed upon by, appropriate State and local offsite emergency officials prior to implementation of the change.

After the initial notification of a declaration of an Alert or higher classification, the Public Information Director will coordinate with the EOF Emergency Director and affected OROs to determine whether to activate the JIC. Upon the decision to activate the JIC, the Public Information Director and JIC staff transfer from the Corporate Media Center (CMC) to the site-specific JIC. The CMC, located at the Atlanta/Birmingham corporate headquarters building of Georgia Power Company/Alabama Power Company, is the official location for coordination of emergency communications response until the site-specific JIC has been activated. The FNP JIC is located at the Houston County Juvenile Court Services Building in Dothan, Alabama.

Once the JIC is staffed, the Public Information Director will manage the emergency communications response from the JIC in coordination with the ORO Public Information Officers (PIOs). Site-specific JIC information is provided in the FNP SEP Annex.

The Nuclear Spokesperson speaks on behalf of SNC, providing plant status updates during news briefings. The Public Response Staff reports to the Public Response Coordinator and is responsible for coordinating and developing responses to rumors and public inquiry. Press briefings will be conducted to keep the media informed of events and activities relating to the emergency. Briefings will provide the most current, up-to-date information about events and response to the incident. PIOs from offsite agencies responding to the emergency will be encouraged to participate in the briefings to discuss their particular activities.

A program will be offered each calendar year to acquaint the news media with the methodology for obtaining information during an emergency and with overall EP at SNC-operated nuclear power plants, as appropriate. Training will include information about the plant, emergency response, and the role of the JIC, as well as opportunities to participate in drill activities. SNC has defined its role in providing information to the public on a periodic basis as providing information on how it will be notified and what its initial actions should be in an emergency, establishing the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations), and that procedures for coordinated dissemination of information to the public have been established.

In the letter dated August 31, 2015, SNC proposed a change to the JICs, as described in the current respective plant emergency plans, to incorporate an SNC standard approach for a JIC/Joint Information System. The proposed change would consolidate the JICs into two central locations at the existing CMCs: one in Birmingham, Alabama, and the other in Atlanta, Georgia, until such time as the near site JIC could be established. The proposed change would also standardize the media response organization throughout the SNC sites and designate an augmentation time of within 75 minutes of an Alert or higher declaration for JIC minimum staffing. In its February 17, 2016, letter responding to NRC RAIs, dated December 2, 2015, SNC stated that it had decided not to propose these changes to the JIC as originally described to the NRC in Enclosure 3 of the SNC submittal on August 31, 2015. SNC's current practice for coordination and dissemination of information to the public via the near site JICs will remain unchanged in the proposed SNC SEP. In the letter dated February 17, 2016, SNC provided a revised copy of the original submittal, deleting Enclosure 3, "Corporate Joint Information Center Staffing – Detailed Description and Technical Evaluation," and reflecting the changes back to the JICs as described in the current respective plant emergency plans. SNC notified the States of Georgia and Alabama of the changes to the LAR by transmitting a copy of the February 17, 2016, letter and its enclosures to designated State officials.

Based on the above, the NRC staff concludes that SNC has established provisions for adequate public education and information to support the emergency response. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(7) and Evaluation Criteria of Section II.G of NUREG-0654 have been addressed adequately.

3.3.1.8 10 CFR 50.47(b)(8) and Evaluation Criteria of Section II.H of NUREG-0654 – Emergency Facility and Equipment

> Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

The 10 CFR 50.47(b)(8) criteria and Evaluation Criteria of Section II.H of NUREG-0654 are addressed in portions of Section H, "Emergency Facilities and Equipment," of the proposed SNC SEP, along with portions of Section 5, "Emergency Facilities and Equipment," of the proposed FNP SEP Annex. NSIR/DPR-ISG-01 provides further guidance to supplement the existing guidance in NUREG-0654 regarding the use of alternative facilities when primary ERFs are unavailable because of hostile action. NUREG-0654, Section II.H, "Emergency Facilities and Equipment," addresses provisions for adequate ERFs and equipment in general.

The TSC for FNP is located immediately north of the Unit 2 control room area. An OSC is provided, which consists of the break room located adjacent to the TSC, from which emergency operations support will be provided. The EOF is a dedicated facility located in Birmingham, Alabama, which serves as the central location for management of SNC's offsite emergency response, coordination of radiological assessment, and management of initial recovery operations. The TSC, OSC, and EOF are required to be activated within 75 minutes following the declaration of an Alert or higher classification. However, these ERFs may be activated at the discretion of the Emergency Director. The SNC SEP, FNP SEP Annex, and associated emergency plan implementing procedures (EPIPs) have been established to ensure timely activation of these ERFs.

An alternative facility for the staging of ERO personnel has been designated for FNP and is located in the Alabama Power Company Old Crew headquarters building in Headland, Alabama. During a security-related event, or other event that precludes onsite access, the TSC and OSC ERO will be directed to an alternate facility.

FNP has installed monitoring instrumentation for geophysical monitoring, radiation monitoring, process monitoring, and fire protection monitoring. Geophysical monitors include meteorological instrumentation, seismic monitoring, and hydrological monitors. Radiological monitors and sampling include a radiation monitoring system, liquid and gaseous sampling systems, a laboratory facility, and portable radiation monitoring equipment. Process monitors include a Plant Monitoring/Information System and the Safety Parameter Display System. There is a fire detection system designed to detect products of combustion or heat in designated areas of the plant. The fire alarm communication systems and subsystems are located at strategic points throughout the plant to warn personnel of a fire or other emergency conditions.

FNP has made provisions to access data from the following offsite sources of monitoring and analysis equipment: geophysical monitors, radiological environmental monitors, sampling and monitoring equipment, and laboratory facilities.

Emergency facilities and equipment are inspected and inventoried using appropriate administrative or department procedures. These inventories will include requirements that provisions are in place to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and as needed. These procedures provide information on location and availability of emergency equipment and supplies.

The FNP site has a meteorological tower equipped with instrumentation for continuous reading of wind speed, wind direction, ambient air temperature, and differential air temperature. This information can be accessed in the control room, TSC, and EOF, and is transmitted by the Emergency Response Data System (ERDS) for NRC use.

Emergency kits are available at FNP. Designated plant or department procedures identify the equipment in the various emergency kits.

The FNP site has designated a point as the location for receipt and analysis of field monitoring team environmental samples. Sampling and analysis equipment is available for quantitative

activity determination of marine and air samples, and qualitative activity determination of terrestrial samples.

Based on the above, the NRC staff concludes that SNC has established provisions for adequate emergency facilities and equipment to support the emergency response. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(8) and Evaluation Criteria of Section II.H of NUREG-0654 have been addressed adequately.

3.3.1.9 10 CFR 50.47(b)(9) and Evaluation Criteria of Section II.I of NUREG-0654 – Accident Assessment

> Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

The 10 CFR 50.47(b)(9) criteria and Evaluation Criteria of Section II.I of NUREG-0654 are addressed in portions of Section I, “Accident Assessment,” of the proposed SNC SEP.

FNP has a comprehensive set of plant system and effluent monitors, as required by the plant’s Final Safety Analysis Report. FNP has identified values characteristic of off-normal values and accidents, and identified the plant parameter values that correspond to the example initiating conditions in NEI 99-01, Revision 4.

Plant system and effluent parameter values are used to determine accident severity and subsequent emergency classification. To adequately assess the emergency condition, applicable ERFs have the equipment and instrumentation necessary to monitor essential plant information, except where local monitoring is required. Evaluation of plant conditions is accomplished by monitoring plant parameters from both the control room and within the plant. The resources available to provide initial and continuing information for accident assessment throughout the course of an event include plant parameter display systems, liquid and gaseous sampling system, area and process radiation monitoring systems, and accident radiation monitoring systems.

FNP uses an offsite dose assessment model that estimates doses from radiological accidents for comparison with the U.S. Environmental Protection Agency (EPA) Protective Action Guides (PAGs) (Reference 17) and acute health effect thresholds. The model estimates reactor source term, atmospheric transport, and doses resulting from radiological releases, and can be used to assist in making protective action determinations. The system supplements assessments based on plant conditions. The dose assessment model is available in the control room, TSC, and EOF for use in projecting potential offsite radiological doses. The offsite dose assessment program addresses the relationship between effluent monitor readings, onsite and offsite exposures, and contamination for various meteorological conditions.

Dose projections can also be made during a release through use of sample data in situations where effluent monitors are either off-scale, inoperative, or the release occurs by an unmonitored flow path. In the absence of effluent sample data, a computerized offsite dose projection can be performed by specifying the accident category as a default.

The FNP site has a meteorological monitoring system sufficient to acquire and evaluate meteorological information for accident assessment. This information can be accessed in the control room, TSC, and EOF, and is transmitted by the ERDS for NRC use.

The ability exists to take offsite air samples and to directly measure gamma dose rates from a radioactive material release. The capability to take offsite soil, water, and vegetation samples is provided by a minimum of two field monitoring teams. The initial environmental surveys involve measurements to confirm or modify the dose projections based on plant parameters. Subsequent environmental monitoring efforts will be aimed at further defining the offsite consequences, including instituting an expanded monitoring program to enable prompt assessments of any subsequent releases from the plant. FNP has instrumentation, procedures, and trained personnel with the expertise to make rapid assessments of the actual or potential magnitude and location of any radiological hazards through liquid or gaseous release pathways.

Field monitoring team equipment has the capability to detect and measure airborne radioiodine in the presence of noble gases that has the capability to detect and measure radioiodine concentrations in air in the plume exposure pathway EPZ as low as 10^{-7} µCi/cc (microcuries per cubic centimeter) under field conditions.

Based on the above, the NRC staff concludes that SNC has established adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(9) and Evaluation Criteria of Section II.I of NUREG-0654 have been addressed adequately.

3.3.1.10 10 CFR 50.47(b)(10) and Evaluation Criteria of Section II.J of NUREG-0654 – Protective Response

> A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

The 10 CFR 50.47(b)(10) criteria and Evaluation Criteria of Section II.J of NUREG-0654 are addressed in portions of Section E, “Notification Methods and Procedures,” and Section J, “Protective Response,” of the proposed SNC SEP, along with Appendix A of the proposed FNP SEP Annex. NSIR/DPR-ISG-01 provides further guidance regarding protective actions for onsite personnel during hostile action. NUREG-0654, Section II.J, “Protective Response,” addresses, in general, the provisions for developing a range of protective actions for emergency workers and other onsite individuals.

Personnel within the Protected Area are notified of an emergency declaration or escalation of an emergency as described in Section 3.3.1.5 of this safety evaluation. Provisions are made to alert personnel in high noise areas and outbuildings within the Protected Area and Owner Controlled Area.

Personnel accountability is mandatory at the Site Area Emergency or General Emergency classification. Accountability may be initiated at other times at the discretion of the Emergency Director to support worker safety. Accountability of personnel within the Protected Area is accomplished within 30 minutes of the declaration of Site Area Emergency or higher classification, and maintained continuously thereafter, using Protected Area boundary access control as described in the Physical Security Plan.

Evacuation of personnel is usually conducted immediately after accountability if a Site Area Emergency or General Emergency has been declared, and no impediments to site evacuation exist. Evacuation shall commence as directed by the Emergency Director. Requirements for radiological monitoring of personnel evacuated from the site for external radiation exposure are contained in SNC SEP Section K, “Radiological Exposure Control.” Details on the decontamination of non-essential evacuees are in the FNP EPIPs.

If a site evacuation is required, personnel are directed to either assemble within designated assembly areas, or immediately leave the site and directed to either proceed to their homes or reassemble at designated locations. Visitors to the plant will assemble with and follow the instructions of their escorts. Personal transportation will normally be used and established evacuation routes will be followed. However, personnel without transportation will be identified and provided transportation as necessary.

Personnel evacuated from the site will be monitored for contamination, if needed, by portal monitors as they exit the Protected Area, or with portable friskers in designated assembly areas, or at offsite reception centers.

Onsite protective actions for routine and emergency conditions are detailed in the FNP’s Radiation Protection Program. The FNP site maintains an inventory of respiratory protection equipment, anti-contamination clothing, and KI that is available to emergency workers remaining onsite. During an emergency, protective actions would be taken to minimize radiological exposures or contamination affecting onsite personnel.

PARs are provided by SNC to the offsite agencies responsible for implementing protective actions for the public within the plume exposure pathway EPZ. The Emergency Director will approve licensee-developed PARs. The PAR decisionmaking flowcharts are plant-specific in nature and are provided in the FNP EPIPs. FNP has the capability to provide State and local agencies with a PAR for beyond the plume exposure pathway EPZ, if warranted. Plant conditions, projected dose and dose rates, and field monitoring data are communicated to offsite agencies responsible to assist them in developing parallel assessments.

An evacuation time estimate (ETE) report has been performed for the FNP site, which provides estimates of the time required to evacuate resident and transient populations surrounding the plant for various times of the year under favorable and adverse conditions. ETEs for evacuation

of the plume exposure pathway EPZ surrounding the FNP site are summarized in Appendix A to the FNP SEP Annex, and detailed in the ETE report.

FNP has maps depicting local roads, primary evacuation travel routes, and the plume exposure pathway EPZ. Maps are also available that show the population distribution within the FNP Plume Exposure Pathway EPZ, and are described in the FNP SEP Annex.

In the event of a serious emergency at the FNP site, the primary means for alerting the public will be by the FEMA-approved ANS referenced in Section 4.2, "Alert and Notification System (ANS)," of the FNP SEP Annex. The FNP SEP Annex also has a FEMA-approved backup notification system in the event of a loss of the primary ANS.

Plant conditions, projected dose and dose rates, field monitoring team data, and ETE values are evaluated to develop PARs for preventing or minimizing exposure to the public. There are various types of protective actions that can be recommended to the State and counties, which may include evacuation, shelter in-place, monitor and prepare, and the use of KI in accordance with State plans and policy.

Based on the above, the NRC staff concludes that SNC has developed a range of protective actions for the plume exposure pathway EPZ for emergency workers and the public, and guidelines for the choice of protective actions for onsite personnel during an emergency, consistent with Federal guidance. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(10) and Evaluation Criteria of Section II.J of NUREG-0654 have been addressed adequately.

3.3.1.11 10 CFR 50.47(b)(11) and Evaluation Criteria of Section II.K of NUREG-0654 – Radiological Exposure Control

> Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

The 10 CFR 50.47(b)(11) criteria and Evaluation Criteria of Section II.K of NUREG-0654 are addressed in portions of Section K, "Radiological Exposure Control," of the proposed SNC SEP.

Under normal operating conditions, SNC-operated plants maintain personnel exposure control programs in accordance with 10 CFR Part 20, "Standards for Protection Against Radiation." The Emergency Director has responsibility for authorizing personnel exposure levels under emergency conditions using the EPA PAGs. In emergency situations, workers may receive exposure under a variety of circumstances in order to assure safety and protection of others and of valuable property.

SNC RP groups have the equipment and personnel to provide 24-hour capability to determine and control radiation exposures of emergency organization personnel to include radiation detection devices, personnel monitoring, and record keeping. In an emergency situation, onsite personnel and offsite support personnel may be issued monitoring devices. Exposure records will be maintained for emergency response personnel who are issued dosimetry.

During normal conditions or an emergency, guidelines to follow for contamination limits are established by the FNP Radiation Protection Program. Facilities and supplies for decontaminating personnel are available at various plant locations. Personnel leaving the radiological controlled area (RCA) or a radiologically contaminated area will be monitored for contamination. During emergencies, other onsite personnel will be checked for contamination as necessary. Contaminated areas are isolated as restricted areas with appropriate radiological protection and access control. Measures will be taken to control onsite access to potentially contaminated potable water and food supplies.

As discussed in SEP Section J, "Protective Response," of the SNC SEP, nonessential onsite personnel may be evacuated to an offsite reception center or assembly area. Radiological controls personnel at those locations will monitor evacuees and determine the need for decontamination.

Based on the above, the NRC staff concludes that SNC has established the means for controlling radiological exposures for emergency workers in an emergency to include exposure guidelines consistent with the EPA PAG Emergency Worker and Lifesaving Activity limits. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(11) and Evaluation Criteria of Section II.K of NUREG-0654 have been addressed adequately.

3.3.1.12 10 CFR 50.47(b)(12) and Evaluation Criteria of Section II.L of NUREG-0654 – Medical and Public Health Support

> Arrangements are made for medical services for contaminated injured individuals.

The 10 CFR 50.47(b)(12) criteria and Evaluation Criteria of Section II.L of NUREG-0654 are addressed in portions of Section L, "Medical and Public Health Support," of the proposed SNC SEP and Section 8, "Medical Support," of the FNP SEP Annex.

FNP maintains onsite first aid supplies and equipment necessary for the treatment of contaminated and/or injured persons.

In addition to the onsite first aid response, arrangements have been made with local hospitals for treatment and evaluation of serious injuries or sicknesses. The hospitals are equipped, and hospital personnel trained, to address radiologically contaminated, injured individuals. Training of medical support personnel at the agreement hospitals includes: basic training on the nature of radiological emergencies, diagnosis and treatment, and followup medical care. Plant personnel are available to assist medical personnel with decontamination, radiation exposure, and radiological contamination control.

Arrangements have been made by FNP for ambulance transport of persons with injuries involving radioactivity to designated hospitals. Such services are available on a 24-hour per day basis and are confirmed by letters of agreement.

Based on the above, the NRC staff concludes that SNC has made arrangements for medical services for contaminated injured individuals. Therefore, the NRC staff concludes that the

requirements of 10 CFR 50.47(b)(12) and Evaluation Criteria of Section II.L of NUREG-0654 have been addressed adequately.

3.3.1.13 10 CFR 50.47(b)(13) and Evaluation Criteria of Section II.M of NUREG-0654 – Recovery and Reentry

> General plans for recovery and reentry are developed.

The 10 CFR 50.47(b)(13) criteria and Evaluation Criteria of Section II.M of NUREG-0654 are addressed in portions of Section M, "Recovery and Reentry Planning and Post-Accident Operations," of the proposed SNC SEP.

Guidance for determining the transition from an emergency to a recovery organization is provided in the FNP EPIPs. The composition of the recovery organization will depend on the nature of the accident and the conditions following the accident. The SNC SEP addresses general principles that serve as guides for developing a Recovery Plan. It is the responsibility of the Emergency Director to determine that the facility and surroundings are safe for reentry. The Emergency Director will designate a Recovery Manager to constitute the recovery organization. Guidelines as applicable to the specific situation will be addressed prior to terminating the emergency and are delineated in the SNC SEP. Upon termination of the emergency phase, and at the discretion of the Emergency Director following consultation with offsite authorities, the SNC ERO will shift to the recovery organization.

The Recovery Manager will structure the recovery organization to accomplish the general objectives listed in the SNC SEP. Members of the ERO will be informed when recovery is initiated. The recovery organization may be structured similar to the ERO, with additional modifications depending on the nature of the accident, post-accident conditions, and other factors. The SNC SEP Figure M.2 is a schematic diagram representing the key functional areas of a typical long-term recovery operation.

SNC anticipates that the Federal Radiological Monitoring and Assessment Center will make a total population exposure calculation, based on estimated dose rates and population representing exposed areas.

Based on the above, the NRC staff concludes that SNC has developed general plans for recovery and reentry. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(13) and Evaluation Criteria of Section II.M of NUREG-0654 have been addressed adequately.

3.3.1.14 10 CFR 50.47(b)(14) and Evaluation Criteria of Section II.N of NUREG-0654 – Exercises and Drills

> Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

The 10 CFR 50.47(b)(14) criteria and Evaluation Criteria of Section II.N of NUREG-0654 are addressed in portions of Section N, “Exercises and Drills,” of the proposed SNC SEP. NSIR/DPR-ISG-01 provides further guidance regarding the incorporation of a wide range of scenario elements into a licensee’s drill and exercise programs. NUREG-0654, Section II.N, “Exercises and Drills,” addresses provisions for conducting drills and exercises in general.

FNP will conduct a biennial EP exercise and additional periodic drills. An exercise is an event that tests integrated capability, and a major portion of the basic elements of EP plans and organizations. FNP will conduct an emergency response exercise to demonstrate the effectiveness of the SNC SEP on a frequency determined by the NRC. Exercises may include mobilization of State and local personnel and resources, and are intended to verify their capability to respond to an accident. Joint exercises shall be conducted on a frequency described in NRC/FEMA guidance.

FNP shall ensure adequate emergency response capabilities are maintained during the interval between biennial exercises by conducting drills, including at least one drill involving a combination of some of the principal functional areas of the licensee’s onsite emergency response capabilities. Drills, including the expected frequency, have been established for the following: communications, fire response, medical emergency, environs (radiation monitoring), RP (sampling), accountability, alternative facilities, rapid escalation event, minimum/no release scenarios, and multi-site events.

A scenario, prepared in advance, governs the conduct of exercises and drills. During the exercise planning cycle, FNP will vary the content of exercise scenarios to provide ERO members the opportunity to demonstrate proficiency in key skills necessary to respond to several specific scenario elements.

A critique shall be conducted at the conclusion of the exercise to evaluate the organization’s ability to respond as called for in the SNC SEP. Qualified personnel will observe and perform a critique of exercises and drills. Biennially, representatives from the NRC observe and evaluate the licensee’s ability to conduct an adequate self-critical critique. For partial and full offsite participation exercises, FEMA, will observe, evaluate, and critique ORO performance in meeting designated objectives.

The critique and evaluation process is used to identify areas of the SNC Emergency Preparedness Program that require improvement. The SNC EP group is responsible for evaluating recommendations and comments on the SNC SEP and site-specific annexes, determining which items will be incorporated into the program or require corrective actions, and for scheduling, tracking, and evaluating item resolution. Whenever exercises or drills indicate deficiencies in the SNC SEP, site-specific annexes, corresponding EPIPs, or training lesson plans, such documents will be revised as necessary. The results of exercise critiques, particularly comments on identified areas that require improvement or reevaluation, will be submitted to the FNP EP Supervisor or designee, for review. The EP Supervisor or designee will consult with responsible department heads and assign corrective action activities, as appropriate.

Based on the above, the NRC staff concludes that SNC will conduct periodic exercises to evaluate major portions of emergency response capabilities, conduct periodic drills to develop

and maintain key skills, and adequately correct deficiencies identified as a result of exercises or drills. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(14) and Evaluation Criteria of Section II.N of NUREG-0654 have been addressed adequately.

3.3.1.15 10 CFR 50.47(b)(15) and Evaluation Criteria of Section II.O of NUREG-0654 – Radiological Emergency Response Training

> Radiological emergency response training is provided to those who may be called on to assist in an emergency.

The 10 CFR 50.47(b)(15) criteria and Evaluation Criteria of Section II.O of NUREG-0654 are addressed in portions of Section O, "Radiological Emergency Response Training," of the proposed SNC SEP.

To achieve and maintain an acceptable level of preparedness, the ERO Training Program ensures the training, qualification, and requalification of individuals who may be called on for assistance during an emergency. Offsite training is also provided to support organizations that may be called on to provide assistance onsite in the event of an emergency. In addition to general and specialized classroom training, members of the SNC ERO receive periodic performance-based emergency response training, which is generally provided by participation in a performance drill or exercise.

SNC ERO personnel who are responsible for implementing the SNC SEP and respective site-specific annexes receive specialized training. The training program for ERO personnel is developed based on the requirements of Appendix E to 10 CFR Part 50 and position-specific responsibilities. Requalification training for onsite ERO members consists of an annual review of the SNC SEP in the form of a general overview. In addition to the SNC SEP overview training, personnel assigned to ERO functions will receive training specific to their position. Besides general ERO training, SNC has also identified the following subject area training: active senior licensed control room personnel; radiological field monitoring teams; fire brigade; operations, maintenance, chemistry and RP; medical support; and training for news media.

Individuals assigned as first aid responders shall maintain qualifications for first aid and cardiopulmonary resuscitation training.

Based on the above, the NRC staff concludes that SNC has established radiological emergency response training for those who may be called on to assist in an emergency. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(15) and Evaluation Criteria of Section II.O of NUREG-0654 have been addressed adequately.

3.3.1.16 10 CFR 50.47(b)(16) and Evaluation Criteria of Section II.P of NUREG-0654 – Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

> Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

The 10 CFR 50.47(b)(16) criteria and Evaluation Criteria of Section II.P of NUREG-0654 are addressed in portions of Section F, "Emergency Communications"; Section O, "Radiological Emergency Response Training"; and Section P, "Responsibility for the Preparedness Effort," of the proposed SNC SEP and in the EPIPs listed in Appendix D, "Supporting Plans & Implementing Procedures," of the proposed FNP SEP Annex.

Training for the EP staff at the FNP site consists of an initial and continuing training process.

The Vice President – Regulatory Affairs is responsible for the overall coordination of the corporate EP programs and emergency plans. This positions' direct report, the SNC EP Director, has governance and oversight responsibility for the SNC EP functional area across all SNC sites. The Vice President – Site is responsible for the EP aspects of the program at each plant. The FNP EP Supervisor is responsible for coordinating onsite EP activities and supports offsite EP activities in the plant vicinity.

Once per calendar year, the designated EP staff performs a review of the emergency plans for SNC. This review includes a comparison for consistency of emergency plans for a specific site, including the Physical Security Plan, and State and local REP plans, as appropriate. Approved changes to the proposed SNC SEP and proposed FNP SEP Annex will continue to be forwarded to key organizations and appropriate individuals who are responsible for implementing the plan.

The proposed SNC SEP and proposed FNP SEP Annex, agreements, and the EPIPs, will continue to be reviewed once per calendar year and updated as needed. These updates take into account changes identified by drills and exercises and the independent review.

An independent review of the EP Program is conducted as required by 10 CFR 50.54(t). The review will continue to include the proposed SNC SEP and proposed FNP SEP Annex, EPIPs and practices, training, readiness testing, equipment, and interfaces with offsite agencies. The results of the review, along with recommendations for improvements, are documented and reported to plant management and to appropriate offsite agencies.

A quarterly check of telephone numbers required to implement the proposed SNC SEP and FNP SEP Annex is performed and documented.

Based on the above, the NRC staff concludes that SNC has identified the responsibilities for plan development/review and for distribution of emergency plans, and that planners are properly trained. Therefore, the NRC staff concludes that the requirements of 10 CFR 50.47(b)(16) and Evaluation Criteria of Section II.P of NUREG-0654 have been addressed adequately.

3.3.2 Review of the Proposed SNC SEP and Proposed FNP SEP Annex using the Applicable Requirements of Section IV of Appendix E to 10 CFR Part 50

3.3.2.1 10 CFR Part 50, Appendix E, IV.A, “Organization”

The organization for coping with radiological emergencies is addressed as referenced in Sections 3.3.1.1 and 3.3.1.2 of this safety evaluation.

3.3.2.2 10 CFR Part 50, Appendix E, IV.B, “Assessment Actions”

The means to be used for determining the magnitude of, and continuously assessing the impact of, the release of radioactive materials is addressed in Section 3.3.1.9 of this safety evaluation.

3.3.2.3 10 CFR Part 50, Appendix E, IV.C, “Activation of Emergency Organization”

Both the entire spectrum of emergency conditions (to include emergency action levels) that involve alerting or activating progressively larger segments of the emergency organization and the communication steps to be taken to alert emergency personnel under each class of emergency are addressed in Sections 3.3.1.4 and 3.3.1.5.

3.3.2.4 10 CFR Part 50, Appendix E, IV.D, “Notification Procedures”

Administrative and physical means for notifying local, State and Federal officials and agencies, and agreements reached with these officials and agencies for the prompt notification of the public, are addressed in Sections 3.3.1.5 and 3.3.1.6 of this safety evaluation.

3.3.2.5 10 CFR Part 50, Appendix E, IV.E, “Emergency Facilities and Equipment”

Adequate provisions are made and described for emergency facilities and equipment is addressed in Sections 3.3.1.3 and 3.3.1.8 of this safety evaluation.

3.3.2.6 10 CFR Part 50 Appendix E.IV.F, “Training”

The program to provide for training and exercising of emergency plans to ensure licensee employees are familiar with their specific emergency duties, and the participation in training and drills by those whose assistance may be needed in the event of a radiological emergency, are addressed in Sections 3.3.1.14 and 3.3.1.15 of this safety evaluation.

3.3.2.7 10 CFR Part 50, Appendix E.IV.G, “Maintaining Emergency Preparedness”

Provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained are addressed in Sections 3.3.1.8 and 3.3.1.16.

3.3.2.8 10 CFR Part 50, Appendix E.IV.H, “Recovery

Criteria to be used to determine when reentry of the facility would be appropriate is addressed in Section 3.3.1.13 of this safety evaluation.

3.4 FEMA's Offsite Review

By letter dated July 5, 2016 (Reference 18), the NRC requested FEMA to provide it with an evaluation of whether the proposed SNC SEP changes would preclude offsite agencies from effectively implementing their approved REP plans. By letter dated August 9, 2016 (Reference 19), FEMA noted the proposed SNC SEP would have no significant impact to offsite response agencies and that FEMA continues to have reasonable assurance that the changes would not prevent offsite agencies from implementing their approved REP plans.

NRC Staff Conclusion

The NRC staff finds that the proposed changes in the SNC SEP and FNP SEP Annex continue to meet the standards in 10 CFR 50.47(b)(1) through (b) (16), and the requirements in Appendix E to 10 CFR Part 50, and that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at FNP. Therefore, the NRC staff concludes that the licensee's proposed SNC SEP, and FNP SEP Annex, contained in its application dated August 31, 2015, and as supplemented by letters dated February 17, 2016, April 8, 2016, June 9, 2016; and November 2, 2016, are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Alabama official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, the Commission wrote an environmental assessment, and pursuant to 51.35(a) and 51.119(a) published a finding of no significant impact in the *Federal Register* on February 17, 2017 (82 FR 11070). Accordingly, based upon the environmental assessment, the Commission has determined that issuance of this amendment will not have a significant effect on the quality of the human environment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, "Southern Nuclear Operating Company Joseph M. Farley Nuclear Plant Units 1 and 2; Edwin I. Hatch Nuclear Plant Units 1 and 2; Vogtle Electric Generating Plant Units 1 and 2; Vogtle Electric Generating Plant Units 3 and 4 Standard Emergency Plan," dated August 31, 2015 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML15246A045).

2. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, "Southern Nuclear Operating Company Joseph M. Farley Nuclear Plant Units 1 and 2; Edwin I. Hatch Nuclear Plant Units 1 and 2; Vogtle Electric Generating Plant Units 1 and 2; Vogtle Electric Generating Plant Units 3 and 4 Response to First Request for Additional Information Regarding Standard Emergency Plan," dated February 17, 2016 (ADAMS Package Accession No. ML16060A283).

3. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, "Southern Nuclear Operating Company Joseph M. Farley Nuclear Plant Units 1 and 2; Edwin I. Hatch Nuclear Plant Units 1 and 2; Vogtle Electric Generating Plant Units 1 and 2; Vogtle Electric Generating Plant Units 3 and 4 Response to Second Request for Additional Information Regarding Standard Emergency Plan," dated April 8, 2016 (ADAMS Package Accession No. ML16105A194).

4. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, "Southern Nuclear Operating Company Vogtle Electric Generating Plant Units 3 and 4 Corrected Submittal of the Assessment of Emergency Response Staffing In Accordance with License Condition 2.D.(12)(d)," dated May 13, 2016 (ADAMS Accession No. ML16146A724).

5. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, "Southern Nuclear Operating Company Joseph M. Farley Nuclear Plant Units 1 and 2; Edwin I. Hatch Nuclear Plant Units 1 and 2; Vogtle Electric Generating Plant Units 1 and 2; Vogtle Electric Generating Plant Units 3 and 4 Corrected Response to Second Request for Additional Information Regarding Standard Emergency Plan," dated May 26, 2016 (ADAMS Accession No. ML16147A294).

6. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, "Southern Nuclear Operating Company Joseph M. Farley Nuclear Plant Units 1 and 2; Edwin I. Hatch Nuclear Plant Units 1 and 2; Vogtle Electric Generating Plant Units 1 and 2; Vogtle Electric Generating Plant Units 3 and 4 Response to Third Request for Additional Information Regarding Standard Emergency Plan," dated June 9, 2016 (ADAMS Package Accession No. ML16167A468).

7. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, "Southern Nuclear Operating Company Joseph M. Farley Nuclear Plant Units 1 and 2; Edwin I. Hatch Nuclear Plant Units 1 and 2; Vogtle Electric Generating Plant Units 1 and 2; Vogtle Electric Generating Plant Units 3 and 4 Standard Emergency Plan Implementation Date," dated November 2, 2016 (ADAMS Accession No. ML16167A468).

8. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, NUREG-0654/FEMA-REP-1, Revision 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” November 1980 (ADAMS Accession No. ML040420012).

9. U.S. Nuclear Regulatory Commission, NSIR/DPR-ISG-01, “Interim Staff Guidance, Emergency Planning for Nuclear Power Plants,” dated November 20, 2011 (ADAMS Accession No. ML113010523).

10. Letter from U.S. Nuclear Regulatory Commission to Southern Nuclear Operating Company, Inc., “Joseph M. Farley, Units 1 and 2, Edwin I. Hatch, Units 1 and 2, and Vogtle Electric Generating Plant, Units 1, 2, 3, and 4 – Request for Additional Information (CAC Nos. MF6670, MF6671, MF6672, MF6673, MF6674, MF6675, and RP9516),” dated December 2, 2015 (ADAMS Accession No. ML15334A009).

11. Letter from U.S. Nuclear Regulatory Commission to Southern Nuclear Operating Company, Inc., “Joseph M. Farley, Units 1 and 2, Edwin I. Hatch, Units 1 and 2, and Vogtle Electric Generating Plant, Units 1, 2, 3, and 4 – Request for Additional Information (CAC Nos. MF6670, MF6671, MF6672, MF6673, MF6674, MF6675, and RP9516),” dated February 4, 2016 (ADAMS Accession No. ML16029A035).

12. Letter from U.S. Nuclear Regulatory Commission to Southern Nuclear Operating Company, Inc., “Joseph M. Farley, Units 1 and 2, Edwin I. Hatch, Units 1 and 2 and Vogtle Electric Generating Plant, Units 1, 2, 3, and 4 – Request for Additional Information (CAC Nos. MF6670, MF6671, MF6672, MF6673, MF6674, MF6675, and RP9516),” dated April 14, 2016 (ADAMS Accession No. ML16096A217).

13. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, “Joseph M. Farley Nuclear Plant On-Shift Staffing Analysis,” dated January 18, 2013 (ADAMS Accession No. ML13018A331)

14. Letter from Southern Nuclear Operating Company, Inc. to U.S. Nuclear Regulatory Commission, “Joseph M. Farley Nuclear Plant, Units 1 & 2, Edwin I. Hatch Nuclear Plant, Units 1 & 2, Vogtle Electric Generating Plant, Units 1 & 2, Revision to Emergency Plans,” dated May 6, 2015 (ADAMS Package Accession No. ML15138A238).

15. Nuclear Energy Institute (NEI) document NEI 99-01, Revision 4, “Methodology for Development of Emergency Action Levels,” January 2003 (ADAMS Accession No. ML041470143).

16. Letter from U.S. Nuclear Regulatory Commission to Southern Nuclear Operating Company, “Emergency Action Level Revisions for Southern Nuclear Operating Company, Inc., Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 (HNP); Joseph M. Farley Nuclear Plant, Units 1 and 2 (FNP); Vogtle Electric Generating Plant, Units 1 and 2 (VEGP) (TAC Nos. MC9459, MC9460, MC9457, MC9458, MC9461, and MC9462),” dated April 30, 2007 (ADAMS Accession No. ML071100068).

17. U.S. Environmental Protection Agency 400-R-92-001 “Manual of Protective Action Guides and Protective Actions for Nuclear Incidents,” May 1992.

18. Letter from U.S. Nuclear Regulatory Commission to Federal Emergency Management Agency regarding request from SNC for approval to adopt a standard emergency plan for the Joseph M. Farley, Edwin I. Hatch, and Vogtle Nuclear plant sites, dated July 5, 2016 (ADAMS Accession No. ML16176A150).

19. Letter from Federal Emergency Management Agency to U.S. Nuclear Regulatory Commission regarding review of proposed changes to SNC Standard Emergency Plan for impact to offsite response organizations plans, dated August 9, 2016 (ADAMS Accession No. ML16224A308).

Principal Contributors: R. Kinard, NSIR
M. Wasem, NSIR

Date: March 14, 2017