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April 25, 2016

Docket Nos.: 50-348
50-364

NL-15-2310

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

Joseph M. Farley Nuclear Plant – Units 1 and 2
Supplemental License Amendment Request to Revise Existing Facility Operating
License Commitments Regarding NFPA-805 Performance Based Standard
for Fire Protection for Light Water Reactor Generating Plants

Ladies and Gentlemen:

In accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) proposes to amend Renewed Facility Operating License (FOL) No. NPF-2 and NPF-8 for Joseph M. Farley Nuclear Plant (FNP) Units 1 and 2, respectively. This license amendment request (LAR) requests Nuclear Regulatory Commission (NRC) review and approval for a revision to existing obligations referenced in the FOL, NPF-2 and NPF-8.

By letter dated September 25, 2012, SNC submitted a LAR for Joseph M. Farley Nuclear Plant Units 1 and 2 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12279A235.) The amendment requested approval for adoption of a new fire protection licensing basis which complies with the requirements in Sections 50.48(a) and 50.48(c) to Title 10 to the Code of Federal Regulations (10 CFR), and the guidance in Regulatory Guide (RG) 1.205, Revision 1, Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants.

The original September 25, 2012 LAR submittal was supplemented by several Request for Additional Information (RAI) responses. The final of these RAI response letters was sent by letter dated August 29, 2014 (ADAMS Accession No. ML14246A523.) In addition to many LAR revisions provided in RAI responses, a revision to Attachment S, Modification and Implementation Items, was provided in the August 29, 2014 letter.

The NRC issued a safety evaluation report (SER) on March 10, 2015 (ADAMS Accession No. ML14308A048) regarding Transition to a Risk-Informed, Performance-Based Fire Protection Program in Accordance with 10 CFR 50.48(c). The SER included a statement that "the licensee shall implement the modifications to its facility, as described in Attachment S, Table S-2, "Plant

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Modifications Committed," of SNC letter NL-14-1273, dated August 29, 2014 to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017." This LAR provides justification for not performing a modification described in Table S-2 of Attachment S and two other clarifications in Table S-2.

Enclosure 1 to this letter provides the proposed FOL change, the basis for the proposed change, and Significant Hazards Considerations. SNC has evaluated the proposed FOL change and has determined that it does not involve a significant hazards consideration as defined in 10 CFR 50.92.

Enclosure 2 to this letter provides the revision to Attachment M, License Condition Changes. The marked up and clean-typed pages of the FOL are included in Enclosure 2, Attachment M. Enclosures 3 and 4 to this letter provide the revisions to Attachment S, Modifications and Implementation Items, and Attachment W, Fire PRA Insights. Enclosure 5 provides markup pages of Attachments S and W. Only the affected pages are included in Enclosure 5 to aide in identifying the changes to the attachments. Enclosures 3, 4 and 5 contain security-related information and should be withheld from public disclosure under 10 CFR 2.390.

In accordance with 10 CFR 50.91(b)(1), "State Consultation," a copy of this application and its reasoned analysis about no significant hazards considerations is being provided to the designated Alabama officials.

SNC requests approval of the proposed license amendments within 6 months of submittal date. The proposed changes would be implemented within 60 days of issuance of the amendment.

This letter contains no NRC commitments. If you have any questions, please contact Ken McElroy at (205) 992-7369.


Mr. C. R. Pierce states he is the Regulatory Affairs Director for Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and, to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,



C. R. Pierce
Regulatory Affairs Director

Sworn to and subscribed before me this 25th day of April, 2016.


Notary Public

My commission expires: 1/2/2018

CRP/JMC/lac

- Enclosures:
1. Basis for Proposed Change
 2. Attachment M, License Condition Changes
 3. Attachment S, Modification and Implementation Items
 4. Attachment W, Fire PRA Insights
 5. Markup pages of Attachments S and W

cc: Southern Nuclear Operating Company
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**Joseph M. Farley Nuclear Plant – Units 1 and 2
Supplemental License Amendment Request to Revise Existing Facility Operating
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for Fire Protection for Light Water Reactor Generating Plants**

Enclosure 1

Basis for Proposed Change

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1.0 Summary Description

This evaluation supports a request to amend Facility Operating Licenses (FOL), NPF-2 and NPF-8, for Joseph M. Farley Nuclear Plant (FNP) Units 1 and 2, respectively.

This proposed License Amendment Request (LAR) updates Attachments M, S, and W of the previously approved NFPA-805 LAR submittal for FNP. Specifically, the attachment revisions are based on three changes to Attachment S, Table S-2, which are discussed in this LAR.

This LAR will revise the FNP FOL, Appendix C, to require Southern Nuclear Operating Company (SNC) to implement modifications to its facility as described in Attachment S, Table S-2, "Plant Modifications Committed," of this SNC letter, NL-15-2310, to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017.

The guidance of the March 2, 2016 letter from the Nuclear Regulatory Commission (NRC) to the Nuclear Energy Institute (NEI) (ADAMS Accession No. ML16015A416) was used to develop this LAR. SNC wishes to utilize Option A described in the aforementioned letter since the plant modifications here within have been evaluated using the accepted fire PRA methods and approaches as summarized in FNP's NFPA-805 final safety evaluation dated March 10, 2015 (ADAMS Accession No. ML14308A048.)

2.0 Detailed Description

This LAR proposes to change the FNP FOL, Appendix C, to update the reference to Attachment S, Table S-2. Planned modifications, studies, and evaluations to comply with NFPA 805 are described in Attachment S. The current FOL for each FNP unit states "the licensee shall implement the modifications to its facility, as described in Attachment S, Table S-2, "Plant Modifications Committed," of SNC letter NL-14-1273, dated August 29, 2014 to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017."

This proposed License Amendment Request (LAR) would revise the FNP FOL, Appendix C, to require Southern Nuclear Operating Company (SNC) to implement modifications to its facility as described in Attachment S, Table S-2, "Plant Modifications Committed," of this SNC letter, NL-15-2310, to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017.

Per the NRC to NEI letter dated March 2, 2016, it is recommended that the following information be provided for an Option A approval:

- i. A summary of all changes to the modifications;
- ii. A summary of all changes to the probabilistic risk assessment (PRA) models and explanation for each change;
- iii. New, updated versions in their entirety of: the License Condition (Attachment M), list of plant modifications (Attachment S), and the summarizing area wide change-in-risk result tables (Attachment W); and

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- iv. A statement that the defense-in-depth (DID) and safety margin evaluations associated with the original LAR have been completed on the proposed changes.

As such, items i, ii, and iv are provided in Enclosure 1. Enclosure 2 to this letter provides the revision to Attachment M, License Condition Changes. The marked up and clean-typed pages of the FOL are included in Enclosure 2, Attachment M. Enclosures 3 to this letter provide the revisions to Attachment S, Modifications and Implementation Items. Enclosure 4 provides Attachment W, Fire PRA Insights. Enclosure 5 provides markup pages of Attachments S and W. Only the affected pages are included in Enclosure 5 to aide in identifying the changes to the attachments.

Attachment M Changes

The current FOLs for FNP, Units 1 and 2, reference the original LAR submittal date, the dates of each supplemental submittal, and the date of the safety evaluation for the original LAR. These dates are reflected in the "Fire Protection" section of the FOLs, 2.C(4) and 2.C(6), for Units 1 and 2, respectively.

The SNC letter number and date which contain the latest, approved Attachment S, Tables S-2 and S-3, is also referenced as a Transition License Conditions in sections 2.C(4)c. and 2.C(6)c. for Units 1 and 2, respectively.

This LAR will add new dates to the "Fire Protection" sections of the FNP FOLs to reflect the date of this letter and, once received, the safety evaluation date. The reference to the current letter number and date will also be included in the Transition License Conditions for Table S-2. This LAR does not include any changes to Table S-3; therefore, the license condition for Table S-3 will not change.

Attachment S Changes

There are three items that will be revised in the current Attachment S, Table S-2 as follows:

1. Delete Fire Area 1-041 information from Table S-2

Proposed Change: Delete the proposed modification for Fire Area 1-041 on page S-8 of Attachment S Table S-2, Plant Modifications Committed, which states:

Protect raceways 1VADD014, 1VAED051, 1VAED052, 1VAED085, 1VAHE26, 1VAHE-27, 1VAHJ010, and 1VAHJ-19 and 1VAHJ011 with 1 hr fire rated material to prevent fire damage due to fire at 4kV Bus 1B.

2. Add verbiage to information about item 11 (Pyro Panel modification)

Proposed Change: On page S-16 of Attachment S Table S-2, Plant Modifications Committed, there is a proposed modification for item 11, which states:

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Install a new code compliant fire detection system for those detector strings that do not currently meet code and provide a code compliance evaluation to support the new system.

A Pyro Panel replacement would address meeting the modification above; however, an entire Pyro Panel replacement will not be completed prior to the final NFPA 805 implementation date of November 6, 2017. This LAR proposes the following new wording for Item 11:

Provide circuit supervision where required by the code of record but lacking in the existing fire detection system by modifying the existing system and/or moving the subject circuits to the newly installed fire alarm and detection system. Also, provide modifications to correct greater than minor deviations from the code of record regarding detector placement. This may be accomplished within the existing Pyrotronics system or at the same time the subject detector strings are moved to the newly installed fire alarm and detection system.

3. Change cable 2VCHAL07P to cable 2VCFARK2P (TDAFWP UPS)

Proposed Change: On page S-12 of Attachment S Table S-2, Plant Modifications Committed, there is a proposed modification for Fire Area 2-035, which states:

Protect 2VCHAL07P cable in conduit 2VCHF260 with 1 hr fire rated material to prevent fire damage. This cable is associated with the following component: Q2N23L0001:E:E

After the initial LAR submittal of NFPA-805, a design change was performed on the Unit 2 Turbine Driven Auxiliary Feedwater (TDAFW) Uninterruptible Power Supply (UPS.) During this design change, cable 2VCHAL07P was designated as "spare." Cable 2VCFARK2P in conduit 2VCED261 is the newly installed power cable for the TDAFW UPS on Unit 2. This LAR proposes the following new wording to update the cable identifier and conduit for Fire Area 2-035:

Protect 2VCFARK2P cable in conduit 2VCED261 with 1 hr fire rated material to prevent fire damage. This cable is associated with the following component: Q2N23L0001:E:E

All other modifications in Table S-2 have been completed or will be completed prior to November 6, 2017. The new Attachment S with revision bars indicating changes is included in Enclosure 3.

Attachment W Changes

The changes to Attachment W in this LAR include changes to pages W-2, W-30, and W-41 based on deleting the proposed modification in fire area 1-041. There is also correction of editorial errors in the counts of the Unit 2 scenarios on page

W-2 of the attachment. Tables W-4 and W-5 from the previous submittal(s) contained the correct scenario number counts; however, there were errors in the summary paragraph on page W-2 that are now corrected.

3.0 Technical Analysis

There are three items that will be revised in the current Attachment S, Table S-2 as follows:

1. Delete Fire Area 1-041 information from Table S-2

Proposed Change:

Delete the proposed modification for Fire Area 1-041 on page S-8 of Attachment S Table S-2, Plant Modifications Committed, which states:

Protect raceways 1VADD014, 1VAED051, 1VAED052, 1VAED085, 1VAHE26, 1VAHE-27, 1VAHJ010, and 1VAHJ-19 and 1VAHJ011 with 1 hr fire rated material to prevent fire damage due to fire at 4kV Bus 1B.

Basis for Change #1:

The modification commitment for Fire Area 1-041 was included during the preparation of the original LAR submitted to the NRC on September 25, 2012 (ADAMS Accession No. ML12279A235.) During the responses to Request for Additional Information (RAI) regarding the LAR, the fire PRA was revised to resolve RAI issues and further refined to meet the NFPA-805 acceptance criteria. Because of the refinements, the risk insight was revised for a fire scenario in Train A Switchgear Room 0343, which is a subsection of Fire Area 1-041. It was subsequently noticed that any risk improvement from the committed modification in the fire PRA was substantially reduced.

Risk Impact Discussion:

The change in risk benefit from the committed raceways protection is related to the recovery of the 1C and 2C Emergency Diesel Generators (EDG) that were credited during the response to the RAIs. Note that the recovery of the 1C and 2C EDGs was not credited in the original LAR model because the locations of the required cables were not identified. However, during the model refinement performed concurrently with the resolution of technical RAI issues, the required cables for recovery were identified and analyzed and incorporated into the fire PRA model.

A risk evaluation was conducted to evaluate the differences in fire risk with and without the plant modification for Fire Area 1-041. The analysis was conducted employing the FNP fire PRA model developed for RAI response submitted by letter on August 29, 2014 (ADAMS Accession No. ML14246A523.)

The new total Unit 1 average variant CDF and LERF of Fire Area 1-041 are 7.05E-6 and 3.25E-8, respectively after removing the credit of the committed modification from the model. The CDF is very similar to the reported CDF 7.04E-6 in Attachment W of the RAI response from August 29, 2014 (ADAMS

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Accession No. ML14246A523) and the LERF is not changed. Unit 2 average variant CDF of Fire Area 1-041 is changed to 6.58E-7 from 6.39E-7 and Unit 2 LERF is increased to 1.06E-9 from 1.03E-9.

The removal of credit of the committed modification from the model results in a smaller Δ CDF (8.85E-7) and Δ LERF (3.39E-9) of variant and compliant cases than the current Δ CDF (8.86E-7) and Δ LERF (3.40E-9) presented in Attachment W for the Fire Area 1-041 in Unit 1 model. It was conservatively assumed that the additional risks of recovery actions are same as the delta risks of variant and compliant cases.

Since the modification is for Unit 1, its contribution to the Unit 2 risk is less meaningful than the contribution to Unit 1. Table 1 (below) summarizes the risk changes of Fire Area 1-041 in Unit 1 and Unit 2 models with and without protection. Note that the risks 'With Protection' are referenced from Attachment W of the RAI response from August 29, 2014 (ADAMS Accession No. ML14246A523), while the 'Without Protection' risk values are included in the new Attachment W, which is Enclosure 4 of this letter.

Table 1 - Summary of Risk Changes of Fire Area 1-041

Fire Area	Case	Fire Area Variant CDF	Fire Area Variant LERF	FRE Δ CDF	FRE Δ LERF	Add'l Risk of RAs (CDF)	Add'l Risk of RAs (LERF)
U1 1-041	With Protection	7.04E-06	3.25E-08	8.86E-07	3.40E-09	8.86E-07	3.40E-09
	Without Protection	7.05E-06	3.25E-08	8.85E-07	3.39E-09	8.85E-07	3.39E-09
U2 1-041	With Protection	6.39E-07	1.03E-09	6.88E-09	4.19E-11	6.88E-09	4.19E-11
	Without Protection	6.58E-07	1.06E-09	7.66E-09	4.19E-11	7.66E-09	4.19E-11

Since not crediting the modification has a minor impact on total plant risk and does not challenge the RG 1.174 Acceptance Criteria, it is concluded that the risk impact of non-credit of the committed modification is minimal. Unit 2 delta risks are also less than the criteria.

Defense-in-Depth/Safety Margin Discussion:

The modifications originally specified for Fire Area 1-041 were determined to no longer be necessary to meet risk criteria; therefore, removal of credit of these modifications has no impact on any of the Defense-in-Depth echelons:

1. Prevent fires from starting,
2. Rapidly detect, control and extinguish promptly those fires that do occur thereby preventing fire damage, and
3. Provide adequate level of fire protection for systems and structures so that a fire will not prevent essential safety functions from being performed.

The originally proposed barrier was not credited for any of these Defense-in-Depth measures. Adequate safety margins are maintained because this

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change does not impact any codes and standards or their alternatives accepted for use by the NRC and this change does not impact any safety analysis acceptance criteria used in the licensing basis.

2. Add verbiage to information about Item 11 (Pyro Panel modification)

Proposed Change:

On page S-16 of Attachment S Table S-2, Plant Modifications Committed, there is a proposed modification for item 11, which states:

Install a new code compliant fire detection system for those detector strings that do not currently meet code and provide a code compliance evaluation to support the new system.

A Pyro Panel replacement would address meeting the modification above; however, an entire Pyro Panel replacement will not be completed prior to the final NFPA 805 implementation date of November 6, 2017. This LAR proposes the following new wording for Item 11:

Provide circuit supervision where required by the code of record but lacking in the existing fire detection system by modifying the existing system and/or moving the subject circuits to the newly installed fire alarm and detection system. Also, provide modifications to correct greater than minor deviations from the code of record regarding detector placement. This may be accomplished within the existing Pyrotronics system or at the same time the subject detector strings are moved to the newly installed fire alarm and detection system.

Basis for Change #2:

A large portion of the proposed Pyro Panel modifications will be completed prior to November 6, 2017 and all modifications needed for NFPA-805 implementation will be completed prior to November 6, 2017. This wording change will ensure that the scope of the modifications needed to satisfy item 11 will be completed by the date necessary and future desired modifications that are not necessary for NFPA 805 can be completed after the final implementation date. Minor code deviations will be addressed after November 6, 2017. Minor deviations include:

- Detectors identified in the code evaluation as inaccessible, but continue to be accessed during surveillances.
- New spot detector location additions in areas with no credible fire hazards.
- New spot detector locations required by the NFPA standard for the new system (NFPA 72 2007 Edition) but not required by the code of record.
- Relocation of spot detectors for ALARA purposes.
- Modifications in areas containing no equipment needed to keep the fuel safe and stable.
- Relocation of local annunciation devices since plant wide notification for fires is performed by Operations personnel.

Risk Impact Discussion:

Since the original system remains fully functional, the clarification of scope and schedule for the replacement does not impact the fire PRA and the risk insights presented in the LAR.

Defense-in-Depth/Safety Margin Discussion:

This change provides clarification on the scope and schedule for replacement of the plant fire detection system. The portions of the replacement project that are required to address greater than minor code compliance issues for NFPA 805 implementation continue to be within the modification commitment date of November 6, 2017. Specifically, non-compliances regarding circuit supervision and non-compliances regarding detector placement will be addressed prior to November 6, 2017. The portions of the fire detection and alarm system on the newly installed fire alarm and detection system as well as the portions of the fire detection and alarm system on the original Pyrotronics system will be code compliant by November 6, 2017. The remainder of the project to complete overall replacement of the obsolete equipment will continue beyond November 6, 2017. The original Pyrotronics system remains fully functional. Therefore, there is no reduction in Defense-in-Depth. There are no reductions in safety margin.

3. Change cable 2VCHAL07P to cable 2VCFARK2P (TDAFW UPS)

Proposed Change:

On page S-12 of Attachment S Table S-2, Plant Modifications Committed, there is a proposed modification for Fire Area 2-035, which states:

Protect 2VCHAL07P cable in conduit 2VCHF260 with 1 hr fire rated material to prevent fire damage. This cable is associated with the following component: Q2N23L0001:E:E

After the initial LAR submittal of NFPA-805, a design change was performed on the Unit 2 Turbine Driven Auxiliary Feedwater (TDAFW) Uninterruptible Power Supply (UPS.) During this design change, cable 2VCHAL07P was designated as "spare." Cable 2VCFARK2P in conduit 2VCED261 is the newly installed power cable for the TDAFW UPS on Unit 2. This LAR proposes the following new wording to update the cable identifier and conduit for Fire Area 2-035:

Protect 2VCFARK2P cable in conduit 2VCED261 with 1 hr fire rated material to prevent fire damage. This cable is associated with the following component: Q2N23L0001:E:E

Basis for Change #3:

The portion of cable 2VCFARK2P that is inside Fire Area 2-035 will be protected with 1 hour fire rated material. The intent of the original proposed modification for Q2N23L0001:E:E will not be changed, but the wording in Table S-2 will be updated to reflect actual plant configuration.

Risk Impact Discussion:

Since the cable protection is to prevent the damage of cable from hot gas layer and the new cable and conduit are run through the same fire area 2-035 as the existing cable and conduit, the proposed new wording does not impact the fire PRA and the risk insights presented in the LAR.

Defense-in-Depth/Safety Margin Discussion:

This change provides clarification on the identification of the cable which is being provided with 1 hour fire rated material. Therefore, this does not result in a change in Defense-in-Depth nor represent a reduction in safety margin.

4.0 Regulatory Safety Analysis

4.1 Significant Hazards Consideration

Southern Nuclear Operating Company (SNC) is requesting an amendment to the Joseph M. Farley Nuclear Plant (FNP) Facility Operating Licenses (FOL), Appendix C, to revise existing commitments regarding NFPA-805 Performance Based Standard for Fire Protection for Light Water Reactor Generating Plants.

A written evaluation of the significant hazards consideration of a proposed license amendment is required by 10 CFR 50.92. According to 10 CFR 50.92, a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

- Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- Involve a significant reduction in a margin of safety.

As required by 10 CFR 50.91(a), the SNC analysis of the issue of no significant hazards consideration using the standards in 10 CFR 50.92 is presented below:

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

Response: No

The proposed amendment updates Attachments M, S, and W of the previously approved NFPA-805 LAR submittal for FNP. The attachment revisions are based on the three changes to Table S-2 proposed in this LAR. One of the changes is justified based on negligible risk impact to Core Damage Frequency or Large Early Release Frequency associated with not performing the committed

modification. The other two changes have no impact on accident analysis as they are clarifying or administrative in nature.

The proposed change does not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration of the facility or the manner in which the plant is operated and maintained. The proposed changes do not adversely affect the ability of structures, systems and components (SSCs) to perform their intended safety function to mitigate the consequences of an initiating event within the assumed acceptance limits. The proposed change does not increase the probability or consequence of an accident as verified by the risk analysis performed.

Therefore, this proposed change does not involve a significant increase in the probability or consequences of an accident previously identified.

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

Response: No

The proposed amendment updates Attachments M, S, and W of the previously approved NFPA-805 LAR submittal for FNP. The attachment revisions are based on the three changes to Table S-2 proposed in this LAR. One of the changes is justified based on negligible risk impact to Core Damage Frequency or Large Early Release Frequency associated with not performing the committed modification. The other two changes have no impact on accident analysis as they are clarifying or administrative in nature.

The proposed change relates to the availability of fire PRA credited component in given fire scenarios.

Therefore, this proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No

The proposed amendment updates Attachments M, S, and W of the previously approved NFPA-805 LAR submittal for FNP. The attachment revisions are based on the three changes to Table S-2 proposed in this LAR. One of the changes is justified based on negligible risk impact to Core Damage Frequency or Large Early Release Frequency associated with not performing the committed modification. The other two changes have no impact on accident analysis as they are clarifying or administrative in nature.

The proposed change does not increase the probability or consequence of an accident and does not reduce the margin of safety as verified by the risk analysis performed.

Therefore, this proposed change does not involve a significant reduction in a margin of safety.

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. SNC has evaluated the proposed amendment and determined that it involves no significant hazards consideration.

4.2 Applicable Regulatory Requirements/Criteria

On July 16, 2004 the NRC amended 10 CFR 50.48, Fire Protection, to add a new subsection, 10 CFR 50.48(c), which establishes alternative fire protection requirements. 10 CFR 50.48 endorses, with exceptions, NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants – 2001 Edition (NFPA 805), as a voluntary alternative for demonstrating compliance with 10 CFR 50.48 Section (b), Appendix R, and Section (f), Decommissioning.

The voluntary adoption of 10 CFR 50.48(c) by FNP does not eliminate the need to comply with 10 CFR 50.48(a) and 10 CFR 50, Appendix A, GDC 3, Fire Protection.

The new rule provides actions that may be taken to establish compliance with 10 CFR 50.48(a), which requires each operating nuclear power plant to have a fire protection program plan that satisfies GDC 3, as well as specific requirements in that section. The transition process described in 10 CFR 50.48(c)(3)(ii) provides, in pertinent parts, that a licensee intending to adopt the new rule must, among other things, "modify the fire protection plan required by paragraph (a) of that section to reflect the licensee's decision to comply with NFPA 805." Therefore, to the extent that the contents of the existing fire protection program plan required by 10 CFR 50.48(a) are inconsistent with NFPA 805, the fire protection program plan must be modified to achieve compliance with the requirements in NFPA 805. All other requirements of 10 CFR 50.48 (a) and GDC 3 have corresponding requirements in NFPA 805.

4.3 Conclusions

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of

the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 Environmental Considerations

SNC has evaluated the proposed amendment and determined that the amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 References

1. Letter from M. J. Ajluni, SNC, to U. S. Nuclear Regulatory Commission (NL-12-1893), Joseph M. Farley Nuclear Plant, License Amendment Request to Adopt NFPA-B05 Performance Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition), September 25, 2012 (ADAMS Accession No. ML12279A235.)
2. Letter from C. R. Pierce, SNC, to U. S. Nuclear Regulatory Commission (NL-14-1273), Joseph M. Farley Nuclear Plant, Response to Request for Additional Information Regarding License Amendment Request for Transition to 10 CFR 50.48(c)-NFP A 805 Performance Based Standard for Fire Protection for Light Water Reactor Generating Plants, August 29, 2014 (ADAMS Accession No. ML14246A523.)
3. Letter from Shawn Williams, U. S. Nuclear Regulatory Commission, to C. R. Pierce, SNC, Joseph M. Farley Nuclear Plant, Units 1 and 2 – Issuance of Amendment Regarding Transition to a Risk-Informed, Performance-Based Fire Protection Program in Accordance with 10 CFR 50.48(c) (TAC Nos. ME9741 and ME9742), March 10, 2015 (ADAMS Accession No. ML14308A048.)
4. Letter from Anne Borland and Joseph G. Giitter, U.S. Nuclear Regulatory Commission, to Michael D. Tschiltz, Nuclear Energy Institute, Recommended Content For License Amendment Requests That Seek Changes To License Conditions That Were Established In Amendments To Adopt National Fire Protection Association Standard 805 But Have Yet To Be Fully Implemented, March 2, 2016 (ADAMS Accession No. ML16015A416.)

**Joseph M. Farley Nuclear Plant – Units 1 and 2
Supplemental License Amendment Request to Revise Existing Facility Operating
License Commitments Regarding NFPA-805 Performance Based Standard
for Fire Protection for Light Water Reactor Generating Plants**

Enclosure 2

Attachment M, License Condition Changes

M. License Condition Changes

22 Pages Attached

Replace the current FNP fire protection license conditions 2.C(4) for Unit 1 and 2.C(6) for Unit 2 with the standard license condition based on Regulatory Position 3.1 of RG 1.205.

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Southern Nuclear Operating Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated _____, supplemented by letters dated _____, and as approved in the safety evaluation report dated _____. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

- (a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- (b) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-8} /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

Other Changes that May Be Made Without Prior NRC Approval

(1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical

requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the component, system, procedure, or physical arrangement functionality using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the component, system, procedure, or physical arrangement functionality using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are:

- Fire Alarm and Detection Systems (Section 3.8);
- Automatic and Manual Water-Based Fire Suppression Systems (Section 3.9);
- Gaseous Fire Suppression Systems (Section 3.10); and,
- Passive Fire Protection Features (Section 3.11).

This License condition does not apply to any demonstration of equivalency under Section 1.7 of NPFA 805.

(2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in NRC safety evaluation report dated _____ to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

Transition License Conditions

- (1) Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (2) above.
- (2) The licensee shall implement the following modifications to its facility to complete transition to full compliance with 10 CFR 50.48(c) by _____:
See plant specific list of modifications identified in Attachment S.
- (3) The licensee shall maintain appropriate compensatory measures in place until completion of the modifications delineated above.

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License conditions 2.C(4) and 2.C(6) shall be superseded:

Unit 1

(4) Fire Protection

Southern Nuclear shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, which implements the fire protection requirements of 10 CFR 50.48 and 10 CFR 50 Appendix R. Southern Nuclear may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown.

Unit 2

(6) Fire Protection

Southern Nuclear shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, which implements the fire protection requirements of 10 CFR 50.48 and 10 CFR 50 Appendix R. Southern Nuclear may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown.

It is SNCs understanding that implicit in the revocation of this license condition, all prior FPP SERs and commitments have been superseded in their entirety by the revised license condition.

No other license conditions need to be revised or superseded.

FNP implemented the following process for determining that these are the only license conditions required to be either revised or superseded to implement the new FPP which meets the requirements in 10 CFR 50.48(a) and 50.48(c):

A review was conducted of the FNP Renewed Facility Operating License NPF-2 and NPF-8, by FNP licensing staff and NFPA 805 Transition Team. The review was performed by reading the Operating License and performing electronic searches. Outstanding LARs that have been submitted to the NRC were also reviewed for potential impact on the license conditions.

FACILITY OPERATING LICENSE– MARKUPS

8 Pages Attached

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 498, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

- a. Southern Nuclear shall not operate the reactor in Operational Modes 1 and 2 with less than three reactor coolant pumps in operation.
- b. Deleted per Amendment 13
- c. Deleted per Amendment 2
- d. Deleted per Amendment 2
- e. Deleted per Amendment 152
Deleted per Amendment 2
- f. Deleted per Amendment 158
- g. Southern Nuclear shall maintain a secondary water chemistry monitoring program to inhibit steam generator tube degradation.
This program shall include:
 - 1) Identification of a sampling schedule for the critical parameters and control points for these parameters;
 - 2) Identification of the procedures used to quantify parameters that are critical to control points;
 - 3) Identification of process sampling points;
 - 4) A procedure for the recording and management of data;
 - 5) Procedures defining corrective actions for off control point chemistry conditions; and

- 6) A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events required to initiate corrective action.

h. The Additional Conditions contained in Appendix C, as revised through Amendment No. 146, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the additional conditions.

i. Deleted per Amendment 152

requests dated
September 25, 2012;
April XX, 2016,

(4) Fire Protection

Southern Nuclear Operating Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated September 25, 2012, and supplements dated December 20, 2012; September 16, 2013; October 30, 2013; November 12, 2013; April 23, 2014; May 23, 2014; July 3, 2014; August 11, 2014; August 29, 2014; October 13, 2014; January 16, 2015, and as approved in the safety evaluation report dated March 10, 2015. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

reports dated March
10, 2015; [SER
issue date].

a. Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at Farley. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

-6-

- 1) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- 2) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-8} /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

b. Other Changes that May Be Made Without Prior NRC Approval

- 1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3 elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and,
- "Passive Fire Protection Features" (Section 3.11).

This License condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

reports dated
March 10, 2015
and [SER issue
date],

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in NRC safety evaluation report dated March 10, 2015, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

c. Transition License Conditions

- 1) Before achieving full compliance with 10 CFR 50.48(c), as specified by 2) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2) above.

- 2) The licensee shall implement the modifications to its facility, as described in Attachment S, Table S-2, "Plant Modifications Committed," of SNC letter ~~NL-14-1273~~, ~~dated August 29, 2014~~, to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.

NL-15-2310, dated
April XX, 2016

- 3) The licensee shall implement the items as listed in Attachment S, Table S-3, "Implementation Items," of SNC letter NL-14-1273, dated August 29, 2014, within 180 days after NRC approval, except for items 30 and 32. Items 30 and 32 shall be implemented by February 6, 2018.

- (2) Alabama Power Company, pursuant to Section 103 of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess but not operate the facility at the designated location in Houston County, Alabama in accordance with the procedures and limitations set forth in this renewed license.
 - (3) Southern Nuclear, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (4) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (5) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (6) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level
Southern Nuclear is authorized to operate the facility at reactor core power levels not in excess of 2775 megawatts thermal.
 - (2) Technical Specifications
The Technical Specifications contained in Appendix A, as revised through Amendment No. 494, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.
 - (3) Deleted per Amendment 144
 - (4) Deleted per Amendment 149
 - (5) Deleted per Amendment 144

requests dated
September 25, 2012;
April XX, 2016,

(6) Fire Protection

Southern Nuclear Operating Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated September 25, 2012, and supplements dated December 20, 2012; September 16, 2013; October 30, 2013; November 12, 2013; April 23, 2014; May 23, 2014; July 3, 2014; August 11, 2014; August 29, 2014; October 13, 2014; January 16, 2015, and as approved in the safety evaluation report dated March 10, 2015. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

reports dated March
10, 2015; [SER
issue date].

a. Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at Farley. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

- 1) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- 2) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-8} /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

b. Other Changes that May Be Made Without Prior NRC Approval

1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3 elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and,
- "Passive Fire Protection Features" (Section 3.11).

This License condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

reports dated
March 10,
2015 and
[SER issue
date],

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in NRC safety evaluation report dated March 10, 2015,

to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

c. Transition License Conditions

- 1) Before achieving full compliance with 10 CFR 50.48(c), as specified by 2) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2) above.
- 2) The licensee shall implement the modifications to its facility, as described in Attachment S, Table S-2, "Plant Modifications Committed," of SNC letter ~~NL-14-1273, dated August 29, 2014,~~ to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
- 3) The licensee shall implement the items as listed in Attachment S, Table S-3, "Implementation Items," of SNC letter NL-14-1273, dated August 29, 2014, within 180 days after NRC approval, except for items 30 and 32. Items 30 and 32 shall be implemented by February 6, 2018.

NL-15-2310, dated
April XX, 2016

- (7) Deleted per Amendment 144
- (8) Deleted per Amendment 144
- (9) Deleted per Amendment 144
- (10) Deleted per Amendment 144
- (11) Deleted per Amendment 144
- (12) Deleted per Amendment 144
- (13) Deleted per Amendment 144
- (14) Deleted per Amendment 144
- (15) Deleted per Amendment 144
- (16) Deleted per Amendment 144
- (17) Deleted per Amendment 144
- (18) Deleted per Amendment 144
- (19) Deleted per Amendment 144
- (20) Deleted per Amendment 144
- (21) Deleted per Amendment 144

(22) Additional Conditions

The Additional conditions contained in Appendix C, as revised through Amendment No. 137, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the additional conditions.

FACILITY OPERATING LICENSE– CLEAN TYPED PAGES

8 Pages Attached

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. _____, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

- a. Southern Nuclear shall not operate the reactor in Operational Modes 1 and 2 with less than three reactor coolant pumps in operation.
- b. Deleted per Amendment 13
- c. Deleted per Amendment 2
- d. Deleted per Amendment 2
- e. Deleted per Amendment 152
Deleted per Amendment 2
- f. Deleted per Amendment 158
- g. Southern Nuclear shall maintain a secondary water chemistry monitoring program to inhibit steam generator tube degradation.
This program shall include:
 - 1) Identification of a sampling schedule for the critical parameters and control points for these parameters;
 - 2) Identification of the procedures used to quantify parameters that are critical to control points;
 - 3) Identification of process sampling points;
 - 4) A procedure for the recording and management of data;
 - 5) Procedures defining corrective actions for off control point chemistry conditions; and

- 6) A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events required to initiate corrective action.
- h. The Additional Conditions contained in Appendix C, as revised through Amendment No. 146, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the additional conditions.
- i. Deleted per Amendment 152

(4) Fire Protection

Southern Nuclear Operating Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment requests dated September 25, 2012; April XX, 2016, and supplements dated December 20, 2012; September 16, 2013; October 30, 2013; November 12, 2013; April 23, 2014; May 23, 2014; July 3, 2014; August 11, 2014; August 29, 2014; October 13, 2014; January 16, 2015, and as approved in the safety evaluation reports dated March 10, 2015; _____. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

a. Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at Farley. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

-6-

- 1) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- 2) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-8} /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

b. Other Changes that May Be Made Without Prior NRC Approval

- 1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3 elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and,
- "Passive Fire Protection Features" (Section 3.11).

This License condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in NRC safety evaluation reports dated March 10, 2015 and _____, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

c. Transition License Conditions

- 1) Before achieving full compliance with 10 CFR 50.48(c), as specified by 2) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2) above.
- 2) The licensee shall implement the modifications to its facility, as described in Attachment S, Table S-2, "Plant Modifications Committed," of SNC letter NL-15-2310, dated April XX, 2016, to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
- 3) The licensee shall implement the items as listed in Attachment S, Table S-3, "Implementation Items," of SNC letter NL-14-1273, dated August 29, 2014, within 180 days after NRC approval, except for items 30 and 32. Items 30 and 32 shall be implemented by February 6, 2018.

- (2) Alabama Power Company, pursuant to Section 103 of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess but not operate the facility at the designated location in Houston County, Alabama in accordance with the procedures and limitations set forth in this renewed license.
- (3) Southern Nuclear, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
- (4) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (6) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Southern Nuclear is authorized to operate the facility at reactor core power levels not in excess of 2775 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. _____, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Deleted per Amendment 144

(4) Deleted per Amendment 149

(5) Deleted per Amendment 144

(6) Fire Protection

Southern Nuclear Operating Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment requests dated September 25, 2012; April XX, 2016, and supplements dated December 20, 2012; September 16, 2013; October 30, 2013; November 12, 2013; April 23, 2014; May 23, 2014; July 3, 2014; August 11, 2014; August 29, 2014; October 13, 2014; January 16, 2015, and as approved in the safety evaluation reports dated March 10, 2015; _____. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

a. Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at Farley. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

- 1) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- 2) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-8} /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

b. Other Changes that May Be Made Without Prior NRC Approval

1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3 elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and,
- "Passive Fire Protection Features" (Section 3.11).

This License condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in NRC safety evaluation reports dated March 10, 2015 and

_____, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

c. Transition License Conditions

- 1) Before achieving full compliance with 10 CFR 50.48(c), as specified by 2) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2) above.
- 2) The licensee shall implement the modifications to its facility, as described in Attachment S, Table S-2, "Plant Modifications Committed," of SNC letter NL-15-2310, dated April XX, 2016, to complete the transition to full compliance with 10 CFR 50.48(c) by November 6, 2017. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
- 3) The licensee shall implement the items as listed in Attachment S, Table S-3, "Implementation Items," of SNC letter NL-14-1273, dated August 29, 2014, within 180 days after NRC approval, except for items 30 and 32. Items 30 and 32 shall be implemented by February 6, 2018.

- (7) Deleted per Amendment 144
- (8) Deleted per Amendment 144
- (9) Deleted per Amendment 144
- (10) Deleted per Amendment 144
- (11) Deleted per Amendment 144
- (12) Deleted per Amendment 144
- (13) Deleted per Amendment 144
- (14) Deleted per Amendment 144
- (15) Deleted per Amendment 144
- (16) Deleted per Amendment 144
- (17) Deleted per Amendment 144
- (18) Deleted per Amendment 144
- (19) Deleted per Amendment 144
- (20) Deleted per Amendment 144
- (21) Deleted per Amendment 144

(22) Additional Conditions

The Additional conditions contained in Appendix C, as revised through Amendment No. 137, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the additional conditions.