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MAR 03 2016

Docket Nos.: 50-348 50-321 50-424
50-364 50-366 50-425

NL-15-1898

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

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;
License Amendment Request for Changes to
Emergency Action Level Schemes to Adopt NEI 99-01 Rev. 6
and to Modify Radiation Monitors at Farley Nuclear Plant

Ladies and Gentlemen:

In accordance with 10 CFR 50.90, 10 CFR 50 Appendix E, Section IV.B.2, and 10 CFR 50.54(q)(4), Southern Nuclear Operating Company (SNC) requests amendments to the licenses for the facilities listed above.

SNC proposes to adopt NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," to replace the Emergency Action Level (EAL) schemes for the facilities above that are currently based on Revision 4.

NEI 99-01, Revision 6 has been endorsed by the NRC in a letter dated March 28, 2013 from Mark Thaggard (U.S. Nuclear Regulatory Commission) to Susan Perkins-Grew (Nuclear Energy Institute) titled U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 99-01, Revision 6, November 2012 (ML12346A463).

In addition, SNC proposes changes to the Joseph M. Farley Nuclear Plant (Farley) Steam Generator Relief & Safety Valve Monitoring System radiation monitors RE-60A, RE-60B, and RE-60C, and the Turbine Driven Auxiliary Feedwater Pump Steam Exhaust Monitoring System radiation monitor RE-60D due to the limitations of these monitors. Accordingly, the relevant Farley EALs (RG1, RS1, RA1, and RU1), included with this LAR, will reflect this design change.

In a pre-submittal telephone conference to discuss the logistics of the SNC Emergency Planning licensing submittals, the NRC requested that the license amendments for the fleet adoption of NEI 99-01, Revision 6 and the

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NRR

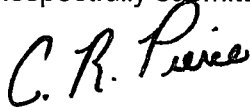
replacement of the Farley RE-60 radiation monitors both be submitted in the same license amendment package.

SNC requests approval within 12 months. The proposed changes will be implemented within one year of issuance of the amendment. The extended implementation period was selected to allow coordination with installation and testing of the radiation monitor replacements on both Farley units.

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.

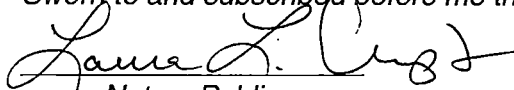
Respectfully submitted,



C. R. Pierce
Regulatory Affairs Director

crp/efb/lac

Sworn to and subscribed before me this 3rd day of March, 2016.


Notary Public

My commission expires: 10-8-2017



Enclosures:

1. Basis for Proposed Changes
2. EAL Deviations and Differences Matrix (Farley, Hatch, and Vogtle)
3. EAL Calculations (Farley, Hatch, and Vogtle)
4. EAL Verification and Validation Documents (Farley, Hatch, and Vogtle)
5. Marked-Up EAL Schemes (Farley, Hatch, and Vogtle)
6. Clean-typed EAL Schemes (Farley, Hatch, and Vogtle)
7. Example Wallboards (Farley, Hatch, and Vogtle)

cc: Southern Nuclear Operating Company

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RType: Farley=CFA04.054; Hatch=CHA02.004; Vogtle=CVC7000

U. S. Nuclear Regulatory Commission

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**Southern Nuclear Operating Company
Joseph M. Farley Nuclear Plant Units 1 and 2;
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Enclosure 1

Basis for Proposed Changes

1. SUMMARY DESCRIPTIONS

Adoption of NEI 99-01, Revision 6 EAL Schemes

Southern Nuclear Operating Company (SNC) is requesting amendments to the Facility Operating Licenses for the following facilities:

- Joseph M. Farley Nuclear Plant Units 1 and 2 (Farley)
- Edwin I. Hatch Nuclear Plant Units 1 and 2 (Hatch)
- Vogtle Electric Generating Plant Units 1 and 2 (Vogtle)

SNC proposes to adopt NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," (Reference 6.a) to replace the Emergency Action Level (EAL) schemes for the facilities above that are currently based on Revision 4. NEI 99-01, Revision 6, represents the most recently accepted EAL methodology endorsed by the U.S. Nuclear Regulatory Commission (NRC). (Reference 6.b.)

The proposed EAL changes were reviewed considering the requirements of 10 CFR 50.54(q), paragraph (b) of 10 CFR 50.47, "Emergency plans", and 10 CFR 50 Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." The proposed changes to the EAL schemes contained in this submittal do not reduce the capability to meet the applicable emergency planning requirements established in 10 CFR 50.47 and 10 CFR 50, Appendix E. However, 10 CFR 50 Appendix E, Section IV.B.2 requires prior NRC approval when a licensee desires to change its entire EAL scheme.

Farley RE-60 Radiation Monitors

In accord with a proposed plant modification, SNC proposes to revise the Farley EAL thresholds for Initiating Conditions (ICs) in RG1, RS1, RA1, and RU1. Due to limitations of the monitors and obsolescence, SNC proposes a design change to remove Steam Generator Relief & Safety Valve Monitoring System radiation monitors RE-60A, RE-60B, and RE-60C and relocate the three new radiation monitors adjacent to the main steam lines inside the Main Steam Valve Room. In addition, the Turbine Driven Auxiliary Feedwater Pump Steam Exhaust Monitoring System radiation monitor RE-60D will be removed. Consequently, the removal of all four radiation monitors will be reflected in the referenced EAL ICs.

The proposed changes to the Farley RE-60 radiation monitors were reviewed considering the requirements of 10 CFR 50.54(q), paragraph (b) of 10 CFR 50.47, "Emergency plans", and 10 CFR 50 Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." The EAL changes necessary to reflect this new design are considered to be a reduction in effectiveness because the changes will reduce the multiple and diverse methods to implement the response actions to make timely and accurate emergency classifications. Consequently, 10 CFR 50.54(q) requires prior NRC approval before implementing the changes.

2. DETAILED DESCRIPTIONS AND TECHNICAL EVALUATIONS

Adoption of NEI 99-01, Revision 6 EAL Schemes

A matrix for each plant has been developed that provides a tabular format of the Initiating Conditions (ICs), Mode Applicability, and EALs (Threshold Values) in NEI 99-01, Revision 6 along with the proposed EALs. The matrix provides a means of assessing each proposed EAL in terms of "Differences" and "Deviations" from the

NRC-endorsed guidance provided in NEI 99-01, Revision 6. The "Differences" and "Deviations" were based on the definitions of those terms in RIS 2003-18, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels" and supporting Supplements. (Reference 6.c, 6.d, and 6.e) These matrices, which provide the detailed descriptions and technical evaluations necessary for NRC review, are included in the enclosures.

Farley RE-60 Radiation Monitors

Farley plans to implement a design change to replace and relocate the current Unit 1 and Unit 2 Main Steam Safety Relief Radiation Monitors (RE-60A, B, and C) and abandon the Turbine Driven Auxiliary Feedwater Pump Exhaust Radiation Monitor (RE-60D). The existing monitors are being replaced because of poor reliability and aging of the equipment. The monitors are obsolete, and SNC has encountered difficulties in maintaining the equipment and procuring replacement parts. The RE-60 A, B, and C monitors are being relocated to alleviate personnel safety concerns and allow maintenance on the monitors during power operations.

The existing RE-60 monitors are located on the Auxiliary Building roof and survey the steam plume from the Steam Generator Atmospheric Relief Valve and Safety Valves (RE-60A, B, and C) and the exhaust plume from the Turbine Driven Auxiliary Feedwater Pump (RE-60D) for radiation releases due to a primary (reactor coolant loop) to secondary (main steam lines) tube leak. The RE-60 monitors provide post-accident effluent monitoring in compliance with Regulatory Guide 1.97. (Reference 7.a). These monitors are being replaced with new equipment comprised of a detector sealed inside a shielded enclosure and are being relocated adjacent to the main steam lines inside the Main Steam Valve Room. The steam supply for the Turbine Driven Auxiliary Feedwater Pump comes from steam generator B and C main steam lines for each unit, and the existing radiation monitors for those exhausts (RE-60D) will not be replaced because their function is performed by the relocated radiation monitors RE-60B & RE-60C upstream on the steam supply lines to the turbines.

Currently, the RE-60A, B, C, and D monitors are used in the Farley EAL scheme to assess ICs RG1, RS1, RA1, and RU1. With the proposed change, threshold values for EAL #1 of ICs RG1 and RS1 using the RE-60A, B, C, and D radiation monitors will be deleted. Additionally, EAL #2 of ICs RA1 and RU1, which also use these radiation monitors, will be deleted. Consequently, the new Farley EAL scheme adopting NEI 99-01 Rev. 6 will reflect that these monitors have been deleted.

The Farley EAL scheme contains multiple alternative EALs for the declaration of the Unusual Event, Alert, Site Area Emergency, and General Emergency for Initiating Conditions (ICs) RU1, RA1, RS1, and RG-1. These multiple EALs are contained within the approved EAL scheme, the Farley Emergency Plan, and associated implementing procedures. These EALs sufficiently bound the Initiating Condition to ensure that the capability to assess the IC is provided and is not dependent on "skill-of-the-craft" or individual judgment.

The NRC endorsed guidance provided in NEI 99-01 Revision 6 provides three separate Emergency Action Levels (EALs) for evaluating Initiating Conditions RG1, RS1, and RA1. First, EAL #1 is based on pre-calculated effluent radiation monitor readings exceeding values indicative of the IC. Second, EAL #2 is based on dose assessment using actual meteorology indicating the IC is met. Lastly, EAL #3 is

based on field survey results that indicate the IC has been met. In addition to these three EALs, the NEI 99-01 Revision 6 scheme also provides several notes, two of which provide the following guidance:

- “If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.”
- “The pre-calculated effluent monitor values presented in EAL #1 should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available”.

EAL #1: The location of the existing RE-60 radiation monitors is such that they are reading actual effluent from the main steam line atmospheric relief valves, safety valves, and the turbine driven auxiliary feedwater pump steam discharge. Because of this configuration, readings on these monitors would be indicative of an actual release and appropriate to use in the existing FNP EAL scheme. This present configuration provides monitor readings that are used for determining EAL #1 using the pre-calculated monitor readings, as well as, EAL #2 by using the monitor reading to perform a dose calculation using FNP’s dose assessment model. The proposed design change relocates the RE-60A, B, and C monitors to the main steam lines and removes RE-60D, and as such, the monitors are indicative of the source term within the affected main steam line but are not necessarily indicative of a release via the main steam line atmospheric relief valve, safety valves or turbine driven auxiliary feedwater pump steam discharge. A pre-calculated EAL value for these monitors is not appropriate because of the uncertain source term release rate for the varying number of valves open and/or flow rates through these valves. These source term release rate uncertainties preclude accurate emergency classifications based on the radiation effluent ICs. Nonetheless, radiological releases resulting from steam generator tube leakage with the main steam isolation valves open will continue to be evaluated for these ICs via EAL #1 using the steam jet air ejector effluent radiation monitors.

EAL #2: The existing capability of evaluating the ICs via EAL #2 based on radiation monitor readings using the dose assessment model is maintained with the proposed monitor configuration. The dose assessment software will use readings from these monitors and allow for the dose assessor to select the appropriate number of main steam line release points (e.g. atmospheric relief valves, safety valves, and/or turbine driven auxiliary feedwater pump steam discharge) that are open with the associated flow rates to perform off-site dose projections. Declaration using dose assessment is a more accurate means of determining if the IC has been met and is used as the primary means for evaluating these ICs once available as provided in the NEI 99-01 Revision 6 note referenced above. Dose assessment is an on shift capability with associated minimum shift staffing dedicated to support this function. Dose assessment is initiated shortly after the declaration of an Alert or higher emergency condition to facilitate the timely assessment of radiological releases via unmonitored pathways in accordance with plant procedures. As demonstrated by the Farley staffing analysis performed in accordance with 10 CFR 50 Appendix E.IV.A.9, the proposed change does not alter, or prevent the ability of the emergency response

organization to assess and monitor actual or potential offsite consequences of a radiological emergency condition.

EAL #3: EAL #3 is based on field readings indicative of the IC. This EAL remains unaffected by the proposed design change. FNP maintains an on shift field monitoring team which is dispatched at the declaration of an Alert or higher emergency or sooner if deemed necessary by the Emergency Director. The field results provided by this team will continue to be used for assessing these ICs via EAL #2 by performing dose projections by use of back calculations and via EAL #3 by evaluating the field team readings against the IC specific EAL #3 value.

In addition to ICs RG1, RS1 and RA1, the NEI 99-01 Revision 6 guidance also provides IC RU1 for evaluating radiological releases that are greater than 2 times the FNP Offsite Dose Calculation Manual (ODCM) limits. The developer notes in NEI 99-01 Revision 6 state that the "[l]isted monitors should include the effluent monitors described in the ... ODCM." The RE-60 series radiation monitors currently in use are not provided in the Farley ODCM; however, they were included in the existing EAL scheme for additional indication. In the proposed design configuration, the new instruments will monitor the main steam line source term and not actual effluent. Consequently, the new monitors will not be included in the FNP ODCM; and therefore, in accordance with the developer notes in NEI 99-01 Revision 6, the new main steam radiation monitors will not be included as an input for IC RU1. As with ICs RG1, RS1 and RA1, radiological releases resulting from steam generator tube leakage with the main steam line isolation valves open will continue to be evaluated for IC RU1 using the steam jet air ejector effluent radiation monitors.

The proposed changes to ICs RG1, RS1, RA1, and RU1 do not detract from the guidance in NEI 99-01, the requirements of 10 CFR 50.47(b)(4), or the standards in Appendix E to 10 CFR 50. However, this proposed change was evaluated by SNC to be a reduction of the multiple and diverse means available to decision-makers in assessing whether or not an Initiating Condition exists, and is therefore submitted to the NRC for approval prior to implementation as required under 10 CFR 50.54(q)(4).

3. REGULATORY EVALUATION

Significant Hazards Consideration

a. Applicable Regulatory Requirements/Criteria

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.47, "Emergency plans," sets forth emergency plan requirements for nuclear power plant facilities. The regulations in 10 CFR 50.47(a)(1)(i) state, in part, that:

[...] no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

10 CFR 50.47(b)(4) states:

"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."

10 CFR 50, Appendix E, Section IV, Content of Emergency Plans, item B.1, Assessment Actions, states:

"[t]he means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring."

10 CFR Part 50 Appendix E, Section IV.C.2 states:

"[...] nuclear power reactor licensees shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level."

10 CFR 50.54, Conditions of licenses, paragraph (q)(4) states:

"[t]he changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in paragraph (q)(1)(iv) of this section may not be implemented without prior approval by the NRC. A licensee desiring to make such a change after February 21, 2012 shall submit an application for an amendment to its license. In addition to the filing requirements of §§ 50.90 and 50.91, the request must include all emergency plan pages affected by that change and must be accompanied by a forwarding letter identifying 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 and, for nuclear power reactor licensees, the planning standards of § 50.47(b)."

The EAL scheme is intended to provide multiple and diverse threshold values for all emergency classification levels (Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency) to ensure timely and accurate EAL classifications.

b. Precedent

Adoption of NEI 99-01, Revision 6 EAL Schemes

On July 28, 2015, the NRC issued license amendments and a Safety Evaluation for ten nuclear stations in response to Exelon's request to revise the emergency action level schemes for each site based on NEI 99-01 Revision 6. (Reference 6.f)

Farley RE-60 Radiation Monitors

The planned design change at Farley will move the RE-60A, B, and C monitors from directly monitoring the radiation dose rate of the effluent steam after it exits the system piping, and will move them to a location inside the Main Steam Valve Room adjacent to the main steam lines. This design change creates a system configuration similar to that which exists at Vogtle, which submitted a similar license amendment request (Reference 7.b, and supplemented by References 7.c and 7.d) to revise the EAL thresholds for ICs RU1, RA1, RS1, and RG1 to remove the Main Steam Line (MSL) radiation monitors from consideration. This license amendment was reviewed and approved by the NRC. (Reference 7.e.)

This license amendment request differs slightly from the Vogtle request in that the Farley EAL scheme retains an additional diverse means of assessing ICs RG1 and RS1 by using the new RE-60 radiation monitors to perform real time dose assessment using actual meteorology, and thereby eliminating potential delays associated with obtaining field survey data and performing back-calculations to provide dose projection results for comparison to EAL #2 of these ICs. This will result in more timely and accurate classification when radiological conditions warrant.

c. No Significant Hazards Consideration

Adoption of NEI 99-01, Revision 6 EAL Schemes

The proposed changes to Southern Nuclear Operating Company's (SNC's) Emergency Action Level (EAL) schemes to adopt the guidance in NEI 99-01, Revision 6 do not reduce the capability to meet the emergency planning requirements established in 10 CFR 50.47 and 10 CFR 50, Appendix E. The proposed changes do not reduce the functionality, performance, or capability of SNC's Emergency Response Organization (ERO) to respond in mitigating the consequences of accidents. All SNC ERO functions will continue to be performed as required. The proposed changes have been reviewed considering the applicable requirements of 10 CFR 50.47 and 10 CFR 50, Appendix E. SNC has evaluated the proposed changes to the Emergency Plans and has determined that the changes do not involve a Significant Hazards Consideration.

Farley RE-60 Radiation Monitors

SNC has evaluated the proposed changes to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors and has determined that the proposed changes do not involve a Significant Hazards Consideration.

In support of this determination, an evaluation of each of the three (3) standards, set forth in 10 CFR 50.92, "*Issuance of amendment*," is provided below.

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

Response: No.

Adoption of NEI 99-01, Revision 6 EAL Schemes

The proposed changes to SNC's EAL schemes to adopt the NRC-endorsed guidance in NEI 99-01, Revision 6, "*Development of Emergency Action Levels for Non-Passive Reactors*," do not reduce the capability to meet the emergency planning requirements established in 10 CFR 50.47 and 10 CFR 50, Appendix E. The proposed changes do

not reduce the functionality, performance, or capability of SNC's ERO to respond in mitigating the consequences of any design basis accident.

The probability of a reactor accident requiring implementation of Emergency Plan EALs has no relevance in determining whether the proposed changes to the EALs reduce the effectiveness of the Emergency Plans. As discussed in Section D, "Planning Basis," of NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants:"

"...The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life saving) for a spectrum of accidents... No single specific accident sequence should be isolated as the one for which to plan because each accident could have different consequences, both in nature and degree. Further, the range of possible selection for a planning basis is very large, starting with a zero point of requiring no planning at all because significant offsite radiological accident consequences are unlikely to occur, to planning for the worst possible accident, regardless of its extremely low likelihood...."

Therefore, SNC did not consider the risk insights regarding any specific accident initiation or progression in evaluating the proposed changes.

The proposed changes do not involve any physical changes to plant equipment or systems, nor do they alter the assumptions of any accident analyses. The proposed changes do not adversely affect accident initiators or precursors nor do they alter the design assumptions, conditions, and configuration or the manner in which the plants are operated and maintained. The proposed changes do not adversely affect the ability of Structures, Systems, or Components (SSCs) to perform their intended safety functions in mitigating the consequences of an initiating event within the assumed acceptance limits.

Therefore, the proposed changes to the EAL schemes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Farley RE-60 Radiation Monitors

The proposed changes to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors do not impact the physical function of SSCs or the manner in which SSCs perform their design function. The proposed change does not adversely affect accident initiators or precursors, nor alter design assumptions.

While the proposed change will alter the design configuration of the plant by replacing and relocating radiation monitors RE-60-A, B and C and by abandoning RE-60D, the proposed change does not alter or prevent the ability of operable SSCs to perform their intended function to mitigate the consequences of an initiating event within assumed acceptance limits. Similarly, while these instruments monitor and provide information on the consequences of an accident, the radiation monitors perform no safety function that directly mitigates the consequences of an accident. Further, no operating procedures or administrative controls that function to prevent or mitigate accidents are affected by the proposed change.

Therefore, the proposed change to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

Adoption of NEI 99-01, Revision 6 EAL Schemes

The proposed changes to SNC's EAL schemes to adopt the NRC-endorsed guidance in NEI 99-01, Revision 6, do not involve any physical changes to plant systems or equipment. The proposed changes do not involve the addition of any new plant equipment. The proposed changes will not alter the design configuration, or method of operation of plant equipment beyond its normal functional capabilities. All SNC ERO functions will continue to be performed as required. The proposed changes do not create any new credible failure mechanisms, malfunctions, or accident initiators.

Therefore, the proposed changes to the EAL schemes do not create the possibility of a new or different kind of accident from those that have been previously evaluated.

Farley RE-60 Radiation Monitors

The proposed change to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors does not impact the Farley accident analysis. The change does not involve a physical alteration of safety-related SSCs (i.e., no new or different type of safety-related SSC will be installed), a change in the method of plant operation, or new operator actions. The proposed change will not introduce failure modes that could result in a new accident, and the change does not alter assumptions made in the safety analysis. The proposed change revises EALs, which establish the thresholds for placing the plant in an emergency classification. EALs are not initiators of any accidents.

Therefore, the proposed change to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3) Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

Adoption of NEI 99-01, Revision 6 EAL Schemes

The proposed changes to SNC's EAL schemes to adopt the NRC-endorsed guidance in NEI 99-01, Revision 6, do not alter or exceed a design basis or safety limit. There is no change being made to safety analysis assumptions, safety limits, or limiting safety system settings that would adversely affect plant safety as a result of the proposed changes. There are no changes to setpoints or environmental conditions of any SSC or the manner in which any SSC is operated. Margins of safety are unaffected by the proposed changes to adopt the NEI 99-01, Revision 6 EAL scheme

guidance. The applicable requirements of 10 CFR 50.47 and 10 CFR 50, Appendix E will continue to be met.

Therefore, the proposed changes to SNC's EAL schemes do not involve any reduction in a margin of safety.

Farley RE-60 Radiation Monitors

Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed change to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors does not impact operation of the plant or its response to transients or accidents. The change does not affect the Technical Specifications or the Operating License. The proposed change does not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed change.

Additionally, the proposed change will not relax any criteria used to establish safety limits and will not relax any safety system settings. The safety analysis acceptance criteria are not affected by this change. The proposed change will not result in plant operation in a configuration outside the design basis. The proposed change does not adversely affect systems that respond to safely shutdown the plant and to maintain the plant in a safe shutdown condition.

Therefore, the proposed change to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors does not involve a significant reduction in a margin of safety.

Based on the above, SNC has determined that the proposed changes to the SNC EAL schemes and to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors do not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), "Issuance of Amendment," and accordingly, a finding of "no significant hazards consideration" is justified.

d. Conclusions

In conclusion, and based on the considerations discussed above: (1) the health and safety of the public will not be endangered by the proposed changes to the SNC EAL schemes and to the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors, (2) the changes will be in compliance with the NRC'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.

4. STATE CONSULTATION

SNC has discussed the adoption of NEI 99-01, Revision 6 EAL schemes with state and county officials.

5. ENVIRONMENTAL CONSIDERATION

In accordance with 10 CFR 51, the following information is provided in support of a

finding that the SNC fleet adoption of NEI 99-01, Revision 6 and the modification the Farley EALs resulting from the proposed modification of the RE-60 radiation monitors has no significant effect on the quality of the human environment.

Pursuant to 10 CFR 50.90, 10 CFR 50 Appendix E, Section IV.B.2, and 10 CFR 50.54(q)(4), Southern Nuclear Operating Company (SNC) has requested amendments to the licenses for the following facilities: Joseph M. Farley Nuclear Plant Units 1 and 2, Edwin I. Hatch Nuclear Plant Units 1 and 2, and Vogtle Electric Generating Plant Units 1 and 2.

Specifically, SNC proposes to adopt NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," to replace the Emergency Action Level (EAL) schemes for the facilities above that are currently based on Revision 4.

NEI 99-01, Revision 6 has been endorsed by the NRC in a letter dated March 28, 2013. (ML12346A463).

In addition, SNC proposes to revise the Joseph M. Farley Nuclear Plant, Units 1 and 2 (Farley) Emergency Plan by revising the EAL thresholds for Initiating Conditions (ICs) RG1, RS1, RA1, and RU1. The proposed change will remove Steam Generator Relief & Safety Valve Monitoring System radiation monitors RE-60A, RE-60B, and RE-60C, and the Turbine Driven Auxiliary Feedwater Pump Steam Exhaust Monitoring System radiation monitor RE-60D from the referenced ICs due to the limitations of these monitors.

SNC has determined that the proposed changes do not individually or cumulatively have a significant effect on the human environment. The proposed amendments update the EALs to the latest guidance endorsed by the NRC. These changes, including the changes to the EALs due to the modification of the Farley RE-60 radiation monitors, will not affect the quality of the human environment.

As described above, SNC has determined that operation of the subject facilities in accordance with the proposed changes does not involve a significant hazards consideration, in that it does not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety.

SNC has determined that operation of the subject facilities in accordance with the proposed changes does not authorize a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite. The proposed changes are unrelated to any aspects of plant construction or operation that would introduce any changes to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, or other effluents) or affect any plant radiological or non-radiological effluent release quantities. Furthermore, these changes do not diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation.

SNC has determined that operation of the subject facilities in accordance with the proposed changes does not result in a significant increase in individual or cumulative

occupational radiation exposure. The proposed changes will not affect the construction or operation of the nuclear plants as to introduce any changes to the amount of occupational radiation exposure.

In conclusion, SNC has determined that anticipated construction and operational effects of the proposed amendments do not involve 1) a significant hazards consideration, 2) a significant change in the types of or significant increase in the amounts of any effluents that may be released offsite, or 3) a significant increase in the individual or cumulative occupational radiation exposure. Consequently, the proposed amendment will not have a significant effect on the quality of the human environment.

6. REFERENCES - Adoption of NEI 99-01, Revision 6 EAL Schemes

- a. NEI 99-01, Revision 6, "*Development of Emergency Action Levels for Non-Passive Reactors*", dated November 2012. (ADAMS Accession Number ML110240324)
- b. Letter from Mark Thaggard (U.S. Nuclear Regulatory Commission) to Susan Perkins-Grew (Nuclear Energy Institute) - *U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 99-01, Revision 6, November 2012*, dated March 28, 2013. (ADAMS Accession Number ML12346A463)
- c. RIS 2003-18, "*Use of NEI 99-01, Methodology for Development of Emergency Action Levels*," dated October 8, 2003. (ADAMS Accession Number ML032580518)
- d. RIS 2003-18, Supplement 1, "Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels," dated July 13, 2004. (ADAMS Accession Number ML041550395)
- e. RIS 2003-18, Supplement 2, "Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels," dated December 12, 2005. (ADAMS Accession Number ML051450482)
- f. NRC Safety Evaluation related to Exelon License Amendments dated July 28, 2015. (ADAMS Accession Number ML15141A058)

7. REFERENCES - Farley RE-60 Radiation Monitors

- a. U.S. NRC Regulatory Guide 1.97, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants," Revision 2.
- b. Letter from Southern Nuclear Operating Company, to U.S. Nuclear Regulatory Commission - "Vogtle Units 1 and 2 - License Amendment Request to Revise the Emergency Plan," dated August 20, 2013 (ADAMS Accession No. ML13233A112).
- c. Letter from Southern Nuclear Operating Company, to U.S. Nuclear Regulatory Commission - "Vogtle Electric Generating Plant, Units 1 and 2 - Response to the Request for Additional Information Regarding License Amendment Request to Revise the Emergency Plan," dated February 24, 2014 (ADAMS Accession No. ML14055A483).
- d. Letter from Southern Nuclear Operating Company, to U.S. Nuclear Regulatory

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Commission - "Vogtle Units 1 and 2- Clarifying Information Regarding License Amendment Request to Revise the Vogtle Electric Generating Plant Emergency Plan," dated June 12, 2014 (ADAMS Accession No. ML14163A580).

- e. Letter from Nuclear Regulatory Commission, "Vogtle Electric Generating Plant, Units 1 and 2 - Issuance of Amendments Regarding Emergency Plan (TAC NOS. MF2594 AND MF2595)," dated September 30, 2014 (ADAMS Accession No. ML14170A911).