Southern Nuclear

Regulatory Affairs

3535 Colonnade Parkway
Birmingham, AL 35243
205 992 5000 tel
205 992 7601 fax

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

Supplement To
License Amendment Request to Revise the Emergency Plan to Change Staffing and
Extend Staff Augmentation Times for Emergency Response Organization Positions

Ladies and Gentlemen:

On June 30, 2020 (ML20192A140), pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC) requested amendments to the licenses for the plants and units listed above. The license amendment request (LAR) proposed to revise the SNC Standard Emergency Plan (SEP), including the Site Annexes, to change the emergency response organization (ERO) staffing composition and extend staff augmentation times from 75 to 90 minutes.

On July 23, 2020 (ML20209A004), the U.S. Nuclear Regulatory Commission (NRC) staff provided the results of their acceptance review and concluded that technical information was not provided in sufficient detail to enable the NRC staff to complete its detailed review. In order to make the application complete, the NRC staff requested that SNC supplement the application by August 11, 2020.

SNC's response is enclosed with a general response in Enclosure 1 and a detailed technical analysis table in Enclosure 2. In preparing the enclosed Supplement, SNC decided to make one change in the original LAR's ERO staffing composition. In addition to the 48 augmentation responders, SNC will augment an additional two Radiation Protection technicians. A revised mark-up of the SEP Table 1 is provided in Enclosure 3.

SNC requests the same approval and implementation schedule as requested in its original application.

The conclusions of the No Significant Hazards Consideration Determination Analysis and Environmental Consideration contained in the original LAR have been reviewed and are unaffected by this supplement.

This letter contains no sensitive information and no new regulatory commitments. If you have any questions, please contact Jamie Coleman at 205.992.6611.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 11, 2020.

Cheryl A. Gayheart
Regulatory Affairs Director
Southern Nuclear Operating Company

CAG/efb/snm

Enclosures:

1. SNC Response to NRC Request for Supplemental Information
2. Supplemental Analysis Table
3. SNC Standard Emergency Plan Revised Table 1

cc: NRC Regional Administrator, Region II
NRC Project Manager – Farley, Hatch, Vogtle 1 & 2, Vogtle 3-4
NRC Senior Resident Inspector – Farley, Hatch, Vogtle 1 & 2, Vogtle 3-4
Director, Alabama Office of Radiation Control
Director, Environmental Protection Division – State of Georgia
SNC Document Control RTypes: CFA04.054; CHA02.004; CVC7000; VND.LI.L00

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Supplement To
License Amendment Request to Revise Standard Emergency Plan
To Change Staffing and Extend Augmentation Times

Enclosure 1

SNC Response to NRC Request for Supplemental Information

SNC Response to NRC Request for Supplemental Information

NRC Request to Supplement

Please provide an analysis that can be used by the NRC staff to assess the impact of the proposed changes on the relief and support functions offered by the augmenting ERO staff to effectively implement the emergency plan. Supplemental information needs to be sufficiently detailed to provide justification for extension of ERO response times and proposed changes to ERO on-shift and augmentation staffing.

SNC Response

SNC appreciates the opportunity to supplement its June 30, 2020 application and agrees that the NRC staff needs additional detail to fully understand the analysis performed by SNC for the proposed changes.

The proposed SNC ERO staffing strategy for the on-shift relief and support positions and the augmentation response time is justified by the comprehensive and systematic review performed by SNC, which demonstrates that the proposed staffing is adequate to provide that initial facility accident response in key functional areas is maintained at all times and timely augmentation of response capabilities is available. SNC has compared its proposed ERO staffing against that in the Revised Table B-1 of NUREG 0654, and the strategy will be explained in detail in this Supplement. SNC has also compared its process for analyzing the proposed changes against other similar licensee submittals that have been approved by the NRC, and SNC believes that its analysis is robust and comprehensive. The analysis used to assess the impact of the proposed changes on the relief and support functions offered by the augmenting ERO staff will be explained in detail in this Supplement.

Supplemental Information on the SNC Staffing Strategy

As an introduction, SNC's proposed staffing strategy has certain components that should be considered in the evaluation of the overall effectiveness of the SNC emergency plan.

First, SNC uses an "all-call all-respond" notification of the ERO members. Essentially, all ERO members come in and the first to arrive get started. The SNC Standard Emergency Plan (SEP) requires a large one-team contingent of 50 augmentation responders. However, as unannounced drills confirm, it is probable that additional augmentation staff would arrive and all three ERFs would be activated earlier than 90 minutes. Finally, a 90-minute response time will ensure that essentially all of the plant population of employees at SNC sites will be eligible for ERO duty, except for employees living in the most remote residences.

Second, SNC activates the TSC, OSC, and the EOF upon declaration of an Alert or higher classification. (The Revised Table B-1 guidance is that the EOF is activated only upon declaration of a Site Area Emergency.) As a result, the SNC strategy, in this respect, is more

conservative as the entire ERO augmentation staff performing relief and support functions are activated together from a lower-level classification. Consequently, the SNC SEP ensures that the EOF and the entire ERO augmentation team is already activated at lower-level events in case the emergency progresses to a higher classification.

Third, SNC's proposed Operations staff is large enough to ensure that the Shift Manager/ED is dedicated to performing emergency plan (EP) functions. At SNC, all SROs are trained as EDs, and the two Unit Shift Supervisors are qualified as EDs. The Shift Supervisors have the knowledge and skills to provide supplemental support to the Shift Manager/ED for EP functions as prioritized by the ED. And, while the fire brigade leader (FBL) SRO is not included in the emergency plan count, when not actively firefighting, the FBL SRO is also available to support the Shift Manager/ED. (Vogtle 3-4, with two control rooms, has one additional SRO over the staffs at FNP, HNP, and VEGP 1-2.)

SNC's on-shift non-licensed operators provide a competent staff, available from the beginning of initiating conditions, to perform initial troubleshooting and minor electrical and/or mechanical work to restore power and/or flow. SNC's analysis concludes that the initial tasks most needed in the first 90 minutes include the performance of troubleshooting, repairs and corrective action tasks for which operators are either already trained or will be appropriately trained upon implementation of the proposed staffing changes.

SNC's proposed alternate staffing approach provides that initial facility accident response in key functional areas is maintained at all times, and there is timely augmentation of response capabilities. By slightly extending the augmentation time for all responders 15 minutes and removing unnecessary personnel from on-shift, SNC gains operational efficiency, flexibility, and an expanded talent pool for ERO augmentation.

Supplemental Information on the Staffing Analysis Process

In designing the proposed ERO staffing strategy for the on-shift relief and support positions and the augmentation response times, SNC reviewed, considered and evaluated the proposed changes against the NRC regulations in 10 CFR 50.47(b) and 10 CFR 50 Appendix E and the NRC guidance in NUREG 0654, RIS 2016-10, Reg Guide 1.219 and NSIR/DPR-ISG-01. SNC proposed an alternate strategy than the one in the NRC Revised Table B-1 in order to gain the efficiencies of having only one ERF activation classification (Alert or Greater) and one extended augmentation time (90 minutes).

In its July 23, 2020 letter, the NRC described the SNC Performance-Based Procedure Analysis (PBPA) as "the primary basis for the proposed changes to the SNC SEP and does not address any support and relief functions that would be expected to be performed by the augmenting ERO." SNC did not intend to imply that the PBPAs were the primary basis for the proposed changes. Also, SNC did consider the EP support and relief functions when conducting the analysis. Therefore, SNC agrees that its June 30, 2020 application lacked clarity and enough detail for the NRC to gain a full understanding of the technical and functional analysis performed to support the proposed changes. SNC will provide sufficient detail in this supplement.

The analysis for the proposed changes was performed as follows. SNC assembled a multi-disciplined team at each of the four sites who worked together with Corporate employees and

outside consultants to review and evaluate the proposed changes, procedures, training, design documents, plant emergency core cooling system equipment, communications capabilities, and software. This review included analysis of the SNC SEP functions and effectiveness during numerous accidents and events. Central to this analysis was the premise that accidents and events can occur at any time based on all possible initiating conditions and that the loss of major equipment and a radiological release could start at any time. The technical analysis specifically addressed all of the emergency plan tasks and functions that must be performed by every on-shift ERO member and every augmentation ERO responder to a) preclude an emergency from escalating to a Site Area or General Emergency and b) perform mitigation tasks should fission product barriers fail and a significant radiological release occur. Therefore, this analysis considered all functions of the SNC SEP, including classifications, offsite protective action recommendations, state/local notifications, extension of allowable dose limits, direction of the on-shift staff, ERO notification, NRC communications, documentation, activation of the emergency response data system (ERDS), offsite radiological assessment, personnel accountability, and more. After these reviews and analyses were completed, SNC concluded that the SNC Emergency Plan and Annexes, as proposed in the LAR, would be effective in responding to emergencies and would continue to meet the requirements in 10 CFR 50 Appendix E and the planning standards of 10 CFR 50.47(b). Supplemental details of this analysis are included in Enclosure 2.

Due to specific considerations in the NRC guidance in RIS 2016-10, SNC, in recognizing that the proposed changes represented an alternative approach to that provided by the NRC in its revised Table B-1, decided to evaluate further and perform a supplemental PBPA at each site. RIS 2016-10 states that licensees should develop the on-shift and ERO staffing levels using a performance-based approach. This approach (a) ensures EP functions are constantly maintained, and (b) ensures that no credible accident scenarios can occur that would detract a given position from performing their assigned emergency response functions. SNC's teams designed and performed PBPAs at each site to satisfy this aspect of RIS 2016-10. By broadening the analysis to include all Emergency Operating Procedures (EOPs), Abnormal Operating Procedures (AOPs), Emergency Plan Implementing Procedures (EPIPs), and supporting procedures, SNC's supplemental PBPA approach added confidence that the proposed changes would be acceptable under almost any emergency circumstances. Again, as in the primary analysis, central to PBPAs was the premise that accidents and events can occur at any time based on all possible initiating conditions and that the loss of major equipment and a radiological release could start at any time. The PBPAs were performed under the assumption that all of the EP functions must be performed by on-shift personnel to preclude escalation of an emergency to a General Emergency or perform mitigation tasks should fission product barriers fail and a radiological release occur. Therefore, the PBPAs considered all functions of the SNC SEP, including classifications, offsite protective action recommendations, state/local notifications, extension of allowable dose limits, direction of the on-shift staff, ERO notification, NRC communications, documentation, activation of the ERDS, offsite radiological assessment, personnel accountability, etc. Uniquely, the PBPAs established a supplemental justification for relying on the training and expertise of non-licensed operators for the scope of repair and corrective actions that would be needed in the first 90 minutes after declaration of an Alert or greater emergency. According to the PBPAs, such actions would be limited to the kinds of

troubleshooting, limited maintenance, minor repairs, and actions to promptly restore a non-functional component or system (e.g. resetting a relay, opening a valve, or closing a breaker.) The PBPAs also provided supplemental support for the conclusion that the Shift Manager/ED duties can be constantly maintained from the beginning of the event to 90 minutes, including duties that could be augmented earlier by the Revised Table B-1 guidance, such as, coordination of important EP functions (technical support, radiation protection (RP), troubleshooting, and repair teams).

Supplemental Information on Enhancements

SNC's technical evaluations, described in enclosures 3, 5, 7, and 9 of the original application, included a review of each site's ECCS systems and engineered safety features (ESF) capabilities, including protection against single failures, to establish a basis for appropriately crediting the robust plant designs in support of the proposed changes to the ERO staffing composition and extension of augmentation time. SNC's technical evaluation also included a review of each site's equipment upgrades, software enhancements, and improved technologies. SNC provides the following supplemental information on these enhancements.

a. Improved Remote Monitoring

Since 2017, SNC has improved remote monitoring programs inside the stations. Two new systems are in use. One uses 900 MHz radio signals to monitor dose rates and a new expanded WiFi system that provides expanded visual monitoring of rooms/equipment. The radio system gives RP personnel the capability to remotely monitor individuals using their electronic dosimeter as a sending unit back to a central monitoring station. This effectively allows all individuals wearing electronic dosimeters to be remotely monitored and provides RP with immediate indication of dose rates throughout the plants. The WiFi system allows Operations to place cameras in most areas of the plant based on their needs with no external support required. Other areas are accessible via cable that does not require an engineering modification for installation. These capabilities provide the Emergency Director with both real time visual monitoring of key emergency plan equipment (i.e. ECCS equipment) and dose rates for troubleshooting/repair teams.

b. Improved Communications Systems

Mobile communications along with defined bridge lines allow augmented staff to be in communication with on-shift personnel from the time they are alerted of an emergency at the stations. Augmented staff can communicate as they are in route to the stations and aid on-shift personnel even before they arrive at their emergency facilities. Common hands-free technologies with mobile phones allow ERO members to safely communicate and can increase the effectiveness of information sharing and turnover from the on-shift staff.

c. Improved Document and Record Retrieval

SNC has made improvements to systems that provide direct access to engineering and vendor documents in a short period of time. The documents are accessible

remotely. These capabilities improve access and timing of access to information for technical support, troubleshooting and repair activities.

d. Improved Dose Assessment Program

This program has been improved to provide an automatic method that greatly reduces the effort to run a dose projection. With minimal data entry, the program will perform the assessment and provide the recommended protective action recommendations. This eliminates a significant amount of time for the on-shift personnel to perform these functions including looking up PARs in procedures.

e. Procedure Improvements

Station operating procedures have been updated to reflect modifications to station equipment and to align with the reactor owners group recommendations. These changes add focus for diagnosing symptoms of events which allows for more efficient implementation of emergency plan troubleshooting and repair functions. The entire set of emergency preparedness implementing procedures were rewritten to support implementation of the SEP. This effort resulted in substantial procedural improvements, including use of simplified, focused actions which lead to a more efficient and effective emergency preparedness program.

Supplemental Information on Relief & Support Functions offered by Augmenting Staff

SNC performed a comprehensive and detailed function-by-function analysis assessing the impact of the proposed changes on the relief and support functions offered by the augmenting ERO staff to implement the emergency plan. This analysis considers the functions performed by the augmenting ERO staff to relieve and support the on-shift staffing and provides the basis for extending the ERO response time.

Using this analysis, SNC has compiled a table to document how the guidance on functions/resources from NUREG 0654 Revised Table B-1 and RIS 2016-10 align with the proposed SNC ERO staffing to demonstrate and document an assessment of the impact of the proposed changes on the relief and support functions offered by the augmenting ERO staff. The table includes the SNC basis, justification, and conclusions for each EP functional area. See Enclosure 2.

In summary, SNC, considering NRC guidance, has performed a comprehensive and rigorous process to develop an alternate ERO staffing approach. The Revised Table B-1 and supporting RIS were used as templates to evaluate and document SNC's proposed changes. Variations from the NRC guidance are compensated for as discussed in Enclosure 2.

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License Amendment Request to Revise Standard Emergency Plan
To Change Staffing and Extend Augmentation Times

Enclosure 2

Supplemental Analysis Table

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
Notification and Communication	**Communications**		
To adequately support the elimination or extension of the two 60-minute responders, the licensee should show that two on-shift positions are identified to fill the 60-minute responder's role to "Notify licensee, State, local and Federal personnel [and] maintain communication." The licensee should show that these positions are not assigned other tasks that may prevent the timely performance of their assigned notification or communication functions, as specified in the emergency plan. The licensee should discuss how communication technologies employed by the proposed on-shift staff will support timely, effective, and reliable notifications. Additionally, the communications technologies should be referenced in the emergency plan to ensure	Communicate EAL and PAR classifications to offsite response organizations (OROs), including the NRC, until relieved. On-shift – One Communicator (other personnel may be assigned this function if no collateral duties are assigned that are beyond that individual's capability.) Within 60 minutes from an Alert or Greater, augment with two Communicators in the TSC. One communicator for the NRC and one communicator for OROs. Within 60 minutes from a Site Area Emergency or Greater, augment with one Communicator in the EOF. As needed: Within 90 minutes of Alert or Greater, augment with	In alignment with the RIS 2016-10 guidance for extending two 60-minutes responders to 90 minutes, SNC has 2 dedicated on-shift communicators, one for communicating EALs and PARs to the offsite agencies (ENN Communicator), and one for communicating with the NRC on an open line (ENS Communicator). The on-shift ENN Communicator function is normally performed by the unaffected unit's unit operator (UO). The UO is a licensed reactor operator and can perform this intermittent function because the primary operation of the unaffected unit is being accomplished by the unaffected unit's operator-at-the-controls (OATC). The ENS Communicator is normally performed by the unaffected unit's Shift Supervisor or another SRO. SNC studies have confirmed that the 2 on-shift communicators are able to perform their E-plan roles effectively and are not assigned other tasks that would prevent timely performance of their communication duties. Technological advances have made the ENN communication process more efficient, thereby reducing the impact to on-shift personnel. Offsite agency notification has progressed from being performed using paper copies with each line communicated aloud (line-by-line) to the point that the ENN Communicator can now connect/communicate with all offsite agencies instantly and confirm receipt promptly using a bridge line. The software used to create the electronic form (WebEOC) allows for easy population of information using drop-down lists and other features (e.g. the EAL description is automatically populated when the appropriate EAL number is selected, auto population of time/date, etc.). The software also improves accuracy through features that highlight omitted information and provide for validation prior to submittal. These tools allow the ENN communication process to be completed in an effective and reliable manner well within the time requirements for the task.	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. Within 90 minutes of an Alert or higher, SNC provides relief for the two dedicated on-shift Communicators in the TSC and the EOF. In the TSC, SNC augments with an ENS Communicator who

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
that future changes are reviewed using the RG 1.219 change process, as they were used as the basis for the proposed change.	one Communicator for NRC Communications if needed.	The ENS communicator can use a wireless headset that is dialed in as an open line to the NRC. This allows the individual to not be tied to a wired telephone. This individual can fulfil the ENS communication function while assisting as needed with other prioritized tasks. The intermittent nature of the communications needed by the NRC during the onset of an event (prior to augmentation), along with technological advances (wireless headset), allows the ENS Communicator function to be accomplished by the unaffected unit's Shift Supervisor or another SRO, without disrupting other duties. Communication technologies are appropriately documented in the SNC Emergency Plan or procedures and subject to SNC's 50.54(q) change process that follows the guidance in R.G. 1.219. SNC has concluded that the proposed changes are effective and the addition of augmented support for the period from 60-90 minutes is not necessary.	reports to an augmented Operations Supervisor. In the EOF, SNC augments with both an ENS Communicator and an ENN Communicator who report to an Emergency Communication Coordinator, as the offsite agency notification function shifts to the EOF.
Emergency Operations Facility Director	**Command & Control**		
Per the guidance in NUREG-0654, Table B-1, an augmented "Senior Manager" should fulfill the "Emergency Operations Facility Director" major task at 60 minutes. A licensee requesting a change in staff augmentation requirements that would have the lead manager unavailable to assume command and	1) Provide overall ERO command and control until relieved. 2) Approve emergency action level (EAL) and/or PAR classifications until relieved. 3) Authorize personnel dose extensions until relieved.	1) The Emergency Director role is filled at beginning of event classification by the Shift Manager. The primary function of overall ERO command and control resides with the Shift Manager until they are relieved by the augmented team in the TSC and EOF. Oversight of the individual units remain with the unit Shift Supervisors. All SROs on-shift are trained as Emergency Directors, so the opportunity for assistance and peer checking exists as well as other needed support. Other SROs (including the two unit Shift Supervisors and the Shift Support Supervisor filling the Fire Brigade Leader role) provide supervision and direction for other functions (e.g. plant response,	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
control within 60 minutes of the initial emergency declaration should show that the on-shift staff includes enough qualified supervision such that one supervisor will assume the emergency director role. The licensee should show that the on-shift supervisor performing the manager actions will not have any additional duties (e.g., each unit under the direction of a unit supervisor, a shift manager providing oversight of the plant response, and a designated emergency director responsible for emergency plan implementation).	On-shift – One Operations Shift Manager Within 60 minutes from an Alert or Greater, augment with one Emergency Coordinator. Within 60 minutes from a Site Area Emergency or Greater, augment with one Emergency Director in the EOF.	EOP/AOP actions, fire response, dispatch and tracking of personnel sent to perform troubleshooting/repair actions) while the Shift Manager is dedicated to the ED role. If a fire emergency is not occurring, the SRO filling the Fire Brigade Leader role will be able to provide additional support regarding oversight, peer checks and other support. Prior to 90 minutes, advanced communication capabilities (e.g. using mobile devices) are available to support the on-shift ED. 2) The ED determines classifications and approves Emergency Action Level (EAL) and PAR notifications supported by peer checks from the other SROs in the control room. The on-shift ED regularly practices these functions to ensure proficiency, and they are evaluated regularly during Licensed Operator Continuing Training. For General Emergencies, PARs are available from the automated dose assessment program or from the associated procedure based on dose assessment or plant-based default determinations using wind speed and direction. 3) The non-delegable responsibility to authorize emergency exposures in excess of federal limits resides with the ED. It is highly unlikely that a personnel dose extension would be required in the first 90 minutes following declaration. However, if one is required, the on-shift RP develops documentation for the subject individual(s), dose rates in the area and time expected to be expended in the area, and the amount of dose the individual has available without extension. The extension is then presented to the ED for approval. The need for dose extensions (and possibly KI) is evaluated based on the need to: • Temporarily repair needed equipment preventing or mitigating further damage to the plant • Stopping or limiting radioactive releases to the environment.	meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. Within 90 minutes of an Alert or higher, SNC provides relief for the Shift Manager/ED with a TSC ED and an EOF ED. The TSC ED will assume command and control for all non-delegable duties with the exception of off-site notification and PAR development and approval which is assumed by the EOF ED.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
		SNC has concluded that the proposed Operations staff is effective and that augmenting this position for the period from 60-90 minutes is not necessary.	
	Emergency Classifications		
	Evaluate plant conditions and recommend emergency classifications, until relieved. On-shift – Emergency Classification Advisor (other personnel may be assigned this function if no collateral duties are assigned that are beyond that individual's capability.) Within 60 minutes from an Alert or Greater, augment with one Emergency Classification advisor in the TSC. Licensees should consider having a liaison between Operations (Control Room) and the TSC to perform this function.	The Emergency Director owns the non-delegable duty of event classification, including approval and notification. The advisory functions of evaluation of plant conditions and recommendations regarding event classification is a continuous shared responsibility owned by the entire on-shift Main Control Room operating crew. All Licensed Operators (SROs and ROs) are trained to evaluate plant conditions and recognize important parameters that can impact emergency classification levels. This information is shared among the entire Main Control Room staff, including the ED, by use of formal "updates" or 3-way Communication when conditions are identified. Therefore, SNC believes that a dedicated resource in an advisory capacity is not required to adequately fulfill the emergency classification function. Operator aids such as human factored classification wall-boards are available in the Control Rooms, TSCs and EOF, and are used to improve classification efficiency. Multiple wall-boards are available in order to allow personnel to review potential classifications concurrently. SNC has concluded that the proposed Operations staff for this function is effective and that augmenting this position for the period from 60-90 minutes is not necessary.	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. Within 90 minutes of an Alert or higher, SNC provides relief for the Shift Manager/ED with a

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
			TSC ED and an EOF ED, along with other Operations supervision that can assess the plant from the TSC. This advisory function is not officially transferred to augmented staff, as the evaluation of and response to plant conditions remains a core role of the Main Control Room team at all times.
	Supervision of Repair Team Activities		
	On-Shift: Not applicable Within 60 minutes of an Alert or Greater, augment with one Lead OSC Supervisor. Within 90 minutes of an Alert or Greater, augment with one Electrical/I&C Supervisor to the OSC, one Mechanical Supervisor to the OSC, and one RP Supervisor to the OSC.	Repair Team Supervisor duties would change in that the Maintenance positions would be removed from on-shift, and the SNC staffing strategy shifts these functions to being performed by the on-shift operating crew. For supervision of repair team activities in the first 90 minutes, the Unit Shift Supervisor directs operators to perform necessary repair and corrective action tasks and follow the priorities set by the ED. Additionally, all on-shift SROs are capable of providing the repair team supervisor function. The Operations SROs performing repair team supervisor duties direct the operations staff on a daily basis. They direct and supervise on-shift resources to perform procedure-driven actions (e.g. reset a breaker to restore power to a safety injection pump) and provides direction to troubleshoot and report field conditions (e.g. going to a pump to determine if there is any visible damage, to check power availability, evaluate local indications, etc.). Their focus is on overall control of the site. The ED is in command and primarily focused on	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
		implementation of the Emergency Plan and the associated mitigation actions, which includes restoration of equipment to mitigate an accident. These problem-solving and trouble-shooting principles are well understood by on-shift Operations SROs. Per procedures, SRO duties include signing-off on troubleshooting forms on a regular basis. The ED is thus informed on typical elements of troubleshooting but applies them via the emergency plan implementing procedure (EPIP) process. SNC's analysis concludes that the initial tasks most needed in the first 90 minutes include the performance of numerous troubleshooting, repair and corrective action tasks for which operators are already trained or will be appropriately trained upon implementation of the proposed staffing changes. Many of the repair and corrective actions that go beyond the skill of the craft for NLOs are more likely significant or complex enough that work sequence planning and tagging would be required. Tagging and work order planning is a rigorous process; rigor must be maintained during an emergency (e.g., to ensure the health and safety of our technicians). If required, Shift SROs would prepare tagging orders during the 90-minute augmentation period. The timing is such that repair activities that necessitate tagging would likely not be tagged out within 60 minutes even if technicians were on site. SNC's PBPA approach provides confidence that repairs beyond the capabilities of on-shift operators may be delayed and performed by qualified augmented technicians, which therefore supports that the supervision of these repair team activities is also not needed prior to the 90-minute augmentation time. Training operators to perform relevant first-response tasks, as described above, within the first 90-minutes provides for timely and effective response. Therefore, augmenting an OSC lead supervisor for the period from 60-90 minutes is not necessary.	Alert, SNC can augment this function with more personnel, as needed. SNC augments with a full contingent of Maintenance and RP Supervisors (Group Leads) and technicians within 90 minutes. SNC augments in the OSC with an OSC Manager, Electrical, Mechanical, and I/C Maintenance Supervisors and at least one electrician, mechanic, and I/C technician assigned to each. Within 90 minutes, SNC also augments with a TSC Maintenance Supervisor, whose primary function is to ensure clear direction is provided to the OSC Coordinators for troubleshooting/repair actions, status team actions and to provide input to the TSC ED on

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
		In conclusion, supervision by the on-shift ED with the support of other on-shift SROs from the beginning of initiating conditions and throughout the first 90 minutes provides for timely and effective response.	results to allow an informed decision on priorities and needed changes. This function is performed by the on-shift ED until relieved.
Chemistry/ Radio-chemistry	**Dose Assessments/ Projections**		
Per the guidance of NUREG-0654, Table B-1, there should be one augmented "Rad/Chem Technician" at 60 minutes. To adequately support an extension of this responder beyond 60 minutes, the licensee should demonstrate that no chemistry-related task is required to be performed within 90 minutes of an emergency declaration (i.e., a task that is necessary for implementation of emergency operating procedures or operation of safety-related equipment), or that all such tasks can be performed by the on-shift chemistry technician with no collateral duty concerns.	Perform dose assessments/projections and provide input to applicable PAR decision-maker, until relieved. On-shift: One chemist (other personnel may be assigned this function if no collateral duties are assigned that are beyond that individual's capability.) Within 60 minutes of an Alert or Greater, augment one Dose Assessor to the TSC. Within 60 minutes of a Site Area Emergency or Greater, augment 1 Dose Assessor to the EOF.	SNC has an on-shift Chemist fully dedicated to dose assessment with no collateral assignments for 90 minutes. Per the RIS and SNC's PBPAs, there are no sampling or analysis tasks performed by Chemistry that cannot be delayed until augmentation. SNC's dose assessment program has been improved to provide an automatic method that reduces the effort to run a dose projection. With minimal data entry, the program will perform the assessment and provide the recommended protective action recommendations. This reduces the amount of time for the on-shift personnel to perform these functions. The interim period from 60-90 minutes that the on-shift teams are without the augmented dose assessment capability does not adversely impact either the ability to determine entry criteria for EALs or prevent actions to mitigate/stop a declared emergency.	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. Within 90-minutes, after relieved of dose assessment duties by the EOF, the on-shift chemist

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
			reports to the TSC to perform radiochemistry duties.
Technical Support	**Engineering**		
Per the guidance of NUREG-0654, Table B-1, "Electrical" and "Mechanical" expertise should be provided by two 60-minute responders under the "Technical Support" major task. To adequately justify an extension of these responders, the licensee should show that on-shift positions are capable of filling these roles during the 90-minute period after an emergency declaration. This will require a review of site procedures to identify the technical support tasks requiring electrical and mechanical expertise that must be performed within the first 90 minutes of an emergency. The licensee should then show that there are on-shift positions with the necessary expertise to	Provide engineering coverage related to the specific discipline of the assigned engineer, until relieved On-shift: 1 Core/Thermal Hydraulics Engineer to evaluate reactor conditions. (other personnel may be assigned this function if no collateral duties are assigned that are beyond that individual's capability.) Within 60 minutes of an Alert or Greater, augment one Electrical/I&C, one Mechanical, and one Core/Thermal Hydraulic engineer to the TSC.	The Operations STA, supported by the other SROs and ROs, provides sufficient technical support until relieved within 90 minutes. The STA and other SROs comprise a competent technical staff because of the limited technical support needed within 90 minutes, plus advancements in procedures, training and technology. The STA function has been improved over the past several years. Technology upgrades have enhanced data information displays in the control room. The use of multiple monitors around the control room allow for critical parameters to be displayed, trended, and monitored by all members of the shift crew. Establishing critical parameters and then displaying them with precise trending capability allows for early indication of potential emergency escalations or other issues like an interruption of core cooling (e.g. indications that natural circulation has been interrupted). These parameters are discussed during crew briefings to raise awareness. Monitoring of these parameters are assigned to specific individuals (i.e. reactor operators or the STA). Even when a specific individual is assigned the task of monitoring a specific parameter, the fact that so many parameters can be displayed allows the whole crew to assist in identifying if a parameter is trending towards or exceeds a threshold. Critical safety function status indications are examples of such parameters. These advancements allow the STA to perform other duties. Many SROs are also qualified as STA. For example, if the Shift Support Supervisor Fire Brigade Leader is STA-qualified, under non-fire scenarios, they would be available and could be dispatched to the field to provide engineering expertise.	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. In the TSC, within 90 minutes, SNC augments with an Engineering Supervisor, Reactor Engineer, and two discipline engineers.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
perform the identified technical support functions, and that such performance will not prevent the timely performance of their other assigned functions, as specified in the emergency plan. The justification should identify procedure, training and information technology advances made since the implementation of NUREG-0654 that facilitate technical support assessments by on-shift personnel or obviate the need for such assessments within 90 minutes of an emergency declaration. Additionally, the change justification should address the ability of on-shift positions to perform troubleshooting activities without interfering with their primary emergency response duties (e.g., on-shift electrical or mechanical maintenance personnel with supervisory personnel to provide oversight).		Engineering expertise can be provided by the STA during the proposed, extended augmentation time, which is of limited duration. The qualification program for an STA encompasses many areas including electrical fundamentals and mechanical equipment operating principles. For example, the electrical fundamentals include, but are not limited to, principle of operation and basic construction of fuses, magnetic overloads, circuit breakers, thermal overloads, etc. This also includes the ability to provide technical advice to the operating crew regarding the function of electrical equipment using systems, component, and circuit data. Likewise, the curriculum also provides similar training in mechanical equipment operating fundamentals. While the STA may not be able to leave the control room during an emergency event, it is possible to use photographs from the field, which can be sent real-time electronically (e.g. via a text message) to the SROs in the control room. The sites have Wi-Fi capabilities in areas of the plant and the coverage continues to expand. Once the STA uses their expertise to diagnose an equipment issue (whether mechanical, electrical, or other), it is likely that the equipment deficiency would be more than minor and corrective action would require equipment clearance and tagging, work order preparation, spare parts, special tooling, lubricants, meters, etc. These activities would most likely not be accomplished within 90 minutes. The more likely occurrence is that a clearance and/or work sequence would be required and the shift crew would be either developing or hanging clearances in the field as the augmentation teams travel to the station (opening or racking out circuit breakers, closing isolation valves, opening drains/vents, hanging danger tags on components, etc.). As a result, augmentation of Engineers within 60 vs 90 minutes is not necessary and not consistent with the kinds of immediate technical support required. Further, a broad spectrum of Engineering support is available by mobile technology from the beginning of initiating conditions.	In the EOF, within 90 minutes, SNC augments with a technical supervisor.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
		These improvements, along with the training expertise of the STA, allows the on-shift staff to achieve success in the Technical Support function for the augmentation time extension. The PBPA approach, reviewing procedure-driven steps for EOPs/AOPs supplemental to the staffing studies meets the guidance in the RIS that states "review of site procedures to identify the technical support tasks requiring electrical and mechanical expertise that must be performed within the first 90 minutes of an emergency". The PBPA review stacked probable emergency response actions on to the procedure driven actions. SNC's PBPA demonstrated that the proposed on-shift staffing has the necessary expertise to perform the identified technical support functions, and that such performance will not prevent the timely performance of their other assigned functions, as specified in the emergency plan. Key improvements in communications and quick access to engineering and vendor information provide much greater capabilities for the on-shift staff prior to augmentation. On-shift personnel and offsite Engineers have access to information remotely. The ED can use a bridge line to communicate with and obtain assistance prior to the augmented staff arriving at the station. Advancements in mobile communications allow rapid technical support response from SNC Engineering and contractor engineers prior to 90 minutes. SNC has concluded that the proposed Operations staff for this function is effective and that augmenting this position for the period from 60-90 minutes is not necessary.	
Repair and Corrective Actions	**Repair Team Activities**		
To adequately support the elimination or extension of the mechanical, electrical, and I/C technicians, the	On Shift: Not applicable Within 60 minutes of an Alert or Greater, augment 1	SNC NLOs are trained and capable of providing electrical and mechanical support for ECCS and other equipment repair. A primary point is that most likely, any equipment degradation that goes beyond the capability of an NLO couldn't be performed within 90 minutes	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
licensee should show that on-shift positions are identified as capable of filling these roles. The justification should establish that the scope of repair and corrective actions performed by on-shift personnel would typically be limited to actions that promptly restore a non-functioning component or system to functional status (e.g. resetting a relay or logic manipulation) or place a component or system in a desired configuration such as opening a valve or closing a breaker. NRC staff will consider whether the licensee has identified any site-specific tasks that these personnel need to perform to ensure expected execution of EOPs and support of ECCS equipment. Additionally, as part of the justification for an extension request, the licensee should show that a radiological waste operator	electrician and 1 mechanic to the OSC. Within 90 minutes of an Alert or Greater, augment 1 I&C tech, and additional electricians and mechanics as needed to the OSC.	even if maintenance technicians were available. This is due to actions that need to take place to allow effective maintenance to occur safely (work order preparation, tagging, obtaining parts, etc.). Work order planning is usually necessary to provide a basic work sequence, identify and obtain parts, etc. If parts from the warehouse are needed, this would necessitate the assistance of supply chain personnel, which would be called upon by the Shift Manager or by the TSC after augmentation. In direct response to the RIS guidance for this function, SNC reviewed all EOPs, AOPs, and supporting procedures to identify site-specific tasks that personnel need to perform in addition to their EP duties to ensure expected execution of EOPs and support ECCS equipment. SNC's PBPA approach concluded that the 60-90 minute responders were not necessary. On-shift operations personnel are focused on either preventing or mitigating accidents including trouble-shooting and performing limited repairs and corrective actions that promptly restore a non-functional component or system to functional status (e.g., resetting a relay, opening a valve or closing a breaker.) The priority is on stopping or limiting radioactive releases and maintaining or restoring equipment needed for core cooling. The minor repair/corrective actions intended in both the Revised Table B-1 and the RIS are performed by the NLOs consistent with EPIPs. Drills have shown that the on-shift maintenance staff is limited in what they are able to perform because most corrective maintenance necessitates a planned work order and a tagged clearance boundary. The SNC analysis confirmed that the NLOs perform the essential first response duties of locating equipment, initial electrical/mechanical equipment diagnosis, such as opening cabinets, restoring power, restoring flow, etc. While on-shift personnel would not be expected to perform a major repair of an	SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. Within 90 minutes, SNC augments a mechanic, and electrician, and an I/C technician to the TSC who report to augmented Group Leads.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
is not needed for the period of time to 90 minutes.		ECCS pump in the first 90-minutes, they would be expected to promptly perform damage control efforts (e.g. stopping an air leak in a control line, resetting breakers remotely, taking manual control of a component locally, etc.) or promptly restore equipment function. In conclusion, under the proposed staffing, which removes Maintenance personnel from on-shift, the SNC emergency response for this function is effective. Further, augmenting this position for the period from 60-90 minutes is not necessary.	
Radiation Protection	**Radiation Protection**		
Radiation protection personnel perform multiple roles during normal and emergency plant operations. These roles include access control, personnel monitoring, and dosimetry, in addition to HP coverage for repair and corrective actions, search and rescue, first aid, and firefighting during emergency response operations. Per the guidance in Table B-1 of NUREG-0654, there should be two augmented responders at 60 minutes for the major task of "Radiation Protection." To adequately support an extension in response	On-Shift: Two RP Technicians 1) Provide qualified RP coverage for responders accessing potentially unknown radiological environments during emergency conditions. 2) Provide in-plant surveys 3) Control dosimetry and RCA access. Within 60 minutes of an Alert or Greater, augment 3 RP technicians in addition to personnel on shift to the OSC. Within 90 minutes of an Alert or Greater, augment 3 more RP technicians to the OSC. (6 augmented RP	In alignment with Revised Table B-1 guidance, SNC has proposed two on-shift RP Technicians that perform the EP functions. Additionally, SNC has determined that adequate coverage is provided for the first 90-minutes. 1) RP technicians are trained and qualified to provide coverage for troubleshooting/repair team actions where personnel may be accessing potentially unknown radiological environments. The approach was to look at procedure steps using the staffing studies and the PBPAs. This provides a baseline of actions and time for each. What was identified is that for the first 90 minutes, RP work is at the direction of the ED based on priorities. Both positions are available to perform functions such as support for troubleshooting/repair teams, and radiological surveys (both inside the plant and within the Protected Area). Drills demonstrate that two RP technicians can be successful in implementing the ED's priorities, including various duties that could arise, such as, supporting movement of security personnel due to radioactive release via 10 CFR 50.54(x) and (y).	As part of this LAR supplement, SNC is proposing to add two responders to the 48 proposed in the original LAR application. These two additional resources will be RP Technicians. SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
timing of the two radiation protection 60-minute responders to 90 minutes, the licensee should show that the on-shift HP staffing includes as a minimum, four HP technicians in total for the site. The extra HP technicians are needed for in-plant protective actions for the other personnel added to the on-shift staffing to compensate for the extension in augmentation time, and to assess any off-site releases of radioactive materials. Additionally, the licensee request should demonstrate that on-shift HP technicians will be relieved of the need to perform access control, personnel monitoring, and dosimetry-related tasks, thereby freeing these personnel to cover vital response activities (e.g., HP coverage for repair and corrective actions, search and rescue, first aid, and firefighting). NRC staff will consider whether the basis for the justification includes	responders plus the 2 on-shift for a total of 8)	2) RP technicians are trained and qualified to perform in-plant surveys in support of tasks established by the ED based on the emergency. RP takes surveys during their support of troubleshooting/repair teams. The data is compiled when the teams return. Using the staffing studies and PBPAs, the first 30 minutes or so of an event is focused on the classification, notification and if needed PAR determination. The ED then evaluates the plant systems and establishes priorities for the team. RP support of those priorities is unchanged. Surveys will be performed to support either dose assessment (for unmonitored releases), troubleshooting/repair team support or to evaluate on-site protective actions due to radioactive plume effects on station staff. The current practice of dispatching FMT 1 to the site boundary has indicated that even with a rapidly progressing event either the release is just starting or the augmented staff has arrived in 90 minutes. The RP tasks needed to support the event has typically been to support troubleshooting activities and inform the ED of survey results to assist with establishing repair priorities. 3) The 2 RP technicians on-shift are trained and qualified to issue dosimetry, establish RWP requirements, develop dose extension documents for ED approval, brief individuals on KI and provide documentation to the ED for its issuance. None of these functions are adversely impacted by shifting an on-shift RP to the expanded augmented staffing. As stated previously, currently 2 RPs provide these functions with no adverse impact on emergency response. SNC's analysis shows that the 2 on-shift RP technicians will follow the priorities set by the ED and can perform their functions effectively for the first 90 minutes, and SNC has determined that the three 60-minute responders are not necessary during the interim time from 60-90 minutes.	Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. Within 90 minutes, SNC augments with 6 RP technicians added to the 2 on-shift RP technicians for a total of 8.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
the availability of installed area, process, airborne and effluent radiation monitors, automated systems and information technology solutions, and enhanced work processes. The licensee should include supporting tools and processes that will be considered such as portal monitors, self-alarming dosimeters, and automated access control systems for the RCA that maintain active radiation work permits that are readily available if an emergency is declared (e.g., the system verifies qualifications, dose margins, and access requirement). See guidance provided above under "Considerations of the Review Process for Proposed Extensions of NUREG-0654, Table B-1 - 30-Minute ERO Augmentation Times to 60 Minutes."			
	Supervision of Radiation Protection		
	On-Shift: The Operations Shift Manager supervises RP as follows: 1) Evaluate and assess plant and offsite radiological data in the development of onsite protective actions and offsite PARs, until relieved. 2) Recommend onsite and offsite PARs to the applicable decision-maker, until relieved. 3) Direct all radiation protection activities, including field team direction, until relieved. 4) Provide relevant	In alignment with Revised Table B-1 guidance, SNC has proposed on-shift RP supervision by the Operations Shift Manager who performs the EP functions. SNC has also determined that the SM can effectively direct qualified RP technicians provide for the first 90-minutes, until relieved. 1) Onsite protective measures have not changed in the LAR. They are based on RP input to the Emergency Director who evaluates the need for protective action recommended by RP. Procedure driven actions for EOPs and AOPs are accounted for in the PBPA which supplements the staffing studies so both procedurally driven actions and emergency preparedness actions are performed concurrently. PARs are one of the Risk Significant Planning Standards and are addressed in the staffing studies. However, should classification at the General Emergency level be required during the period of the proposed, additional augmentation time (60 to 90 minutes), the ED will perform the actions as they would on initial classifications. The initial General Emergency declaration would use a plant-based PAR	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function meets the NRC guidance in the Revised Table B-1. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
	information to applicable communicators who are communicating offsite protective actions to offsite agencies, until relieved. Within 60 minutes of an Alert or Greater, augment 1 Site RP Coordinator to the TSC. Within 60 minutes of a Site Area Emergency or Greater, augment 1 RP Manager to the EOF.	using wind speed and direction. If a release is in progress, a follow-up PAR would be evaluated and promptly communicated to the OROs per the EPIPs. 2) The ED determines the on-site protective actions as well as the off-site PARs based on input, as appropriate, from on-shift RP technicians and the dose analyst rather than an SRPC from 60-90 minutes. 3) The need for on-site out-of-plant surveys are determined and prioritized by the ED based on the nature of the event. One of the two RPs on-shift will use existing vehicles and/or equipment to perform tasks in support of either on-site protective action determinations or for direct radiation readings to support dose assessment during an unmonitored release as determined by the dedicated Chemistry dose assessor. 4) The ED is and continues to be the focal point for the flow of information between the site and various offsite organizations via defined bridge lines. The communication of PARs and providing information to OROs including the NRC remains the same process as currently described in the Emergency Plan. The individuals that perform those actions remain the same in both number and training/qualification. SNC's analysis shows that the on-shift ED can supervise the qualified RP technicians effectively for the first 90 minutes, and SNC has determined that an augmented SRPC and RP Manager is not necessary during the interim time from 60-90 minutes.	this function with more personnel, as needed. In the TSC, within 90 minutes, SNC augments with an RP Supervisor. In the OSC, within 90 minutes, SNC augments with an RP/Chemistry Group Lead. In the EOF, within 90 minutes, SNC augments with a Dose Assessment Supervisor, Dose Analyst, FMT Coordinator and an FMT Communicator.
Off-site Surveys / On-site (out-of-plant) / In-Plant Surveys	**Field Monitoring Teams (FMTs)**		
Per the guidance of NUREG-0654, Table B-1, there should be four augmented responders at 60 minutes—two for off-site	On-Shift: Not Applicable Within 60 minutes of an Alert or Greater, augment 1	SNC has evaluated the Field Monitoring Team function described in the Revised Table B-1 and has proposed a slightly different alternate strategy. First, augmentation of on-shift personnel with two Field Monitoring Teams will be at 90 minutes rather than one at 60 and the other at 90	SNC's proposed 90-minute augmentation responders are listed in Table 1 of the revised SNC Standard

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
surveys, one for on-site surveys, and one for in-plant surveys. To adequately support an extension of these responders to 90 minutes, the licensee should show that the on-shift HP staffing includes a minimum of four HP technicians in total for the site. The licensee should demonstrate that two HP technicians, in excess of the number evaluated previously for extending the 30-minute responders, are available for in-plant protective actions for the other maintenance personnel that need to be added to the on-shift staffing to compensate for the extension in augmentation time for the major task of "Repair and Corrective Actions," and to perform surveys to assess any off-site release of radioactive materials. Licensees may consider alternative approaches for staffing this functional area by training non-HP personnel to perform these	RP Tech for Onsite FMT and 1 driver. Within 60 minutes of an Alert or Greater, augment 1 qualified individual for Offsite FMT Team A and 1 driver. Within 90 minutes of an Alert or Greater, augment 1 qualified individual for Offsite FMT Team B and 1 driver.	minutes. Second, a dedicated on-site out-of-plant FMT will not be used, but rather SNC will use one of the two on-shift RP Technicians for this function as directed by the ED based on priorities for the 60-90 minute interim time period. Under the proposed SNC strategy, at 90 minutes, two FMTs will be available. Each FMT has one qualified individual to perform surveys and an assistant (driver). The FMT Coordinator, with assistance by an FMT Communicator, in the EOF deploys the FMTs such that one team is stationed at the site boundary in the path of the radioactive plume based on wind direction. The second FMT is deployed downwind from the FMT stationed at the site boundary. The location varies based on wind speed, but generally the location is 1 – 2 miles from the site boundary. This ensures conditions are identified that may exceed EAL thresholds (e.g. 1 Rem TEDE and/or 5 Rem CEDE at the site boundary). For on-site surveys, an RP on-shift is sent by the ED to the Protected Area boundary for dose readings or other on-site out-of-plant surveys when required based on priorities. A driver is not needed because the RP technician does not take readings while driving in the Protected Area. Rather, the RP technician drives to the desired location, based on wind direction, and then takes the readings. Thus, a 100% dedicated on-site, out-of-plant FMT is not needed at 60 minutes. When augmentation is completed and the FMT function is turned over to the EOF, the on-shift RP technician is released to the OSC, when activated. This resource can then support other priorities established by the TSC ED. Full augmentation of RP technicians provides adequate resources to perform assessment of radiation and contamination in support of troubleshooting, repair teams, in-plant and out-of-plant surveys, and the remainder of RP functions per the SEP. SNC has concluded that providing one offsite FMT for the period from 60-90 minutes is not	Emergency Plan in the LAR. SNC augments a minimum of 50 total responders. SNC's proposed augmentation staff for this function differs slightly from the NRC guidance in the Revised Table B-1. However, because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function with more personnel, as needed. SNC's approach is based on two sets of FMTs (2 qualified individuals with assistants for a total of 4) augmented and deployed as described. SNC uses an on-shift RP technician for onsite surveys in accordance with the ED's direction and priorities as described.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
survey tasks. See guidance provided above under "Considerations of the Review Process for Proposed Extensions of NUREG-0654, Table B-1 30-Minute ERO Augmentation Times to 60 Minutes."		necessary. The EP functions identified in Revised Table B-1 continue to be met with the proposed changes without adverse impact on the SEP or the general public.	
	Security On-Shift: Staff per the site-specific security plan. Within 60 minutes of an Alert or Greater, augment 1 security liaison to the TSC to coordinate security-related activities and information to the Emergency Coordinator.	The Security Plans for each station are aligned with the Standard Emergency Plan to provide a Security Supervisor on-shift. The duties remain the same as does the interface with the on-shift Emergency Director. Duties during the additional augmentation time from 60-90 minutes are consistent with those starting at the beginning of a declared event. The approach for this position remains unchanged from the existing version of the Emergency Plan. The on-shift Security Supervisor reports to the on-shift Emergency Director and then reports to TSC to continue the duties during turnover of Command and Control to the TSC Emergency Director. The duties are the same including determining security plan compliance and compensatory actions due to plant or barrier damage. Movement of security resources due to radiological conditions, possible dose extensions or consumption of KI are discussed with on-shift RP and the ED. Decisions are provided and subsequently implemented by on-shift RP (for completion of dose extensions or issuance of KI) with approval of the ED. Movement of security is performed either in accordance with the Security Plan or under 10 CFR 50.54(x) and (y). The ED completes the X and Y documentation per SNC procedures and the Security Supervisor directs Security resources to the appropriate locations. Hostile Action based events remain unchanged. In a Hostile Action based event, the Augmented ERO may not be able to access the site within the required augmentation time. Many if not all the processes/tools in place for that type of event	Within 90-minutes, the Security Supervisor reports to the TSC. The Security Supervisor's duties do not change.

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
		(i.e. communication, remote on-shift staff support, access to plant information for troubleshooting, etc.) will also be available for non-Hostile Action based emergency declarations.	
	Media Information		
	On-Shift: Not Applicable Within 60 minutes, of an Alert or Greater, staff to address media inquiries. Within 60 minutes, of an Site Area Emergency or Greater, staff to perform JIC-related tasks.	The SNC SEP states that after the initial notification of an emergency at the Alert classification or higher, the Public Information Director will coordinate with the EOF Emergency Director and affected OROs and determine whether to staff the JIC. SNC has improved public communication such that within minutes after a classification, the SNC media personnel can provide information to the public. SNC continues to follow the existing Standard Emergency Plan. Pre-planned and drafted media releases support quick dissemination of information to the public. SNC currently uses a JIS approach to media and will continue to under this proposed LAR and provide media information within 60 minutes of an Alert or higher. Therefore, SNC concludes that augmenting JIC staff during the period from 60-90 minutes is not necessary.	Within 90 minutes, SNC augments a news writer to the EOF. Because SNC uses All-Call/All-Respond from an Alert, SNC can augment this function as needed.
	Information Technology		
	If emergency plan functions rely on computer-based equipment, provide IT support. On-Shift: Not Applicable Within 90 minutes of an Alert or Greater, augment	SNC has IT support staff on the all-call/all-respond list. Therefore, IT Support is available if problems arise with the computer equipment in the ERFs. The EOF Manager and TSC Manager are responsible to maintain the facility equipment including computer equipment. In addition, SNC's ERO team members have the basic computer skills necessary to troubleshoot most problems that arise. Issues requiring additional skill are addressed through the SNC IT call-in process.	Because SNC has IT personnel on its all call/all respond list from an Alert, SNC can augment this function as needed. Within 90 minutes, SNC augments an EOF Manager and TSC

SNC Supplemental Analysis Table

RIS 2016-10 (Based on NUREG 0654 Rev 1 guidance)	NUREG 0654 Revised Table B-1 Guidance (June 12, 2018)	On-shift performance until Augmented	90-minute augmentation (TSC, OSC, EOF)
	with a qualified individual to ensure IT equipment is operable in the TSC. Within 60 minutes of a Site Area Emergency or Greater, augment with a qualified individual to ensure IT equipment is operable in the EOF.	SNC has concluded that augmenting a specific IT individual to the TSC and EOF is not necessary because SNC IT support personnel have an on-call support staff that responds to critical IT needs company-wide. The IT on-call team is supplemental to the SNC ERO, but is available to the ERO as needed.	Manager who are responsible for maintaining the computer equipment operable.

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

License Amendment Request to Revise Standard Emergency Plan
To Change Staffing and Extend Augmentation Times

Enclosure 3

SNC Standard Emergency Plan Revised Table 1

Major Functional Area	Major Task	Position Title	Augmented Responders 90 min
Emergency Direction and Control	Command and Control	Emergency Director (TSC)	1
		Emergency Director (EOF)	1
Notification/ Communication	Licensee, Local/State and Federal communications	Emergency Communication Coordinator (EOF) ENS Communicator (EOF & TSC) ENN Communicator (EOF) ERF Communicators (OSC, TSC, & EOF)	7
Radiation Protection Actions and Supervision	Offsite Dose Assessment	RP Supervisor (TSC)	1
		Dose Assessment Supv. & Analyst (EOF)	2
		HPN Communicators (EOF & TSC)	2
	Offsite Surveys	FMT Lead and Assistant (OSC) (two each)	4
		FMT Coordinator and Communicator (EOF)	2
	In-plant / Onsite (out-of-plant) Surveys Dosimetry / Access Control	RP/Chemistry Group Lead (OSC) 8 RP Technicians (OSC) (6 augmented and 2 from on-shift)	9
Engineering	Technical Support	Engineering/Tech Supervisor (TSC & EOF)	2
		Reactor Engineer (TSC)	1
		Engineering Support (TSC)	2
Maintenance, and Other Support	Repair and Corrective Actions	ERF Manager (OSC/TSC/EOF)	3
		Mechanical Group Lead and Tech (OSC)	2
		Electrical Group Lead and Tech (OSC)	2
		I & C Group Lead and Tech (OSC)	2
		Operations Group Lead/Supv. (OSC & TSC)	2
		Security Supervisor/Coordinator (TSC & EOF)	2
		Maintenance Supervisor (TSC)	1
		ORO Coordinator and News Writer (EOF)	2
Total			**50**

Table 1

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