

Southern Nuclear Operating Company

ND-19-0753

Enclosure

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

EMERGENCY PREPAREDNESS

COMMUNICATIONS ASSESSMENT

(This Enclosure consists of 39 pages, including this cover page)

BACKGROUND

10 CFR 50.54(f) Request for Information – Near Term Task Force (NTTF)
Recommendation 9.3 - Communications

Nuclear Regulatory Commission (NRC) Requested Actions

It is requested that addressees assess their current communications systems and equipment used during an emergency event. It is also requested that consideration be given to any enhancements that may be appropriate for the emergency plan with respect to communications requirements of 10 CFR 50.47, Appendix E to 10 CFR Part 50, and the guidance in NUREG-0696. Also, addressees are requested to consider the means necessary to power the new and existing communications equipment during a prolonged SBO.

NRC Request Assumptions

The NRC requests that the following assumptions be made in preparing responses to this request for information: the potential onsite and offsite damage is a result of a large-scale external event (LSEE) resulting in a loss of all alternating current (AC) power. In addition, assume that the LSEE causes extensive damage to normal and emergency communications systems both onsite and in the area surrounding the site. It has been recognized that following a LSEE that AC power may not be available to cellular and other communications infrastructures.

NRC Requested Information

Addressees are requested to provide an assessment of the current communications systems and equipment used during an emergency event to identify any enhancements that may be needed to ensure communications are maintained during a LSEE meeting the conditions described above.

Assessment Methodology

Nuclear Energy Institute (NEI) 12-01, *"Guidelines for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities,"* (NEI 12-01) provides the methodology for the preparation of assessments to determine the required staff necessary for responding to a beyond design basis external event that affects multiple units at a site, and the identification of enhancements that could provide a means to power equipment needed to communicate on-site and offsite during an extended loss of AC power event. NEI 12-01 was endorsed by the NRC in May of 2012.

SUMMARY

The specific requests, identified within the communications section of Recommendation 9.3: Emergency Preparedness, are restated below. Southern Nuclear Company's (SNCs) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 response to the requested information is provided below after each request.

VEGP Units 3 and 4 are currently under construction and utilize the Westinghouse AP1000 design (AP1000). The inherent safety features of the AP1000 are acknowledged in NRC Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," with the following statement:

The design bases of Vogtle Units 3 and 4 includes passive design features that provide core, containment and SFP cooling capability for 72 hours, without reliance on alternating current (ac) power. ... The NRC staff reviewed these design features prior to issuance of the combined licenses for these facilities and certification of the AP1000 design referenced therein. The AP1000 design also includes equipment to maintain required safety functions in the long term (beyond 72 hours to 7 days... The staff concluded in its final safety evaluation report for the AP1000 design that the installed equipment (and alternatively, the use of transportable equipment) is capable of supporting extended operation of the passive safety systems to maintain required safety functions in the long term.

1. Addressees are requested to provide an assessment of the current communications systems and equipment used during an emergency event to identify any enhancements that may be needed to ensure communications are maintained during a large-scale natural event meeting the conditions described above. The assessment should:

- *Identify any planned or potential improvements to existing onsite communications systems and their required normal and/or backup power supplies,*

VEGP Units 3 and 4 Response:

No improvements have been identified to existing onsite communications systems. Evaluation using both deterministic and Probabilistic Risk Assessment (PRA) criteria has determined that there are no critical human actions necessary for post-accident mitigation due to the predominant use of passive safety features in the AP1000 design, as described above. Therefore, there is a significantly reduced dependence on human actions following an event at VEGP Units 3 and 4, and the necessity for onsite communications between plant staff during a prolonged station blackout (SBO), prior to the availability of off-site resources, is minimized.

- *Identify any planned or potential improvements to existing offsite communications systems and their required normal and/or backup power supplies,*

VEGP Units 3 and 4 Response:

No improvements have been identified to existing offsite communications systems.

- *Provide a description of any new communications system(s) or technologies that will be deployed based upon the assumed conditions described above, and*

VEGP Units 3 and 4 Response:

Sufficient satellite telephones will be procured and deployed enabling use by either unit's Main Control Room (MCR) or the Technical Support Center (TSC) until either the RAPIDCASE or RAPIDCOM systems are deployed. Two of the handheld satellite phones will be located in each MCR, and one will be maintained in the TSC. Internal batteries and external AC/DC power sources can be used to power these hand-held portable devices. However, operation of satellite phones physically within the MCR and TSC will not be assured when using the hand-held devices.

A rapidly deployable communications kit, RAPIDCASE, and a mobile communication system, RAPIDCOM, will be procured and deployed which each have the capability to supply multiple satellite phone lines within the TSC and the MCR. The RAPIDCOM system will also supply a UHF/VHF capability supporting multiple radio stations in the TSC and in each MCR.

The RAPIDCASE will be expected to be deployed within six hours from the start of the extended loss of all AC power. These units will be stored in reasonably protected locations at the Vogtle site which are expected to survive the initial LSEE. Specific locations are to be determined when allowed by the completion of construction activities. The RAPIDCOM can be deployed within six hours after a debris path has been cleared.

- *Provide a description of how the new and/or improved systems and power supplies will be able to provide for communications during a loss of all AC power.*

VEGP Units 3 and 4 Response:

The telephone/page system is supplied with a two-hour Uninterruptible Power Supply (UPS) and will provide for initial notifications and directions to on-site personnel, the on-shift Emergency Response Organization (ERO) personnel, and in-plant response teams for the initial period after the LSEE occurrence until AC power is restored, or alternative communications are available. In the event the telephone/page system is unavailable due to the event, a multi-faceted approach will be utilized to ensure onsite communications are maintained:

- If site-wide announcements are unable to be made following a LSEE, personnel onsite will be trained to rally at a pre-determined position. Runners will then be sent to these locations to provide further direction to all staff.
- On-shift Nuclear Security Officers will make rounds throughout the Owner Controlled Area while making announcements via loudspeakers to communicate direction to individuals on the site.
- The combination of these means will be capable of notifying essentially 100% of the plant staff within approximately 30 minutes of the LSEE.

As part of the standard design, the AP1000 has a multiloop sound-powered system throughout the plant for refueling, startup, and maintenance testing. In limited cases, this system will be utilized for operators to communicate with the MCR to perform in-field operations.

Battery operated satellite phones will be maintained in a charged condition and will not be dependent on the availability of external power, nor will they rely on existing onsite or off-site terrestrial infrastructure.

The RAPIDCASE kit will be maintained in a charged condition and operation of the kit will be independent of the availability of AC power. Additionally, the kit will not rely on existing AC powered onsite or off-site communications infrastructure.

The RAPIDCOM system will be self-powered via a propane-fueled generator located on board with a dedicated 72-hour fuel supply. This system can support both satellite and radio communications if needed for the ERO, including field monitoring teams. The system does not rely on the availability of on-site or nearby off-site terrestrial infrastructure, which are assumed to be affected by the postulated LSEE.

2. *Addressees are requested to describe any interim actions that have been taken or are planned to be taken to enhance existing communications systems power supplies until the communications assessment and the resulting actions are complete,*

VEGP Units 3 and 4 Response:

No interim actions are needed since VEGP Units 3 and 4 are still completing construction. Until the units are fully constructed and all Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) have been completed, there is no requirement for functional communications systems and equipment for use during an emergency event.

- *Provide an implementation schedule of the time needed to conduct and implement the results of the communications assessment.*

VEGP Units 3 and 4 Response:

Since much of the VEGP Units 3 and 4 communications capabilities have not yet been constructed, completion of the equipment installation per the approved system design documents is still subject to various ITAAC which must be completed, with all Section 52.99(c)(1) ITAAC Closure Notifications submitted to NRC, to support the Commission finding that all acceptance criteria are met prior to plant operation. Examples of ITAAC related to design basis emergency communications capabilities and demonstration of their use include:

- 486 (ITAAC No. 2.3.19.02a) demonstrates the as-built configuration of the plant Communications System (EFS), including the telephone/page as well as sound-powered equipment capabilities.
- 847 (ITAAC No. E.3.9.03.00.01) demonstrates the capability for communications between the Main Control Room (MCR), Operations Support Center (OSC), TSC, Emergency Operations Facility (EOF), principal State and local emergency operations centers (EOCs), and radiological field monitoring teams as described in the VEGP Emergency Plan annexes.
- 848 (ITAAC No. E.3.9.03.00.02) demonstrates the capability for communications from the MCR, TSC, and EOF to the NRC headquarters and regional EOC as described in the VEGP Emergency Plan annexes.

ND-19-0753
Enclosure
Emergency Preparedness
Communications Assessment

- 866 (ITAAC No. E.3.9.07.01.02) Demonstrates the capability to warn and advise onsite individuals of an emergency, including:
 - Employees not having emergency assignments,
 - Visitors,
 - Contractor and construction personnel, and
 - Other persons who may be in the public access areas, on or passing through the site, or within the owner-controlled area.
- 870 (ITAAC No. E.3.9.08.01.01) Demonstrates during an Emergency Preparedness (EP) exercise the ability to notify responsible state and local government agencies within the plume exposure Emergency Planning Zone (EPZ) within 15 minutes and notify the NRC immediately after the completion of the notification to the State and local authorities and no later than 60 minutes after declaring an emergency.

Completion criteria for these ITAAC will ensure that installation and testing of the necessary communications capabilities as described in the facility design basis are completed prior to VEGP initial fuel load on each unit.

The following table provides the implementation milestones and projected completion dates for the construction-related activities, as well as improvements to the communications capabilities during a LSEE identified as a result of this assessment.

Milestone		Estimated Completion Date
1	EP Communications Implementation Plan Approved	3 rd quarter 2019
2	Develop implementation procedures	3 rd quarter 2019
3	Procure satellite phones	4 th quarter 2019
4	Identify staff that require training	4 th quarter 2019
5	Complete training	2 nd quarter 2020
6	Complete VEGP Unit 3 Communication Systems installation per Part 52 license	3 rd quarter 2020
7	Complete Unit 3 ITAAC communications-related items	4 th quarter 2020
8	Complete VEGP Unit 4 Communication System installation per Part 52 license	1 st quarter 2021
9	Complete Unit 4 ITAAC communications-related items	3 rd quarter 2021
10	Letter to NRC documenting completion	4 th quarter 2021

Section 1 – Emergency Response Communication Systems (Current Designed Capabilities)		
Communications Systems/Equipment (IDENTIFY AS APPROPRIATE)	Alternate methods (IDENTIFY AS APPROPRIATE)	System/Equipment Description
<p>Wireless Telephone System (aka ASCOM)</p> <p>(FSAR, Section 9.5.2.2.1)</p> <p>(SNC SEP - VEGP Units 3 & 4 Annex section 5.2)</p>	<ul style="list-style-type: none"> • Telephone/Page System • PABX Telephone System • Sound-powered phones • Motorola Radios (150/450 MHz) • Local Commercial Telephone System • Emergency Notification System (ENS)/Health Physics Network (HPN) • Emergency Notification Network (ENN) • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The wireless telephone system consists of wireless portable handsets, hands-free type portable headsets, a comprehensive antenna system, and necessary electronics equipment. The wireless telephone system is the primary means of communication for plant operations and maintenance personnel.</p> <p>The wireless telephone system has the ability to dial fixed PABX telephone stations and vice versa. The wireless system has the capability to access the telephone-page system and the capability to access offsite emergency communication links.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>
<p>Telephone/Page System (aka Plant Public Address System (PA))</p> <p>(FSAR, Section 9.5.2.2.2)</p> <p>(SNC SEP - VEGP Units 3 & 4 Annex section 5.2)</p>	<ul style="list-style-type: none"> • Wireless Telephone System • Motorola Radios (150/450 MHz) • Local Commercial Telephone System • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The primary means for notification of personnel within the protected area is the public address (PA) system using by recognizable tone signals and/or verbal announcements specific to each of the classes of emergency (Notification of Unusual Event, Alert, Site Area Emergency, General Emergency) and fire.</p> <p>Power to the telephone/page system is provided from the non-Class 1E DC and uninterruptible power supply system sized to supply power for 120 minutes after a loss of AC power.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>

<p>Private Automatic Branch Exchange (PABX) Telephone System</p> <p>(FSAR, Section 9.5.2.2.3)</p> <p>(SNC SEP - VEGP Units 3 & 4 Annex section 5.2)</p>	<ul style="list-style-type: none"> • Wireless Telephone System • Telephone/Page System • Sound-powered phones • Motorola Radios (150/450 MHz) • Local Commercial Telephone System • ENS/HPN • ENN • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The private automatic branch exchange (PABX) system provides communication between the system stations, with capability for transferring calls and providing conference calls. PABX telephones are programmable. Buttons on the phone can be dedicated and color coded to specific telephone numbers.</p> <p>The PABX system also interfaces with the following communication systems:</p> <ul style="list-style-type: none"> • The wireless telephone system, • Redundant connectivity to commercial telephone services to provide communication capability with the load dispatcher to support and coordinate the system, • Access to the telephone page system, and • Direct extensions from the PABX locations exterior to the plant. <p>All Emergency Response phones on the operating desks will be PABX phones. Business phones will be in the conference rooms and in certain locations in the TSC. These are direct commercial telephone lines provided by the local area telephone company.</p> <p>The separate, redundant connections between the PABX and commercial telephone service provides communications between the main control room and the headquarters or other facilities in case of a single fault.</p> <p>Power to the PABX is provided from the non-Class 1E DC and uninterruptible power supply system sized to supply power for 120 minutes after a loss of AC power.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>
<p>Sound-Powered Telephone System</p>	<ul style="list-style-type: none"> • Wireless Telephone System 	<p>Two unitized systems are provided for refueling and for use throughout the plant for startup and maintenance testing. The</p>

Section 1 – Emergency Response Communication Systems (Current Designed Capabilities)		
Communications Systems/Equipment (IDENTIFY AS APPROPRIATE)	Alternate methods (IDENTIFY AS APPROPRIATE)	System/Equipment Description
(FSAR, Section 9.5.2.2.4)	<ul style="list-style-type: none"> • Telephone/Page System • PABX Telephone System • Motorola Radios (150/450 MHz) • Local Commercial Telephone System • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>sound-powered system does not require external power supply for operation. The function of each Sound-Powered Telephone subsystem is to provide an independent, reliable communications system for plant personnel. Operation of each subsystem requires no outside power source for operation, making it a highly dependable system which can be utilized for operators to communicate with the MCR to perform in-plant operations.</p>
<p>Motorola Radios (UHF – Primary and VHF – Backup)</p> <p>(SNC SEP - VEGP Units 3 & 4 Annex section 5.2)</p>	<ul style="list-style-type: none"> • Wireless Telephone System • Telephone/Page System • PABX Telephone System • Sound-powered phones • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The 150/450 MHz radio system consists of several base stations and the associated cabling and antennas that will be strategically located to afford the best possible coverage and accessibility with respect to maintenance, security, and uninterrupted power.</p> <p>Hand held radios form part of the radio system - These are small portable radios capable of one or several channels. They are battery operated and the batteries must be changed regularly to assure proper operation. Some mobile radios will be mounted in vehicles and use a 12V DC power source supplied by the vehicle's battery. These mobile radios are capable of one or several channels and have an external antenna mounted on the vehicle.</p>

Section 1 – Emergency Response Communication Systems (Current Designed Capabilities)		
Communications Systems/Equipment (IDENTIFY AS APPROPRIATE)	Alternate methods (IDENTIFY AS APPROPRIATE)	System/Equipment Description
Local Commercial Telephone System (SNC SEP - VEGP Units 3 & 4 Annex section 5.3)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • ENS/HPN • ENN • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>Commercial telephone lines will be provided by AT&T. Telephone lines will be provided from separate offsite offices so that access onto and off site is available from two separate wire centers. Some commercial telephone lines will not terminate at the PABX but will bypass the switch and ring directly at a telephone set. These numbers will be located in each MCR, TSC, OSC, Security, Safety, and at specific management offices throughout the site.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>
Business LAN (SouthernNet)	<ul style="list-style-type: none"> • Telephone/Page System • PABX Telephone System • Motorola Radios (150/450 MHz) • Local Commercial Telephone System • ENS/HPN • ENN • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>This system supplies networking capabilities to VEGP computers and Power over Ethernet (PoE) capabilities to business Voice Over Internet Protocol (VoIP) phones and Wireless Local Area Network (WLAN) access points.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>

Section 1 – Emergency Response Communication Systems (Current Designed Capabilities)		
Communications Systems/Equipment (IDENTIFY AS APPROPRIATE)	Alternate methods (IDENTIFY AS APPROPRIATE)	System/Equipment Description
Offsite Cellular Service (Not part of Emergency Plan)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • Sound-powered phones • Motorola Radios (150/450 MHz) • Local Commercial Telephone System • ENS/HPN • ENN • Satellite telephones (Not part of Emergency Plan) 	<p>ERO personnel are provided with cellular telephones to be used for ERO notification and call-outs prior to and during emergencies. These phones are not expected to be used in the MCR or Power Block due to possible interference with plant equipment and probable loss of signal to the phone.</p>
Emergency Notification System (ENS) (SNC SEP section E.2.3)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • Local Commercial Telephone System • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>Communications with the NRC will be maintained with the Emergency Notification System (ENS). Notification of NRC headquarters in Rockville, MD and the Region II NRC office in Atlanta, GA (during normal working hours) is accomplished via the ENS. The ENS telephone service is provided by the Federal Telecommunications System (FTS) 2001 Network. Dedicated telephone equipment will be located in each Control Room, the TSC and the EOF.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>

Section 1 – Emergency Response Communication Systems (Current Designed Capabilities)		
Communications Systems/Equipment (IDENTIFY AS APPROPRIATE)	Alternate methods (IDENTIFY AS APPROPRIATE)	System/Equipment Description
NRC Health Physics Network (HPN) (SNC SEP section E.2.3)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • Local Commercial Telephone System • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The HPN is a portion of the FTS and will be located in the TSC in addition to the existing EOF location. This telephone network is used to exchange radiological and dose assessment information between NRC facilities and VEGP. Data can be transmitted to the NRC verbally using one of the alternate methods identified.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>
Emergency Response Data System (ERDS) (SNC SEP section E.2.3)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • Local Commercial Telephone System • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The Emergency Response Data System (ERDS) will consist of two fully redundant Virtual Private Networks (VPNs) (Unit 3 and 4). This system will retrieve information from the Enterprise Data Server (EDS) and provide selected plant data to the NRCs Operations Center in Rockville, Maryland for evaluating plant conditions.</p> <p>Data can be manually acquired and transmitted to the NRC verbally using one of the alternate methods identified.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>

Section 1 – Emergency Response Communication Systems (Current Designed Capabilities)		
Communications Systems/Equipment (IDENTIFY AS APPROPRIATE)	Alternate methods (IDENTIFY AS APPROPRIATE)	System/Equipment Description
Emergency Recall System (ERO Notification System)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • Local Commercial Telephone System • ENS/HPN • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The Emergency Recall System is a commercially provided system consisting of a computer controlled automatic dialing system. The Emergency Recall System's facilities are located greater than 25 miles from the plant site and provide geographically diverse call center locations and back-up capability.</p> <p>Once activated, the system initiates notification to ERO personnel via voice, text messaging, and email to all devices registered for the individual ERO member (e.g., phone, pager, smart phone, etc.). This method will reach ERO members outside the 25-mile zone as well as a portion of the ERO with notification coverage (device dependent) near the fringes of the 25-mile zone. Additional ERO members will be notified as communications infrastructure is returned to service through the affected area.</p>
Emergency Notification Network (ENN) (SNC SEP section E.2.2 and VEGP Units 3 & 4 Annex section 5.3)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • Local Commercial Telephone System • ENS/HPN • Satellite or Cellular telephones (Not part of Emergency Plan) 	<p>The ENN is a multiparty dedicated telephone system from VEGP to state, county, and Savannah River Site (SRS) authorities. Operation will be accomplished by dialing a two-digit calling code to call all stations or individual stations. Each telephone will have a speaker and telephone handset at each location. The ENN is used for initial notification, changes in classification level and updates on status. The ENN will also be used by SRS to notify states and counties of an SRS emergency.</p> <p>Further details are not yet available as the system is still under buildout due to construction completion activities on each unit.</p>

Section 1 – Emergency Response Communication Systems (Current Designed Capabilities)		
Communications Systems/Equipment (IDENTIFY AS APPROPRIATE)	Alternate methods (IDENTIFY AS APPROPRIATE)	System/Equipment Description
Handheld Satellite Telephones (Not part of Emergency Plan)	<ul style="list-style-type: none"> • Wireless Telephone System • PABX Telephone System • Local Commercial Telephone System • ENS/HPN • ENN • Cellular telephones (Not part of Emergency Plan) 	Handheld satellite phones will be procured. Location specific data is not available until the completion of plant construction activities.
RAPIDCASE (Not part of Emergency Plan)	<ul style="list-style-type: none"> • Handheld satellite phone (Not part of Emergency Plan) 	A rapidly deployable case that will be procured capable of providing a battery-powered satellite telephone system supplying multiple phones to the TSC and MCR of each unit.
RAPIDCOM (Not part of Emergency Plan)	<ul style="list-style-type: none"> • Handheld satellite phone (Not part of Emergency Plan) 	<p>A rapidly deployable, self-contained, and generator-powered satellite communications uplink station and UHF/VHF capability will be procured. This unit will be stored in a protected and survivable area.</p> <p>Once deployed, the RAPIDCOM will support multiple telephone lines to the TSC and MCR of each unit. It will also supply several UHF/VHF radio stations in the TSC and each MCR to allow radio communications directly between each facility.</p>

Section 2 – Equipment Locations (Current Configuration)

System/Equipment	Primary System Component Location(s)	Equipment protected from the below hazards			Comments
		Protected from Seismic as defined in this document	Protected from Flooding as defined in this document	Protected from Wind as defined in this document	
Wireless Telephone System (aka ASCOM)	Room B-119 of Bldg. 305, and in Room 40316 of each unit	No	Yes	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit. Run time on the UPS supporting the controllers in high availability mode is 2 hours.
Telephone/Page System (aka Plant Public Address System (PA))	Room B-103 of Bldg. 305, and Room 40317 and 20513 of each unit.	No	Yes	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit. Run time on the UPS supporting the controllers in high availability mode is 2 hours.
Private Automatic Branch Exchange (PABX) Telephone System	Room B-103 of Bldg. 305, and Room 40317 of the Annex Building of Unit 3.	No	Yes	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit. Run time on the UPS supporting the controllers in high availability mode is 2 hours.

Section 2 – Equipment Locations (Current Configuration)					
System/Equipment	Primary System Component Location(s)	Equipment protected from the below hazards			Comments
		Protected from Seismic as defined in this document	Protected from Flooding as defined in this document	Protected from Wind as defined in this document	
Sound-Powered Telephone System	Power blocks of each unit	Yes	Yes	Yes	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit.
Motorola Radios (UHF – Primary and VHF – Backup)	Rooms 20513 and 40317 of each unit	No*	Yes*	No*	* Handheld radios in line-of sight/talk-around mode are reasonably protected from seismic, wind, and flooding events depending on usage location at the start of the event.
Local Commercial Telephone System	147B Fiber Hut	No	No	No	Commercial system not available per assessment assumptions.
Business LAN (SouthernNet)	Distributed throughout facility	No	Yes	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit.
SouthernLinc (Not part of Emergency Plan)	Plant Wilson Linc site	No	No	No	Commercial system not available per assessment assumptions.

Section 2 – Equipment Locations (Current Configuration)					
System/Equipment	Primary System Component Location(s)	Equipment protected from the below hazards			Comments
		Protected from Seismic as defined in this document	Protected from Flooding as defined in this document	Protected from Wind as defined in this document	
Offsite Cellular Service (Not part of Emergency Plan)	Offsite, varies based on carrier	No	No	No	Commercial system not available per assessment assumptions.
Emergency Notification System (ENS)	Rooms 40136 and 40137 of each unit.	No	No	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit.
NRC Health Physics Network (HPN)	Rooms 40136 and 40137 of each unit.	No	No	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit.
Emergency Response Data System (ERDS)	Rooms 40136 and 40137 of each unit.	No	Yes	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit.
Emergency Recall System (ERO Notification System)	Vendor maintains facilities >25 miles from VEGP and facilities are assumed to be unaffected by the LSEE.	Yes	Yes	Yes	VEGP may access this service by means of a satellite phone, however, devices assigned to receive notification may be located within 25 miles of VEGP.

Section 2 – Equipment Locations (Current Configuration)					
System/Equipment	Primary System Component Location(s)	Equipment protected from the below hazards			Comments
		Protected from Seismic as defined in this document	Protected from Flooding as defined in this document	Protected from Wind as defined in this document	
Emergency Notification Network (ENN)	EP Tower	No	Yes	No	This system has yet to be fully deployed as the system is still under buildout due to construction completion activities on each unit.
Handheld Satellite Telephones (Not part of Emergency Plan)	MCR and TSC	Yes - when deployed as planned.	Yes - when deployed as planned.	Yes - when deployed as planned.	Devices will be stored in a location, and maintained in a manner, that maximizes survivability following a LSEE. In particular, the location selected will provide reasonable protection from seismic, wind, and flooding events.
RAPIDCASE (Not part of Emergency Plan)	TBD	Yes - when deployed as planned.	Yes - when deployed as planned.	Yes - when deployed as planned.	Devices will be stored in a location, and maintained in a manner, that maximizes survivability following a LSEE. In particular, the location selected will provide reasonable protection from seismic, wind, and flooding events.

Section 2 – Equipment Locations (Current Configuration)					
System/Equipment	Primary System Component Location(s)	Equipment protected from the below hazards			Comments
		Protected from Seismic as defined in this document	Protected from Flooding as defined in this document	Protected from Wind as defined in this document	
RAPIDCOM (Not part of Emergency Plan)	TBD	Yes - when deployed as planned.	Yes - when deployed as planned.	Yes - when deployed as planned.	Devices will be stored in a location, and maintained in a manner, that maximizes survivability following a LSEE. In particular, the location selected will provide reasonable protection from seismic, wind, and flooding events.

Section 3 – Equipment Power Source(s)				
System/Equipment	Primary Power Supply (List the power source)	Alternate Power Supply (List the power source)	Backup power availability (e.g., batteries, portable generators, etc.) Yes/No	Comments Will interim actions be taken to enhance the power supplies?
Wireless Telephone System (aka ASCOM)	Non-Class 1E 120 VAC	N/A	Yes	No
Telephone/Page System (aka Plant Public Address System (PA))	Non-Class 1E DC	2 Hour uninterruptible power supply (UPS)	Yes	No
Private Automatic Branch Exchange (PABX) Telephone System	Non-Class 1E DC	2 Hour uninterruptible power supply (UPS)	Yes	No
Sound-Powered Telephone System	No power supply required	N/A	No	No
Motorola Radios (UHF – Primary and VHF – Backup)	Security power supply system	2 Hour uninterruptible power supply (UPS)	Yes	No
Local Commercial Telephone System	Non-Class 1E DC	2 Hour uninterruptible power supply (UPS)	No	No
Business LAN (SouthernNet)	Non-Class 1E 120 VAC	None	No	No

Section 3 – Equipment Power Source(s)				
System/Equipment	Primary Power Supply (List the power source)	Alternate Power Supply (List the power source)	Backup power availability (e.g., batteries, portable generators, etc.) Yes/No	Comments Will interim actions be taken to enhance the power supplies?
SouthernLinc	Off-site power to Plant Wilson SouthernLinc site.	The Plant Wilson site has a UPS with an expected 8-hour runtime following a loss of power.	Yes	No
Offsite Cellular Service	Not applicable, offsite system provided by cellular service.	Not applicable, offsite system provided by cellular service.	Not applicable, offsite system provided by cellular service.	No
Emergency Notification System (ENS)	Not applicable, local telephone provider	Not applicable, local telephone provider	Not applicable, local telephone provider	No
NRC Health Physics Network (HPN)	Not applicable, local telephone provider	Not applicable, local telephone provider	Not applicable, local telephone provider	No
Emergency Response Data System (ERDS)	Non-Class 1E DC	2 Hour uninterruptible power supply (UPS)	No	No
Emergency Recall System (ERO Notification System)	Not applicable, service provided by offsite supplier.	N/A	N/A	No
Emergency Notification Network (ENN)	Non-Class 1E 120 VAC	Non-Class 1E DC and uninterruptible power supply system (2-hour UPS)	Yes	No
Handheld Satellite Telephones	Built-in battery	Spare battery or 12 VDC adapter	Yes	No

Section 3 – Equipment Power Source(s)				
System/Equipment	Primary Power Supply (List the power source)	Alternate Power Supply (List the power source)	Backup power availability (e.g., batteries, portable generators, etc.) Yes/No	Comments Will interim actions be taken to enhance the power supplies?
RAPIDCASE	Built-in battery	No	No	Yes Each RAPIDCASE will be outfitted with a larger battery to allow standalone power from its initial setup. Before this power supply is depleted, a small propane-powered generator will be connected to the system by on-shift personnel to extend the power supply. This generator will be small enough to be carried from its reasonably protected onsite storage location to the RAPIDCASE by on-shift personnel.
RAPIDCOM	Onboard generator with 72-hour fuel supply	None	No	No

4.0 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER

4.1 REQUIRED EMERGENCY COMMUNICATIONS CAPABILITIES

4.1.1 Notifications to, and communications with, Offsite Response Organizations (OROs) *[per 10 CFR 50 Appendix E.IV.D and E.9.a]*

Emergency Response Facility	Minimum Communications Links	Primary Method Described in E-Plan	Primary Method Available following Large Scale External Event (LSEE)?	Backup Method(s) Described in E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Main Control Room (MCR)	1 per Control Room for Shift ENN Communicator	Emergency Notification Network (ENN)	No	PABX or commercial telephone lines	Limited	Yes	See Note 1 for additional information
Technical Support Center (TSC)	Under the SNC Standard Emergency Plan, notifications to and communications with OROs passes from the MCR directly to the EOF. Therefore, this capability is not applicable to the TSC for SNC plants.						
Emergency Operations Facility (EOF)	1 for Key EOF Communicator	Emergency Notification Network (ENN)	Yes	PABX or commercial telephone lines	Yes	No	See Note 2 for additional information

4.1.2 Notifications to, and communications with, the NRC Headquarters Incident Response Center and the appropriate NRC Regional Office Operations Center [per 10 CFR 50 Appendix E.IV.D and E.9.d]

Emergency Response Facility	Minimum Communications Links	Primary Method Described in E-Plan	Primary Method Available following LSEE?	Backup Method(s) Described in E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Main Control Room (MCR)	1 per Control Room for ENS Communicator	FTS ENS line	No	PABX or commercial telephone lines	No	Yes	See Note 3 for additional information
Technical Support Center (TSC)	1 for ENS Communicator	FTS ENS line	No	PABX or commercial telephone lines	No	Yes	See Note 3 for additional information
Emergency Operations Facility (EOF)	1 for ENS Communicator	FTS ENS line	Yes	PABX or commercial telephone lines	Yes	No	See Note 2 for additional information
Technical Support Center (TSC)	1 for HPN Communicator	FTS HPN line	No	PABX or commercial telephone lines	No	Yes	See Note 3 for additional information
Emergency Operations Facility (EOF)	1 for HPN Communicator	FTS HPN line	Yes	PABX or commercial telephone lines	Yes	No	See Note 2 for additional information

4.1.3 Communications between licensee emergency response facilities *[per 10 CFR 50 Appendix E.9.c. Additional links that support performance of critical response functions are also specified.]* The minimum communications links to support this function are listed below by facility. For example, if the normally used telephone system cannot be restored to service, these links could rely upon some combination of radio, sound-powered and satellite-based communications systems.

Emergency Response Facility	Minimum Communications Links	Primary Method Described in E-Plan	Primary Method Available following LSEE?	Backup Method(s) Described in E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Control Room	1 per unit	Dedicated PABX telephone lines	No	Two-way radio	No (line-of sight/talk-around mode will not be available to users inside the power block)	Yes	See Notes 4 and 5 for additional information
Technical Support Center (TSC)	1 each for: <ul style="list-style-type: none"> Senior/Lead TSC Manager Operations Coordination Maintenance Coordination Engineering Coordination Radiological Support Additional response coordination links for multi-unit sites: <ul style="list-style-type: none"> 1 for each position providing Unit Response Coordination. 	Dedicated PABX telephone lines	No	Two-way radio	Yes (line-of sight/talk-around mode vs. repeater)	Yes	See Notes 4 and 5 for additional information

Emergency Response Facility	Minimum Communications Links	Primary Method Described in E-Plan	Primary Method Available following LSEE?	Backup Method(s) Described in E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Operational Support Center (OSC)	1 each for: <ul style="list-style-type: none"> • Senior/Lead OSC Manager • Radiological Support Additional response coordination links for multi-unit sites: <ul style="list-style-type: none"> • 1 for each position providing Unit In-Plant Team Coordination. 	Dedicated PABX telephone lines	No	Two-way radio	Yes (line-of sight/talk-around mode vs. repeater)	Yes	See Notes 4 and 5 for additional information
Emergency Operations Facility (EOF)	1 each for: <ul style="list-style-type: none"> • Senior/Lead Manager • Key Protective Measures • Operations or Technical Support (as needed to support performance of dose projections, formulation of PARs and plant status updates to ORO authorities). 	Dedicated EOF PBX telephone lines	No (site dedicated lines unavailable)	Two-way radio	No (site transmitter unavailable)	Yes	See Notes 2 and 6 for additional information
Joint Information Center (JIC)	1 for Senior Manager	Local commercial telephone line	No	Cellular telephone	No	Yes	See Note 7 for additional information

4.1.4 Communications with field/offsite monitoring teams [per 10 CFR 50 Appendix E.9.c]

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Primary location where field/offsite monitoring team coordination is performed (EOF)	Field/offsite monitoring team coordination	Field team radios	No – (transmitter unavailable and limited range for line-of sight/talk-around mode)	Alternate radio channels	No	Yes	See Note 8 for additional information
Primary location from which field/offsite monitoring teams are deployed (OSC)	1 for each field/offsite monitoring team	Field team radios	No – (transmitter unavailable and limited range for line-of sight/talk-around mode)	Alternate radio channels	No	Yes	See Note 8 for additional information

4.1.5 Communications with other Federal agencies as described in the site emergency plan (e.g., the US Coast Guard) [per 10 CFR 50 Appendix E.9.b]

Emergency Response Facility	Minimum Communications Links	Primary Method Described in E-Plan	Primary Method Available following LSEE?	Backup Method(s) Described in E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Primary location where communication with Federal agencies is performed (TSC)	Coordination with Federal agencies	Dedicated PABX telephone lines	No	Dedicated EOF PBX telephone lines	Yes (EOF)	Yes	See Notes 1, 2, 5, and 9 for additional information

4.1.6 Coordination and direction of on-site and in-plant response teams. This includes teams necessary to affect emergency repairs, firefighting, search and rescue, radiological monitoring, and implementation of Transition Phase coping and severe accident management strategies.

Emergency Response Facility	Minimum Communications Links	Primary Method Described in E-Plan	Primary Method Available following LSEE?	Backup Method(s) Described in E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
On-shift staff	Number necessary for the on-shift staff to perform Initial Phase coping actions (reflecting current staff & strategies)	Wireless Telephone System	Yes, limited by 2-hour UPS	Telephone/Page System PABX Telephone System Motorola Radios (150/450 MHz) Sound-powered phones	Yes, limited by 2-hour UPS Yes, limited by 2-hour UPS Yes, line-of sight / talk-around mode Yes	Yes	See Note 10 for additional information

Operational Support Center (OSC) and other site-specific locations as necessary	1 each for:	Wireless Telephone System	Yes, limited by 2-hour UPS	Telephone/Page System	Yes, limited by 2-hour UPS	Yes	See Notes 11 and 12 for additional information;
	• On-site radiological monitoring			PABX Telephone System	Yes, limited by 2-hour UPS		
	2 each for:			Motorola Radios (150/450 MHz)	Yes, line-of sight / talk-around mode		
	• Firefighting (1 for brigade leader and 1 for the brigade)			Sound-powered phones	Yes		
	2 each per unit for:						
	• In-plant radiological monitoring						
	• Search and Rescue						
	• Emergency repairs						
	• Site-specific number needed to implement any 2 severe accident mitigation strategies						

4.2 Plant Paging (Announcement) System

Emergency Response Facility	Minimum Communications Links	Is this system available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Site-wide	See assumptions and discussion in NEI 12-01.	No	No	See Notes 12 and 13 for additional information

4.3 Communications at ORO Facilities

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following LSEE?	Planned or Potential Improvement Identified?	Refer to Following Section for Additional Information
Location where OROs receive notifications of an emergency declaration or a Protective Action Recommendation (as described in the Emergency Plan)	At least one. See assumptions and discussion in NEI 12-01.	Emergency Notification Network (ENN) telephones	Only available to GA (Atlanta) and SC (Columbia) state EOCs located outside 25 miles. All county EOC's (Allandale, Aiken, Barnwell, Burke), the GA Forward EOC (Waynesboro) and Savannah River Site are within 25 miles.	Commercial telephone lines and South Carolina Emergency Management Division Radio	Only available to GA (Atlanta) and SC (Columbia) state EOCs located outside 25 miles. All county EOC's (Allandale, Aiken, Barnwell, Burke), the GA Forward EOC (Waynesboro) and Savannah River Site are within 25 miles.	No	See Note 14 for additional information

Notes for Section 4 Assessment of Required Emergency Communications Capabilities

Note 1: Satellite telephones (handheld and RAPIDCOM/RAPIDCASE) will be procured and deployed to provide a means of off-site communications with OROs during a LSEE.

Note 2: Normal and backup communication systems will be available at the EOF, since it is located outside the 25-mile affected zone near Birmingham, AL.

Note 3: Reasonable protection is not assured due to location of key phone network components. Satellite telephones (handheld and RAPIDCOM/RAPIDCASE) will be procured and deployed to provide a means of off-site communications with NRC during a LSEE.

Note 4: Line-of sight / talk-around mode radio use is limited to users outside the reinforced concrete power block structures of each unit.

Note 5: A rapidly deployable communications kit, RAPIDCASE, and a mobile communication system, RAPIDCOM, will be procured and deployed which each have the capability to supply multiple satellite phone lines within the TSC and the MCR. The RAPIDCOM system will also supply a UHF/VHF capability supporting multiple radio stations in the TSC and in each MCR.

Note 6: Due to potential damage onsite at VEGP, the EOF's capability to communicate with site ERO personnel would be limited to those site responders equipped with satellite telephones.

Note 7: The VEGP JIC is located in Waynesboro, Georgia adjacent to the Georgia Power Company operating headquarters. This location is within the assumed 25-mile effected zone (approximately 14 miles from VEGP) and is assumed to not have normal or backup power available for this scenario.

Note 8: The power source to the primary method, field team radio transmitter won't be available during a LSEE after depletion of the UPS with limited (2-hour) run time. Once deployed, the RAPIDCOM system will supply a UHF/VHF capability supporting multiple radio stations, including the radios used by the field monitoring teams. Normal communications will be available at the EOF since it is located outside the 25-mile effected zone.

Note 9: The backup method is for responders in the EOF to assume this responsibility.

Note 10: In plant communications will be available for a limited period of time (2 hours) following an LSEE. The telephone/page, PABX telephone, and sound-powered communication systems serve as a backup to the wireless system, but telephone/page and

Notes for Section 4 Assessment of Required Emergency Communications Capabilities

PABX telephones may not be available since reasonable protection is not assured in some scenarios due to location of key network components. Satellite telephones (handheld and RAPIDCOM/RAPIDCASE) will be procured and deployed to provide an alternate means of on-site communications during LSEE. The RAPIDCOM system is also capable of supplying a UHF/VHF radio capability supporting multiple stations in the TSC and in each MCR.

Note 11: In plant communications will be available for a limited period of time (2 hours) following an LSEE. The telephone/page, PABX telephone, and sound-powered communication systems serve as a backup to the wireless system, but telephone/page and PABX telephones may not be available since reasonable protection is not assured in some scenarios due to location of key phone network components. Battery-powered handheld radios will be available for use by onsite personnel in the line-of sight/talk-around mode only.

Note 12: Evaluation using both deterministic and PRA criteria has determined that there are no critical human actions necessary for post-accident mitigation due to the predominant use of passive safety features in the AP1000 design. Therefore, there is a significantly reduced dependence on human actions following an event at VEGP Units 3 and 4, and the necessity for onsite communications between plant staff during a prolonged SBO, prior to the availability of off-site resources, is minimized.

Note 13: The telephone/page system primary system components are located in Room B-103 of Bldg. 305 and Room 40317 of each unit. This area does not supply "reasonable protection" to ensure system availability in some scenarios. The battery backup capability has a limited 2-hour run time, but this will provide ample time for the initial emergency declaration and direction announcements to the plant staff. A supplemental method to the telephone/page system capability for emergency notification to the plant staff will be developed to support emergency notification to essentially 100% of plant staff within 30 minutes.

Note 14: Offsite notifications are normally received by state and county designated offsite agencies from the MCR and EOF using the ENN. The only ORO locations where either of these methods would be available is the state EOC's in GA (Atlanta) and SC (Columbia). All other ORO locations described in the Emergency Plan are within 25 miles, where power and communications systems are assumed to be unavailable.

GENERIC TECHNICAL ISSUES

On January 23, 2013, the NRC Staff issued a letter to all power reactor licensees and holders of construction permits in active or deferred status. The enclosure to that letter identified eight generic technical issues needing resolution to determine a licensee's communications capability regarding a SBO event. The following section specifically addresses each of these eight generic technical issues.

Generic Technical Issue 1

The staff identified that licensees need to discuss how the power for the equipment analyzed is expected to be available, and how the planned communications enhancements are expected to be maintained. The following areas were identified:

- A. A detailed description of how power will be maintained for (1) planned or potential enhancements to the communication links and (2) existing equipment analyzed to be available.
 1. The number of replacement batteries expected to be needed for a 24-hour duration, per the Nuclear Energy Institute (NEI) 12-01 "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities".
 2. Generator availability to charge batteries without offsite equipment for a duration of 24 hours.
 3. A description of how ancillary equipment supports operations for a 24-hour duration (e.g., adequacy of fuel supplies for the generators; and the minimum number of battery chargers expected to be necessary).

VEGP Units 3 and 4 Response:

- Handheld Satellite Telephones
 - Four batteries for each hand-held satellite phone will be maintained in a charged state. Each battery has an 8-hour capacity for a total battery capacity of 32 hours for each phone.
 - Satellite telephones can also be powered from 12-volt DC car adapters, if needed.
 - In addition, small man-portable propane generators will be procured and deployed as necessary to recharge batteries during a LSEE.
- RAPIDCASE
 - The RAPIDCASE system contains a battery capable of providing an initial 6 hours of power.
 - Before this power supply is depleted, a small propane-powered generator will be connected to the system by on-shift personnel to extend the power supply. This generator will be small enough to be carried from its designated storage location to the RAPIDCASE by on-shift personnel.
 - Beyond the initial fuel load for these generators, VEGP Units 3 and 4 will either transfer communications capability to the RAPIDCOM trailer or refuel the portable generator indefinitely per a validated refueling plan.
- RAPIDCOM
 - The RAPIDCOM system is equipped with an onboard 20-minute battery power supply to support initial startup.

- Once deployed, the RAPIDCOM is self-powered by one of two 100% capacity generators located on board the mobile unit. The generators are powered by propane with sufficient fuel on board to last greater than 72 hours.

Inventory checks of all FLEX communications equipment, including spare batteries, is performed on a 6-month frequency. The following PMs will be revised as necessary to include the beyond-design-basis (BDB) communications equipment credited at VEGP Units 3 and 4 during a LSEE.

- PM A2800R5079, Perform FLEX Inventory (FSB)
- PM A2800R5080, Perform FLEX Inventory (Protected Area)

Generic Technical Issue 2

The use and function of the planned enhancements for the improvement of communications.

A. A description of the use of the planned enhancements.

1. A discussion of whether each planned enhancement identified is only to be used for maintaining the communication link identified, or if it is expected to be shared among other communication links.
2. A general description of the planned enhancement and how the equipment will be integrated.
3. The title and general description of the procedure that will be developed and used by plant personnel to describe protocols for shared usage of communication capabilities.

VEGP Units 3 and 4 Response:

Section 4.0 of this Communications Assessment assesses the required emergency communications capabilities during a LSEE and provides a general description of the planned enhancements for the improvement of communications at VEGP Units 3 and 4. A summary of these planned enhancements is provided below:

- Satellite Telephones
 - Sufficient satellite telephones will be procured and deployed enabling use by either unit's MCR or the TSC until either the RAPIDCASE or RAPIDCOM systems are deployed. Two of the handheld satellite phones will be located in each MCR, and one will be maintained in the TSC. Internal batteries and external AC/DC sources can be used to power these hand-held portable devices. However, operation of satellite phones physically within the MCR and TSC will not be available using the hand-held devices.
 - A rapidly deployable communications kit, RAPIDCASE, and a mobile communication system, RAPIDCOM, will be procured and deployed which each have the capability to supply multiple satellite phone lines within the TSC and the MCR. The RAPIDCOM system will also supply a UHF/VHF capability supporting multiple radio stations in the TSC and in each MCR.
 - The RAPIDCASE will be expected to be deployed within six hours from the start of the extended loss of all AC power. These units will be stored in reasonably protected locations in both Units 3 and 4 which are expected to survive the initial LSEE. Specific locations are to be determined when allowed by the completion of construction activities.

- The RAPIDCOM can be deployed within six hours after a debris path has been cleared.
- Radios
 - Following a LSEE, the primary method for communicating by means of the site radio system will be in line-of-sight/talk-around mode. This mode would be available to communicate primarily outdoors by plant staff and operators; and to a limited degree, inside plant buildings.
 - A mobile communication system, RAPIDCOM, will be procured and deployed which will supply a UHF/VHF capability supporting multiple radio stations in the TSC and in each MCR. The RAPIDCOM can be deployed within six hours after a debris path has been cleared.
- Telephone/Page System
 - The telephone/page system is supplied with a two-hour Uninterruptible Power Supply (UPS) and will provide for initial notifications and directions to on-site personnel, the on-shift ERO personnel, and in-plant response teams for the initial period after the LSEE occurrence until AC power is restored, or alternative communications are available.
 - In the event the telephone/page system is unavailable due to the event, a multi-faceted approach will be utilized to ensure onsite communications are maintained:
 - If site-wide announcements are unable to be made following a LSEE, personnel onsite will be trained to rally at a pre-determined position. Runners will then be sent to these locations to provide further direction to all staff.
 - On-shift Nuclear Security Officers will make rounds throughout the Owner Controlled Area while making announcements via loudspeakers to communicate direction to individuals on the site.
 - The combination of these means will be capable of notifying essentially 100% of the plant staff within approximately 30 minutes of the LSEE.

VEGP Units 3 and 4 will revise the existing SNC procedure NMP-OS-019-369, Vogtle Unit C SIG-9, "Communications," describing the storage and use of site communications equipment available during the response to a LSEE. This procedure will describe the storage locations, storage requirements, and deployment steps necessary for equipment needed to support emergency communications at VEGP Units 3 and 4 following an event resulting in an extended loss of AC power and loss of normal on-site and off-site communications capabilities.

After the FLEX strategies have been developed, VEGP will review the strategies to ensure sufficient communications equipment is available and integrated to implement the strategies. If necessary, integration of the planned enhancements will occur through the implementation of a formal change management process incorporating procedure development, training, equipment testing, implementation, and demonstration.

Generic Technical Issue 3

The protection of the new equipment purchased as a planned enhancement as well as the protection of existing communications equipment analyzed as being available.

- A. A discussion of how the existing equipment analyzed to be available and enhancements to these communication links as well as associated ancillary equipment will be stored in a manner that is protective from a large scale natural event.
1. A description of pre-identified areas that are considered protective for existing equipment and whether new equipment will be stored in a similar location. The title and brief description of a procedure for new communications equipment storage is acceptable if this procedure is planned to be developed in the future; or a statement that this will be completed in alignment with NRC order EA-12-049.
 2. Equipment stored offsite, should have an analysis of duration to set-up this equipment for use.
 3. The analysis demonstrates that the existing equipment that is expected to be available will be functional.

VEGP Units 3 and 4 Response:

VEGP Units 3 and 4 will revise existing procedure 91204-C, "Emergency Response Communications," which provides for periodic communications equipment inventory and operational checks for that equipment identified in the SNC SEP - VEGP Units 3 and 4 Annex.

VEGP will store portable communications equipment (e.g., handheld radios, satellite phones, RAPIDCASE/RAPIDCOM, and portable propane generators to recharge batteries) either in the MCRs, TSC, or other onsite locations that meets the requirements of NRC Order 12-049.

SNC has no plans to store any emergency communications equipment offsite.

Generic Technical Issue 4

The programmatic controls for the use of the new equipment purchased as a planned enhancement.

- A. A description of planned proceduralization and training for the use of these planned enhancements. It is acceptable to provide the title and description of a new procedure for new communications equipment.
1. A description of any credited manual actions and their procedures.
 2. A description of any maintenance for this equipment, including operability testing,
 3. A description of any periodic inventory checks.
 4. A description of planned staff training.

VEGP Units 3 and 4 Response:

VEGP Units 3 and 4 will revise the existing SNC procedure NMP-OS-019-369, Vogtle Unit C SIG-9, "Communications," describing the storage and use of site communications equipment available during the response to a LSEE. This procedure will describe the storage locations, storage requirements, and deployment steps necessary for equipment needed to support emergency communications at VEGP Units 3 and 4 following an event resulting in an extended loss of AC power and loss of normal on-site and off-site communications capabilities.

Inventory checks of all FLEX equipment, including the communications equipment is performed on a 6-month frequency. The following PMs will be revised as necessary to include the BDB communications equipment credited at VEGP Units 3 and 4 during a LSEE.

- PM A2800R5079, Perform FLEX Inventory (FSB)
- PM A2800R5080, Perform FLEX Inventory (Protected Area)

Current Lesson Plan V-IC-PP-07010, I&C FLEX Equipment Set-up will be revised as necessary to include VEGP Unit 3 and 4 BDB communications equipment. Training will be updated and presented for I&C technicians once the VEGP Unit 3 and 4 equipment is procured and deployed on the site.

Generic Technical Issue 5

A discussion on what assumptions are used as part of the Communications Assessment.

A description of the assumptions used for the submitted Communications Assessment Summary, and technical justification for any differences from the assumptions within NEI 12-01, Sections 2.2 "Assumptions Common to Both Assessments" and 2.4 "Assumptions for Communications Assessment".

VEGP Units 3 and 4 Response:

The assessment did not deviate from the assumptions within NEI 12-01.

Generic Technical Issue 6

How plant personnel will be notified in the event of a large scale natural event that causes a loss of all AC power.

- A. A description and title of the procedure for emergency notification of essentially all plant staff within 30 minutes [If applicable to the licensee Emergency Plan].
- B. A description and title of the procedure for notification of emergency response organization staff (i.e., self-activation) [If applicable].

VEGP Units 3 and 4 Response:

SNC common procedure NMP-EP-142, "Emergency Notification," currently provides fleet-wide guidance on the performance of emergency notifications to on-shift personnel, the ERO, offsite authorities (State, local, Federal) and the public for declared emergencies. This procedure will be revised to include applicability to and specific guidance as needed for VEGP Units 3 and 4.

Generic Technical Issue 7

How communications will be maintained during the period of final implementation of the communication enhancements.

- A. Identification and description of the interim actions that will be in place to bridge the gap until all final mitigation strategies being proceduralized are implemented. This also includes equipment protection.

VEGP Units 3 and 4 Response:

No interim actions are needed since VEGP Units 3 and 4 are still completing construction. Until the units are fully constructed and all ITAAC have been completed, there is no requirement for functional communications systems and equipment for use during an emergency event.

Generic Technical Issue 8

Descriptions are needed regarding how communications will be maintained with the on-site and in-plant response teams and offsite response organizations if their communication links are not expected to be available.

- A. A timeline for when the evaluation for site specific improvements for on-site and in-plant response teams will be completed.
- B. A discussion of the enhancements that are planned for the offsite response organization communication links.

VEGP Units 3 and 4 Response:

An evaluation using both deterministic and PRA criteria has determined that there are no critical human actions necessary for post-accident mitigation due to the predominant use of passive safety features in the AP1000 design. Therefore, there is a significantly reduced dependence on human actions following an event at VEGP Units 3 and 4, and the necessity for onsite communications between plant staff during a prolonged SBO, prior to the availability of off-site resources, is minimized.

Onsite communications using the communication system (EFS) will be available for a limited period of time (2 hours) following most scenarios of a LSEE. In the event that the EFS may not be available since reasonable protection is not assured in some scenarios due to location of key network components, satellite telephones (handheld, RAPIDCOM, and RAPIDCASE) will be procured and deployed to provide an alternate means of onsite communications. The RAPIDCOM system is also capable of supplying a UHF/VHF radio capability supporting multiple stations in the TSC and in each MCR. VEGP will primarily use the handheld radios and satellite phones, as well as the RAPIDCASE and RAPIDCOM systems to perform critical communications during and following an event that results in an extended loss of AC power.

VEGP will also use the Sound-Powered Telephone System for specific uses inside the power block of each unit if necessary. These phones do not rely on an electrical power supply and will be available for the entire period of post event activities.

The plant telephone/page system is equipped with battery backup and in most scenarios would remain available to provide the initial emergency declaration and direction announcement to the plant staff. In the unlikely event the telephone/page system is not available, a supplemental method for providing emergency notification to the plant staff will be developed to support emergency notification of essentially 100% of onsite plant staff within 30 minutes.

Several ITAAC specifically related to emergency communications capabilities and demonstration of their use exist which must be completed to support the Commission finding that all acceptance criteria are met prior to plant operation. Completion criteria for these ITAAC will ensure that installation and testing of the necessary communications capabilities as described in the facility design basis are completed prior to initial fuel load on each unit.