

## **Emergency Preparedness Impact Evaluation New Units at Harris Nuclear Plant**

### **I. Purpose**

The purpose of this evaluation is to ensure that construction and operation of two (2) new units at the Harris Nuclear Plant (HNP) site does not adversely affect the current Emergency Preparedness (EP) program for HNP Unit 1.

This evaluation addresses items listed in Regulatory Guide 1.206, Chapter C.III.1, Section C.I.13.3.2, Emergency Plan Considerations for Multiunit Sites.

### **II. Statement of Intent**

Progress Energy Carolinas, owner and operator of one (1) unit at the current Harris site, proposes to construct two (2) new AP1000 passive design units at the site which will be designated as Units 2 and 3. All units are Westinghouse designed pressurized water reactors. An emergency plan has been developed for the Combined License Application (COLA) and integrates the current emergency preparedness processes described in the existing Unit 1 emergency plan (i.e., PLP-201) into a combined plan which addresses emergency preparedness for a 3-unit site. The Units 1, 2, and 3 Harris Nuclear Plant Emergency Plan will be implemented in accordance with an implementation plan and milestone schedule described in the EP portion of the COLA submittal.

### **III. Multi-Unit Site Considerations**

**Note: Progress Energy's responses to the items cited in the Regulatory Guide are provided below each item.**

Regulatory Guide 1.206, Chapter C.III.1, Section C.I.13.3.2 states:

If the new reactor is located on, or near, an operating reactor site with an existing emergency plan (i.e., multiunit site), and the emergency plan for the new reactor includes various elements of the existing plan, the application should do the following:

(1) Address the extent to which the existing site's emergency plan is credited for the new unit(s), including how the existing plan would be able to adequately accommodate an expansion to include one or more additional reactors and include any required modification of the existing emergency plan for staffing, training, Emergency Action Levels (EAL), and the like.

*Response:*

*A combined Emergency Plan, i.e., the Units 1, 2, and 3 Emergency Plan has been developed which integrates emergency preparedness processes currently in place for the Unit 1 emergency plan (i.e., PLP-201) into a combined Plan incorporating two (2) additional reactors at the site. The combined Plan fully addresses all planning standards, as required by NRC regulations and guidance documents.*

*When construction begins on Unit 2, the existing emergency plan will be updated (via addendum) with information which addresses notifications, construction staffing, evacuation, assembly, and protective measures to account for additional personnel on the site. The transition from the current emergency plan (PLP-201) to the Units 1, 2, and 3 Emergency Plan is described in an Implementation Schedule which is included as supplementary information in the EP portion of the COLA submittal.*

*The Units 1, 2, and 3 Emergency Plan describes 3 operating units inside a common protected area; a common Emergency Response Organization (ERO); a common ERO training program; some shared and separate equipment; separate EALs; and separate Emergency Response Facilities with the exception of the Emergency Operations Facility (EOF) and Joint Information Center (JIC) which are shared during response to an emergency, (either on the affected unit or a site-wide emergency). The existing notification scheme for notifying offsite agencies remains in place. Evacuation/assembly/accountability and protective actions onsite and offsite will not be impacted by additional units. The current 10 and 50-mile EPZ's will not be altered by the addition of new units; and the current Alert Notification System (ANS) remains the same for notification and alerting of the general population within the 10-mile radius of the site.*

(2) Include a review of the proposed extension of the existing site's emergency plan pursuant to 10 CFR 50.54(q), to ensure that the addition of a new reactor(s) would not decrease the effectiveness of the existing plans and the plans, as changed, would continue to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

*See Section IV of this evaluation.*

- (3) Describe any required updates to existing emergency facilities and equipment, including the alert notification system.

*The Units 1, 2, and 3 Emergency Plan describes three (3) separate Control Rooms, Technical Support Centers, and Operational Support Centers at the site which will be equipped, tested, and maintained, in accordance with NRC regulations and requirements. The current Emergency Operations Facility (EOF) and Joint Information Center (JIC) will be activated for response to an affected unit or site wide emergency and do not require expansion to accommodate the ERO. The current emergency response facilities that support Unit 1 will be updated, as necessary, with communications system and plant data information system improvements to effectively interface with Units 2 and 3 during the construction phase without impacting the effectiveness of the current processes in place at Unit 1.*

*Units 2 and 3 will be located within close proximity to the existing Unit 1. Modifications of the current 10-Mile Emergency Planning Zone (EPZ) boundary will not be required. Therefore, an expansion of the current Alert Notification System (ANS) will not be necessary.*

- (4) Incorporate any required changes to the existing onsite and offsite emergency response arrangements and capabilities with State and local authorities or private organizations.

*Existing letters of agreement and response arrangements with offsite support agencies, including private organizations, are not impacted by the additional units at the site. In support of the License Application, certification letters (required by Regulatory Guide 1.206 and 10 CFR Part 52) have been signed by offsite agencies indicating that they will continue to provide support to the site and participate in continuing planning efforts for the proposed new units. A revised letter of agreement to address the 3-unit site will be developed if Progress Energy proceeds with construction and operation of additional units. However, no major changes are required to be made to the state and local response arrangements and capabilities already in place to support HNP Unit 1.*

- (5) Justify the applicability of the existing 10-mile plume exposure EPZ and 50-mile ingestion control EPZ.

*The planning basis for the existing 10 and 50-mile EPZ's are described in NUREG-0654/FEMA-REP-1. The size of the current plume exposure (10-mile) EPZ was based on the following considerations (per NUREG-0654):*

- "Projected doses from the traditional design basis accidents would not exceed Protective Action Guide levels outside the zone;*
- Projected doses from most core melt sequences would not exceed Protective Action Guideline levels outside the zone;*

- *For the worst core melt sequences, immediate life threatening doses would generally not occur outside the zone;*
- *Detailed planning within 10 miles would provide a substantial base for the expansion of response efforts in the event that this proved necessary.”*

*The 10-mile and 50-mile EPZ is established for the currently licensed Unit 1. The additional units will be located a short distance from the current unit and within a common protected area. Doses for the current EPZ are within Protective Action Guidelines (PAGs) for a design basis accident. Even with expansion to accommodate two additional units, the current EPZ continues to meet the NUREG-0654 criteria of “about 10 miles radius”. State and local officials are satisfied and support maintaining the current EPZ for the additional units. The passive plant design incorporates improved safety systems; and offsite radiological consequences for the AP1000 design basis accident are below those of older generation reactors. Although this could provide a technical basis for reduction of the 10 and 50 mile EPZs were the Units sited alone, operation of the existing unit will require maintaining the 10-mile and 50-mile EPZ as currently established.*

*With the addition of two new units at the site, the current 10 and 50-mile EPZ boundaries for the HNP site meet regulatory guidance and are adequate to protect the health and safety of the general public.*

- (6) Address the applicability of the existing ETE or provide a revised ETE, if appropriate.

*An updated ETE has been developed. The ETE final report: Harris Nuclear Plant “Development of Evacuation Time Estimates”, KLD Associates, Inc., February 2009 is provided in the EP portion of the COLA submittal.*

- (7) If applicable, address the exercise requirements for collocated licensees, in accordance with Section IV.F.2.c of Appendix E to 10 CFR Part 50, and the conduct of EP activities and interactions discussed in RG 1.101, Revision 5.

*This item is not applicable to the HNP Emergency Preparedness program. The proposed new Units will be constructed on the existing site adjacent to Unit 1, and they will be owned and operated by Progress Energy Carolinas. The existing Unit 1 emergency plan provides for offsite plans applicable to the site to be exercised biennially with full participation by each offsite authority. The Units 1, 2, and 3 Emergency Plan, when implemented, will require the same periodicity for full or partial participation exercises. The emergency plans require conduct of a biennial exercise to test the onsite portions of emergency preparedness. The 3-Unit site will participate in emergency preparedness activities and interaction with offsite authorities for the period between exercises. EP administrative*

*procedures provide details concerning the scheduling and conduct of drills and exercises. An additional exercise will be required at the site (either full or partial participation) for each unit being constructed prior to fuel load, per 10 CFR 52. This activity will require changes in the current exercise schedule to accommodate offsite agencies.*

- (8) If applicable, include ITAAC which address any changes to the existing emergency plans, facilities and equipment, and programs that are to be implemented, along with a proposed schedule, with the application.

*No ITAAC is necessary to address changes to the existing Unit 1 emergency plan at this time.*

- (9) Describe how emergency plans, to include security, is integrated and coordinated with emergency plans of adjacent sites.

*This item is not applicable to the HNP EP program. The existing Unit 1 and proposed Units 2 and 3 will share a common Protected Area on the same site. Therefore, no coordination and interface between adjacent sites is necessary. The Units 1, 2, and 3 Emergency Plan describes coordination of emergency preparedness activities with Security, including notifications; and site-wide protective actions (evacuation, assembly, accountability). The Units 1, 2, and 3 Emergency Plan appropriately interfaces with the Site Security Plan.*

#### IV. Preliminary Screen and 50.54(q) Evaluation

REG-NGGC-0010 Rev. 12, Attachment 1 - Screen			
Identification Number(s)			
Applicable Plant(s):	BNP	CR3	HNP RNP
Harris EP COLA Rev. 2 Submittal – Supporting Documentation Revision No: 0			
<p><b>Implementing Activity Description:</b> This evaluation is being conducted to ensure that the construction and operation of two (2) new AP1000 units at the Harris site would not decrease the effectiveness of the existing HNP emergency plan (i.e., PLP- 201 Revision 54); and the plan, as changed, would continue to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.</p> <p>A combined Emergency Plan, i.e., the Units 1, 2, and 3 HNP Emergency Plan has been developed for the Combined License Application (COLA) which fully integrates emergency preparedness processes currently described in the Unit 1 emergency plan into a combined Plan incorporating two (2) additional reactors at the site. The combined Plan fully addresses all 16 planning standards, as required by NRC regulations and guidance documents.</p> <p>The changes incorporated into revision 2 of the Harris Units 1, 2 and 3 COLA Emergency Plan (Part 5) are to address NRC RAI clarifications and administrative improvements.</p>			
SECTION 1: Predetermination			
1a	Is a change to the Technical Specifications or Operating License necessary to implement the proposed activity?	<b>Yes</b> <input type="checkbox"/> Initiate a change in accordance with applicable procedure and go to Section 2	<b>No</b> <input checked="" type="checkbox"/> Continue to the next question
1b	Is the proposed activity fully bounded by a previously completed Screen or Evaluation performed in accordance with REG-NGGC-0010?	<b>Yes</b> <input type="checkbox"/> Enter the Reference below and go to Section 4	<b>No</b> <input checked="" type="checkbox"/> Go to Section 2
1c	Has the proposed activity been formally approved by the NRC?		
Previous Screen/Evaluation and/or NRC Approval Reference: Not applicable			
<b>Note:</b> Ensure the basis for concluding the Screen or NRC Approval Reference fully or partially bounds the change is documented in the Implementing Activity Description.			
SECTION 2: Applicability of Regulatory Processes Other Than 10 CFR 50.59			
Address the questions below for all aspects of the activity. <b>Refer to Attachment 12 and contact the responsible program owner, as appropriate, to assure the effect of the activity is accurately and thoroughly addressed.</b> If the answer is “Yes” for any portion of the activity, complete the associated attachment (e.g. Question 3 and Attachment 3). Note that it is not unusual to have more than one process apply to a given activity.			
2	Does the proposed activity involve a change to the Emergency Plan or an Emergency Plan implementing procedure needed to comply with the requirements of 10 CFR 50 Appendix E? (Attachment 2)	<b>Yes</b> <input checked="" type="checkbox"/>	<b>No</b> <input type="checkbox"/>

REG-NGGC-0010 Rev. 12, Attachment 1 - Screen			
Identification Number(s)			
Applicable Plant(s):	BNP	CR3	HNP
			X
Implementing Document No: Harris EP COLA Rev. 2 Submittal – Supporting Documentation		Revision No: 0	
3	Does the proposed activity involve a change to the Physical Security Plan, the Safeguards Contingency Plan or the Guard Training and Qualification Plan or the implementing procedures for these plans? (Attachment 3)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
4	Does the proposed activity involve a change to B.5.b related equipment and/or a strategy used to mitigate large area fires and explosions? (Attachment 4)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
5	Does the proposed activity involve a change to the Quality Assurance Program Description? (Attachment 5)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
6	Does the proposed activity involve a change to the Fire Protection Program (including safe shutdown and Appendix R requirements for example)? (Attachment 6)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
7	Does the proposed activity involve a change to the licensed operator requalification program? (Attachment 7)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
8	Does the proposed activity involve a change in thermal or chemical effluents, involve a change to the Environmental Protection Plan, or involve a significant change to land use that could impact the environment? (Attachment 8)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
9	Does the proposed activity involve a change to the Emergency Response Data System? (Attachment 9)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
10	<b>[BNP/RNP Only - A response to this question is not to be provided by Evaluators at CR3 and HNP]</b> Does the implementing activity affect a dry fuel storage facility or associated activities (e.g. haul path hazards analysis, spent fuel activities, cask preparation area)? (Attachment 10)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	<b><u>Applicability Conclusion</u></b> Are all aspects of the activity controlled by one or more of the Regulatory Processes identified in question 1a and questions 2 through 10 above?	Yes <input checked="" type="checkbox"/> Complete the required attachments and go to Section 4	No <input type="checkbox"/> Complete the required attachments and go to Section 3
SECTION 3: 10 CFR 50.59 Screen			
11a	Does the proposed activity involve a change to an SSC that adversely affects any FSAR-described design function? <b>Justification:</b>	Yes <input type="checkbox"/>	No <input type="checkbox"/> Enter Justification

REG-NGGC-0010 Rev. 12, Attachment 1 - Screen			
Identification Number(s)			
Applicable Plant(s):	BNP	CR3	X HNP RNP
Implementing Document No: Harris EP COLA Rev. 2 Submittal – Supporting Documentation		Revision No: 0	
11b	Does the proposed activity involve a change to a procedure that adversely affects how any FSAR-described SSC design function is performed or controlled?	Yes <input type="checkbox"/>	No <input type="checkbox"/> Enter Justification
Justification:			
11c	Does the proposed activity involve revising or replacing any FSAR-described evaluation methodology that is used in establishing the design bases or used in the safety analyses?	Yes <input type="checkbox"/>	No <input type="checkbox"/> Enter Justification
Justification:			
11d	Does the proposed activity involve a test or experiment not described in the FSAR, where an SSC is utilized or controlled in a manner that is outside the reference bounds of the design for that SSC or is inconsistent with analyses or descriptions in the FSAR?	Yes <input type="checkbox"/>	No <input type="checkbox"/> Enter Justification
Justification:			
Are any of these questions (11a, 11b, 11c, or 11d) answered "Yes?"		Yes <input type="checkbox"/> Complete and attach Attachment 11 and go to Section 4	No <input type="checkbox"/> Enter References below and go to Section 4
References:			
SECTION 4: Signatures			
Evaluator (Print/Sign) :	Pilo, Tony 2010.03.01 10:41:14 -05'00'	Date:	
Reviewer (Print/Sign) :	Waters, David 2010.03.01 10:59:49 -05'00'	Date:	
Supervisor (Print/Sign) :	Kitchen, Robert 2010.03.09 13:22:32 -05'00'	Date:	
Additional Reviews (if required)			
Reviewer (Print/Sign) :			Date:
Reviewer (Print/Sign) :			Date:



**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program Evaluation**

Identification Number(s)			
Applicable Plant(s):	BNP	CR3	HNP
			RNP
<p>Note: The Evaluator is responsible for having specific knowledge of this program. Refer to Attachment 12 <b>AND</b> contact the Supervisor - Emergency Preparedness or designee to assure the effect of the proposed change is accurately and thoroughly assessed.</p>			
Implementing Document No:		Revision No:	
Harris EP COLA Rev. 2 Submittal – Supporting Documentation		0	
1	<p>Does the proposed revision cause NRC requirements to no longer be met?</p> <p>Explain any change that reasonably brings into question the ability to meet any of the sixteen standards described in 10 CFR 50.47(b), and any applicable requirements of 10 CFR 50 Appendix E or any NRC previously approved alternatives to those requirements.</p>	<p><b>Yes</b> <input type="checkbox"/></p>	<p><b>No</b> <input checked="" type="checkbox"/></p>
<p><b>Justification, including citation and description of applicable NRC requirements of 10 CFR 50.47(b) and 10 CFR 50, Appendix E:</b></p> <p>A combined Emergency Plan, i.e., the Units 1, 2, and 3 HNP Emergency Plan has been developed for the Combined License Application (COLA) which fully integrates emergency preparedness processes currently described in the Unit 1 emergency plan (i.e., PLP-201, Revision 54) into a combined Plan incorporating two (2) additional reactors at the site. The development of the combined Emergency Plan included reformatting PLP-201, Revision 54 into a NUREG-0654 format. This was strictly an administrative change without changing the intent of the Plan. Other administrative enhancements were made without changing intent. The Units 1, 2, and 3 Emergency Plan fully addresses all planning standards, as required by NRC regulations and guidance documents. Justification that the combined Emergency Plan meets the 16 NRC planning standards and does not result in a decrease in effectiveness of Unit 1 emergency preparedness is described below.</p> <p><b>10CFR 50.47(b)(1) states “Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.”</b></p> <p>The primary responsibilities for the onsite Emergency Response Organization (ERO) and offsite State/local/federal organizations are not changed due to the addition of two (2) new units at the Harris site. The Units 1, 2, and 3 Emergency Plan reflects information from the existing emergency plan and describes the same individuals/organizations onsite and offsite by title who have key functions in emergency response. The letters of agreement contained in the existing emergency plan are not impacted by additional units at the site. Certification letters required by Reg. Guide 1.206 and 10 CFR 52 have been developed and agreed upon by offsite agencies that they will participate in continuing planning efforts for the proposed new units. No major changes are required to be made to the state and local response arrangements and capabilities already in place to support Unit 1.</p> <p>This change does not result in a decrease in capability or the ability for Unit 1 personnel to respond to an emergency. Therefore, this change does not decrease effectiveness of the emergency preparedness program.</p> <p><b>10CFR50.47 (b) (2) states “Onshift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.”</b> NUREG-0654, Section B.5 states “Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled “Minimum Staffing Requirements for Nuclear Power Plant Emergencies”. The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1.”</p>			

**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation**

Applicable Plant(s):	Identification Number(s)			
	BNP	CR3	HNP	RNP
	<p>The ability to provide adequate onshift minimum staffing and augmented staffing during an emergency is not decreased with the addition of two new units. The current Unit 1 minimum onshift staffing, as described in the Units 1, 2, and 3 Emergency Plan continues to meet staffing levels required by NUREG-0654, Table B-1. The capability of the Unit 1 ERO to respond to an emergency is not affected by the additional units. Table B-1 in the combined Plan shows some functions that are shared between the units (for example, fire brigade) and reflects staffing for all 3 units. Staffing for Units 2 and 3 is consistent with Section 13.1, Technical Specification requirements and routine shift staffing for operations, as described in 10 CFR 50.54(m). During an emergency on Unit 1, additional resources from Units 2 and 3 would be available to support Unit 1 during an emergency. This activity does not result in a decrease in effectiveness of the emergency preparedness program and continues to meet NRC regulatory requirements.</p> <p>The Units 1, 2, and 3 Emergency Plan describes emergency personnel assignment information; direction and control during an event, including the site emergency coordinator description/functions/line of succession; and describes position descriptions and major tasks assigned to the ERO consistent with the current emergency plan. The Plan includes command and control information for a unit-specific and site-wide emergency and assigns Unit 1 as the command and control lead for the emergency. Procedures will be revised to ensure that notifications and information exchange between all unit control rooms is appropriately addressed.</p> <p>The ability to augment staffing for the TSC, OSC, EOF, and JIC is not decreased by the addition of two new units. Augmentation times and facility staffing levels remain consistent with the requirements of NUREG-0654, Table B-1. Procedures will be revised, as appropriate, to address activation and staffing of the emergency response facilities. This activity continues to meet regulatory requirements and does not result in a decrease in effectiveness of the Unit 1 emergency plan.</p> <p><b>10CFR50.47 (b) (3) states “Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee’s near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.”</b></p> <p>The current arrangements for requesting and coordinating offsite resources, as described in the Unit 1 emergency plan, are not impacted by the addition of new units at the Harris site. The Units 1, 2, and 3 Emergency Plan describes emergency support and offsite resources consistent with the current Plan. No additional State, local or federal organizations will be required to provide emergency response support; and the current accommodations for offsite agencies in the EOF remain the same for a 3-unit site.</p> <p>This change does not result in a decrease in capability or the ability of Unit 1 personnel to respond to an emergency. Therefore, this change does not decrease effectiveness of the emergency preparedness program.</p> <p><b>10CFR50.47 (b) (4) states “A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.” 10 CFR 50, Appendix E, Section B., <i>Assessment Actions</i>, states (in part) “The means to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety.” Section C., <i>Activation of Emergency Organization</i>, further states (in part) “Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. ”</b></p> <p>The addition of new units at the HNP site does not impact the current emergency classification and action level scheme for Unit 1. The Units 1, 2, and 3 Emergency Plan describes four (4) emergency classifications which are consistent between all units. The Plan describes the Unit 1 EAL classification scheme (based on criteria in NUREG-0654, Revision 1); and the classification scheme for Units 2 and 3 (AP1000 passive design plants) that is based on</p>			

**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation**

Applicable Plant(s):	Identification Number(s)			
	BNP	CR3	HNP	RNP
NEI 07-01, Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors, July 2009.			X	
<p>The ability to properly classify an emergency is not decreased by the addition of two new units at the site. This change continues to meet NRC regulations and guidance and does not decrease the effectiveness of the existing Unit 1 emergency plan.</p> <p><b>10CFR50.47 (b) (5) states “Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone has been established.” 10CFR50, Appendix E, Section D.1 states (in part): “Administrative and physical means for notifying local, State, and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary, shall be described.” Section D. 3 states (in part): “A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency.”</b></p> <p><b>NUREG-0654, Section E, Items 1 and 2 state: “1. Each organization shall establish procedures which describe mutually agreeable bases for notification of response organizations consistent with the emergency classification scheme set forth in Appendix 1. These procedures shall include means of verification of messages. The specific details of verification need not be included in the plan. 2. Each organization shall establish procedures for alerting, notifying, and mobilizing emergency response personnel.”</b></p> <p>The notification call-out scheme to Progress Energy personnel, State, local, federal agencies and instructions to the general public in the 10-mile EPZ is not decreased by the addition of new units at the HNP site. The Units 1, 2, and 3 Emergency Plan describes the notification process consistent with the Unit 1 Plan. The Plan includes information describing a unit-specific and site-wide emergency and assigns Unit 1 as the command and control lead for the emergency. The emergency notification form which is agreed upon by utility, state, and county emergency management is designed to address two (2) new units at the site.</p> <p>Units 2 and 3 will be located within close proximity to the existing Unit 1. Modifications to the current 10-Mile Emergency Planning Zone (EPZ) boundary will not be required and expansion of the current Alert Notification System (ANS) will not be necessary. The current processes in place for notifying the general public during an emergency are not impacted.</p> <p>Procedures are in place to ensure that notifications and information exchange between the control rooms at each unit are addressed and also reflect the additions of Units 2 and 3. These changes are administrative and do not decrease effectiveness of the Unit 1 ERO to make notifications.</p> <p>This activity continues to meet regulatory requirements; does not reduce the capability of Unit 1 to respond to an emergency; and does not result in a decrease in effectiveness of the Unit 1 emergency plan.</p> <p><b>10CFR50.47 (b) (6) states “Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.” Section 8 additionally states “Adequate emergency facilities and equipment to support the emergency response are provided and maintained.” 10CFR50, Appendix E, Section E. 9, Emergency Facilities and Equipment, states: “Adequate provisions shall be made and described for emergency facilities and equipment, including...At least one onsite and one offsite communications system: each system shall have a backup power source.”</b></p> <p>The addition of new units at the Harris site does not affect the ability of Unit 1 to promptly communicate with onsite or offsite emergency personnel or the general public. The Units 1, 2, and 3 Emergency Plan provides a description of onsite and offsite communications systems which is consistent with the current emergency plan. As described in the Plan, the plant process monitoring system for Unit 1 contains components which are different from Units 2 and 3; however, both systems provide appropriate visual displays and monitoring information in the control rooms, Technical Support Centers, and the Emergency Operations Facility.</p>				

**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation**

Applicable Plant(s):	Identification Number(s)			
	BNP	CR3	HNP	RNP
			X	
<p>This activity does not decrease the capability of Unit 1 to provide emergency response information system and data during an emergency. This activity does not result in a decrease in effectiveness of the emergency preparedness program and continues to meet NRC regulatory requirements.</p> <p><b>10 CFR 50.47 (b) (7) states “Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.” 10 CFR 50, Appendix E, Section D. 2 states (in part) “Provisions shall be described for yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for public notification and the protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency.” NUREG-0654, Section II.G., Item 1 states “Each organization shall provide a coordinated periodic (at least annually) dissemination of information to the public regarding how they will be notified and what their actions should be in an emergency. This information shall include, but not necessarily be limited to: a. educational information on radiation; b. contact for additional information; c. protective measures, e.g., evacuation routes and relocation centers, sheltering, respiratory protection, radioprotective drugs; and d. special needs of the handicapped. Means for accomplishing this dissemination may include, but are not necessarily limited to: information in the telephone book; periodic information in utility bills; posting in public areas; and publications distributed on an annual basis.” Section II.G, Item 3 states (in part) “The public information program shall provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material that is likely to be available in a residence during an emergency. Updated information shall be disseminated at least annually.”</b></p> <p>The development, distribution, and general content of public safety information, and periodicity for distribution of information, is not affected by the addition of new units at the Harris site. The Unit 1, 2, and 3 Emergency Plan describes the public education and information program which is currently in place for Unit 1. This is an administrative process to support the HNP emergency preparedness program; and information is generic for the current and proposed units.</p> <p>This activity does not reduce emergency preparedness for Unit 1 and continues to meet 10 CFR 50.47 requirements and NUREG-0654 guidance.</p> <p><b>10 CFR 50.47 (b) (8) states “Adequate emergency facilities and equipment to support the emergency must be provided and maintained.” 10 CFR 50, Appendix E, Section E, Item 9 states (in part) “Adequate provisions shall be made and described for emergency facilities and equipment...”</b></p> <p>The addition of new units at the Harris site does not impact the ability of the Unit 1 emergency response facilities to respond to an emergency. The Units 1, 2, and 3 Emergency Plan describes the existing characteristics, functions, and emergency equipment and supplies in the Emergency Operations Facility (EOF) and Joint Information Center (JIC), per the current Emergency Plan. The existing EOF and JIC will be staffed and activated to provide support for an emergency on any of the 3 units or a site-wide event. The Units 1, 2, and 3 Emergency Plan describes the current TSC and OSC to support a Unit 1 emergency; and describes a TSC and OSC for each of the proposed AP1000 Units. The TSC and OSC for the passive design plants are built into the design, as described in the Design Control Document (DCD), Revision 17 and meet all current NRC requirements. The Control Rooms, TSC’s, and OSC’s are designed, equipped, maintained, and tested per current NRC regulations. All facilities will be maintained for operability in accordance with plant procedures. The Units 1, 2, and 3 Emergency Plan describes a common ERO for the 3-unit site. The ERO would respond to a unit-specific emergency or a site-wide event in which Unit 1 would take the lead for direction and control.</p> <p>Administrative procedures which support the emergency plan will be revised to describe details for operability testing, maintaining, and inventorying facilities and equipment at the 3-unit site.</p>				

**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation**

Applicable Plant(s):	Identification Number(s)			
	BNP	CR3	HNP	RNP
			X	
<p>The addition of two units at the site will not decrease the ability of the ERO to respond to an emergency. This activity continues to meet regulatory requirements and does not result in a decrease in effectiveness of the Unit 1 emergency plan.</p> <p><b>10 CFR 50.47 (b) (9) states “Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency conditions are in use.” NUREG-0654, Section II. I, Item 7 states “Each organization shall describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone which are an intrinsic part of the concept of operations for the facility.” Item 8 states “Each organization, where appropriate, shall provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous pathways. This shall include activation, notifications means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times.” Item 11 states “Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.”</b></p> <p>The methods, systems, and equipment for assessing and monitoring an emergency are not impacted with the addition of two new units at the site; and capability for the ERO to respond is not impacted.</p> <p>The Units 1, 2, and 3 Emergency Plan describes accident assessment during a declared emergency and descriptions of systems used to evaluate plant conditions on each unit. Severe accident management guidelines and processes are described consistent with the current Unit 1 emergency plan. Radiological monitoring instrumentation; plant process monitoring systems; normal and post-accident systems; seismic monitoring capability; and meteorological instrumentation are described; and differences based on plant design are also addressed. The ability to determine source terms and perform environmental monitoring and dose projections is not impacted by additional units at the site.</p> <p>This activity continues to meet 10 CFR 50.47 requirements and guidance in NUREG-0654. This change does not result in a decrease in effectiveness of the Unit 1 emergency plan.</p> <p><b>10 CFR 50.47 (b) (10) states “A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.” NUREG-0654, Section J, Item 8 states: “Each licensee’s plan shall contain time estimates for evacuation within the plume exposure EPZ. These shall be in accordance with Attachment 4.”</b></p> <p>Protective action decision-making; processes to address evacuation and sheltering; and the distribution of KI are not impacted by additional units at Harris.</p> <p>The 10-mile and 50-mile EPZ boundaries, which are currently established for Unit 1, per NUREG-0654/FEMA-REP-1 guidance, do not require modifications due to the new units. The additional units will be located a short distance from the current unit and within a common Protected Area. Doses for the current EPZ are within Protective Action Guidelines (PAGs) for a design basis accident. Even with expansion to accommodate two additional units, the current EPZ continues to meet the NUREG-0654 criteria of “about 10 miles radius”. State and local officials are satisfied and support maintaining the current EPZ for the additional units. The passive plant design incorporates improved safety systems; and offsite radiological consequences for the AP1000 design basis accident are below those of older generation reactors. With the addition of two new units at the site, protective action decision-making for sheltering or evacuating the general public is unchanged. The current 10 and 50-mile EPZ boundaries for the HNP site are considered to meet regulatory guidance and are adequate to protect the health and safety of the general public.</p> <p>The HNP Evacuation Time Estimate (ETE) supporting the current unit has been updated and reflects additional population in the 10-mile EPZ since the 2007 update and generally unchanged evacuation times due to improved transportation systems. The ETE was updated, in accordance with NRC regulations and requirements, and developed</p>				

**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation**

Applicable Plant(s):	Identification Number(s)			
	BNP	CR3	HNP	RNP
	<p>with input from state and county emergency management. A special event scenario was included in the ETE report to reflect peak construction for the new units and an increased workforce. The existing roadway system was used for the construction scenario, and no roadway improvements were considered. Permanent resident population and shadow population were extrapolated to 2016 for this scenario. The increased population at the site will not require an expansion of current major evacuation routes. The ETE will continue to be updated every five (5) years per the current emergency plan requirements and as reflected in the Units 1, 2, and 3 Emergency Plan.</p> <p>The current site assembly areas and evacuation routes will need to be evaluated prior to the start of construction of the new units to ensure construction and operation of the new units does not reduce the level of safety for plant workers. When construction begins on Units 2 and 3, the emergency plan will be updated with information which addresses notifications, construction staffing, evacuation, assembly, and protective measures to account for additional personnel on the site. Note: The transition from the current emergency plan (PLP-201) to the Units 1, 2, and 3 Emergency Plan is described in an Implementation Schedule which is included as supplementary information in the EP COLA submittal.</p> <p>The process for distribution of KI is not affected by the addition of new units at the site. Onsite and offsite protective measures for emergency workers will be consistent with current planning processes with no impact on Unit 1.</p> <p>This change does not result in a decrease in capability or the ability for Unit 1 personnel to respond to an emergency. Therefore, this change does not decrease effectiveness.</p> <p><b>10 CFR 50.47 (b) (11) states “Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.”</b></p> <p>The addition of new units at the Harris site does not change or impact the processes for controlling exposures that are currently in place for Unit 1. The onsite emergency exposure guidelines described in the Units 1, 2, and 3 Emergency Plan are unchanged and continue to be consistent with EPA Protective Action Guides (PAGs). The radiation protection program for all units will continue to provide methods for implementing exposure guidelines consistent with the current program and regulations. Offsite agency processes to control exposures and decontaminate emergency personnel are also not impacted.</p> <p>This activity continues to meet regulatory requirements; does not reduce the capability of Unit 1 to control radiological exposures; and does not result in a decrease in effectiveness of the Unit 1 emergency plan.</p> <p><b>10 CFR 50.47 (b) (12) states “Arrangements are made for medical services for contaminated injured individuals.” 10 CFR 50, Appendix E.IV.E states (in part) “Adequate provisions shall be made and described for emergency facilities and equipment, including ... 6. Arrangements for transportation of contaminated injured individuals from the site to specifically identified treatment facilities outside the site boundary. 7. Arrangements for treatment of individuals injured in support of licensed activities on the site at treatment facilities outside the site boundary.” NUREG-0654, Section II. L. 4 states “Each organization shall arrange for transporting victims of radiological accidents to medical support facilities.” NUREG-0654, Section II. P. 4 states (in part) “Each organization shall update its plan and agreements, as needed, review and certify it to be current on an annual basis.”</b></p> <p>The Units 1, 2, and 3 Emergency Plan describes onsite first aid capability and medical arrangements to address injured and contaminated individuals, as required by NRC regulations and guidance. The arrangements for transportation and medical services at the Harris site are not impacted by the addition of two new units. The letter of agreement support agencies, including hospitals, ambulance services, and private physicians that are described in the current Unit 1 emergency plan will remain in effect. The current letters of agreement with offsite support agencies will continue to be reviewed annually and updated as necessary. Offsite agencies have signed certifications to provide continuing medical support for two new units, if constructed.</p> <p>The ability to provide onsite first aid capability and arrangements for transportation and treatment of injured, contaminated individuals is not impacted by additional units at the Harris site. This change does not result in a decrease in capability or the ability for Unit 1 personnel to respond to a medical emergency. Therefore, this change does not decrease effectiveness of the existing Unit 1 emergency plan.</p>			

**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation**

Applicable Plant(s):	Identification Number(s)			
	BNP	CR3	HNP	RNP
			X	
<p><b>10 CFR 50.47 (b) (13) states “General plans for recovery and reentry are developed.”</b></p> <p>The plans and processes to address recovery and reentry following a classified emergency are not decreased by the addition of new units at the HNP site. The Units 1, 2, and 3 Emergency Plan describes the recovery and reentry process for the affected unit (or site, if more than one unit is affected). Information is consistent with the current HNP Emergency Plan and includes recovery plan activation; the basic framework for staffing a recovery organization; and considerations for reentry after the event. On the 3-unit site, equipment and personnel resources could be shared following an emergency, which enhances each unit’s ability to recover from the event.</p> <p>This activity does not result in a decrease in effectiveness of the emergency preparedness program for Unit 1 and continues to meet NRC regulations and guidance.</p> <p><b>10 CFR 50.47 (b) (14) states “Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.”</b></p> <p>The Units 1, 2, and 3 Emergency Plan describes the drill/exercise program for the site, including periodicity requirements. There are no required changes to drills and exercises due to the addition of new units. The Plan describes communications, medical emergency, radiological monitoring, and health physics drill requirements. A biennial exercise with full participation of state, county, and federal agencies is also described. Fire drills will continue to be conducted in accordance with unit technical specifications. The 3-Unit site will continue to participate in emergency preparedness activities and interaction with offsite authorities for the period between exercises. EP administrative procedures provide details concerning the scheduling and conduct of EP-related drills/exercises.</p> <p>The addition of two units at the site will not adversely affect the Unit 1 drill/exercise program. An additional exercise will be required at the site (either full or partial participation) for each unit being constructed prior to fuel load, per 10 CFR 52. This activity will require changes in the current exercise schedule to accommodate offsite agencies; however, this change is administrative and does not result in a decrease to the current program.</p> <p>This activity does not decrease the effectiveness of emergency preparedness and continues to meet the requirements and guidance described in 10 CFR 50.47 (b), Appendix E, and NUREG-0654.</p> <p><b>10 CFR 50.47 (b) (15) states “Radiological emergency response training is provided to those who may be called on to assist in an emergency.”</b></p> <p>The Units 1, 2, and 3 Emergency Plan describes specialized initial training and periodic retraining for onsite and offsite emergency response personnel. Information is consistent with the current Unit 1 emergency plan and includes general training requirements for members of the onsite emergency response organization and training requirements for offsite support agencies (hospital, rescue, local law enforcement, fire personnel). EP administrative procedures contain details describing conduct of training and maintenance of ERO qualifications.</p> <p>The addition of two new units at the Harris site does not result in a decrease in effectiveness of the emergency preparedness training program for Unit 1. This activity continues to meet NRC regulations and guidance.</p> <p><b>10 CFR 50.47 (b) (16) states “(16) Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.”</b></p> <p>The responsibilities for emergency plan development, review, and distribution are not adversely impacted by additional units at the HNP site. The Units 1, 2, and 3 HNP Emergency Plan describes responsibilities for the planning effort; maintenance of the EP program; and administrative processes consistent with the Unit 1 emergency plan. EP administrative procedures will be revised, as necessary, to address emergency equipment operability checks, inventories, and other maintenance activities required for each unit Control Room, TSC, OSC and the shared EOF and JIC.</p>				

**REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation**

Identification Number(s)			
Applicable Plant(s):	BNP	CR3	HNP
			X
<p>This activity is administrative; continues to meet regulatory requirements; and does not result in a decrease in effectiveness of the Unit 1 emergency plan.</p> <p>In addition to the 16 planning standards referenced above the HNP Units 1, 2 and 3 COLA Revision 2 changes do not question the ability to meet the regulations of 10 CFR 50, Appendix E or other previously approved NRC alternative requirements.</p>			
2	<p>Does the proposed change <i>degrade or result in the loss of the Emergency Plan's</i>:</p> <ul style="list-style-type: none"> <li>• Capability to respond to an emergency? or</li> <li>• Timeliness to perform a function? or</li> <li>• Effectiveness of measures to ensure protection of the public health and safety? or</li> <li>• Effectiveness of facilities, response organizations, response equipment, or response procedures</li> </ul>		<p><b>Yes</b> <input type="checkbox"/></p>
			<p><b>No</b> <input checked="" type="checkbox"/></p>
<p>Explain how the change/revision maintains reasonable assurance of adequate protective actions. An explanation may be based on an assessment of its effects on public health and safety, a review of applicable plans, procedures, and resources, or by demonstration of the affected capabilities in a drill or exercise. Consideration should be given to any applicable site-specific planning needs.</p> <p><b>Justification:</b></p> <p>The Units 1, 2, and 3 HNP Emergency Plan fully integrates emergency preparedness processes currently described in the Unit 1 emergency plan (i.e., PLP-201) into a combined Plan incorporating two (2) additional reactors at the site. The Units 1, 2, and 3 Emergency Plan fully addresses all planning standards, as required by NRC regulations and guidance documents. The combined Plan for all units, along with state and county plans assures that adequate protective measures can be taken to protect the public in the event of a radiological emergency.</p> <p>Elements of the current HNP emergency plan and the capability of the onsite and offsite emergency organizations to respond to and recover from a classified emergency have been successfully demonstrated in NRC/FEMA evaluated exercises in support of Unit 1. The Units 1, 2, and 3 Emergency Plan contains the same EP program elements as the Unit 1 emergency plan; and both plans provide "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency."</p> <p>The additional personnel, resources, and equipment provided by the additional units will enhance the capability to respond to an emergency at the Harris site. The Units 1, 2, and 3 Emergency Plan continues to meet NRC regulations and requirements in support of emergency preparedness and does not detract from the capability of Unit 1 to respond to an emergency.</p>			



REG-NGGC-0010 Rev. 12, Attachment 2—10 CFR 50.54(q) Emergency Preparedness Program  
Evaluation

Applicable Plant(s):	Identification Number(s)			
	BNP	CR3	HNP	RNP
			X	
If either of the questions above have been answered "Yes," notify Licensing/Regulatory Programs Unit and obtain NRC approval prior to implementation. [NOCS 40104-CR3]				
Evaluator (Print/Sign):	Tony Pile / Jey R			Date: 3/9/10
Reviewer (Print/Sign):	David Stich / David Stich			Date: 3-9-10