

## PMHarrisCOL PEmails

---

**From:** Brian Anderson  
**Sent:** Thursday, November 13, 2008 2:46 PM  
**To:** robert.kitchen@pgnmail.com; david.waters@pgnmail.com; tillie.wilkins@pgnmail.com; PMHarrisCOL PEmails  
**Cc:** Manny Comar; Brian Anderson  
**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 048 RELATED TO SRP SECTION 13.3 FOR THE SHEARON HARRIS UNITS 2 AND 3 COMBINED LICENSE APPLICATION  
**Attachments:** HAR RAI 048 - ML083180743.pdf  
**Importance:** High

Attached is RAI Letter No. 048 related to SRP Section 13.3 for the Shearon Harris Units 2 and 3 combined license application. The ADAMS Accession number is ML083180743.

Brian Anderson  
301-415-9967  
Project Manager, AP1000 Projects Branch 1  
Office of New Reactors  
U.S. Nuclear Regulatory Commission

**Hearing Identifier:** ShearonHarris\_COL\_Public  
**Email Number:** 240

**Mail Envelope Properties** (CB87FC66F95637428C5E0D066E756B6F9354ACF2BD)

**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 048 RELATED TO SRP SECTION 13.3 FOR THE SHEARON HARRIS UNITS 2 AND 3 COMBINED LICENSE APPLICATION

**Sent Date:** 11/13/2008 2:46:13 PM  
**Received Date:** 11/13/2008 2:46:16 PM  
**From:** Brian Anderson

**Created By:** Brian.Anderson@nrc.gov

**Recipients:**

"Manny Comar" <Manny.Comar@nrc.gov>  
Tracking Status: None  
"Brian Anderson" <Brian.Anderson@nrc.gov>  
Tracking Status: None  
"robert.kitchen@pgnmail.com" <robert.kitchen@pgnmail.com>  
Tracking Status: None  
"david.waters@pgnmail.com" <david.waters@pgnmail.com>  
Tracking Status: None  
"tillie.wilkins@pgnmail.com" <tillie.wilkins@pgnmail.com>  
Tracking Status: None  
"PMHarrisCOL PEmails" <PMHarrisCOL.PEmails@nrc.gov>  
Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	323	11/13/2008 2:46:16 PM
HAR RAI 048 - ML083180743.pdf		198918

**Options**

**Priority:** High  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

## HarrisRAIsPEm Resource

---

**From:** Brian Anderson  
**Sent:** Thursday, November 13, 2008 2:25 PM  
**To:** HarrisRAIsPEm Resource  
**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 048 RELATED TO SRP SECTION 13.3 FOR THE SHEARON HARRIS UNITS 2 AND 3 COMBINED LICENSE APPLICATION  
**Attachments:** HAR-RAI-LTR-048.doc  
**Importance:** High

**Hearing Identifier:** HarrisCOL\_eRAIs  
**Email Number:** 51

**Mail Envelope Properties** (CB87FC66F95637428C5E0D066E756B6F9354ACF298)

**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 048 RELATED TO SRP SECTION 13.3 FOR THE SHEARON HARRIS UNITS 2 AND 3 COMBINED LICENSE APPLICATION

**Sent Date:** 11/13/2008 2:24:34 PM

**Received Date:** 11/13/2008 2:24:37 PM

**From:** Brian Anderson

**Created By:** Brian.Anderson@nrc.gov

**Recipients:**

"HarrisRAIsPEm Resource" <HarrisRAIsPEm.Resource@nrc.gov>

Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	3	11/13/2008 2:24:37 PM
HAR-RAI-LTR-048.doc	119290	

**Options**

**Priority:** High

**Return Notification:** No

**Reply Requested:** No

**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

November 13, 2008

James Scarola  
Senior Vice President and  
Chief Nuclear Officer  
PO Box 1551  
411 Fayetteville Street Mall  
Raleigh NC 27602

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 048 RELATED TO  
SRP SECTION 13.3 FOR THE SHEARON HARRIS UNITS 2 AND 3 COMBINED  
LICENSE APPLICATION

Dear Mr. Scarola:

By letter dated February 18, 2008, Progress Energy submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advanced passive pressurized water reactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me at 301-415-9967 or you may contact Manny Comar, the lead project manager for the Harris combined license at 301-415-3863.

Sincerely,

**/RA/**

Brian C. Anderson, Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-022  
52-023

eRAI Tracking No. 1126

Enclosure:  
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-9967 or you may contact Manny Comar, the lead project manager for the Harris combined license at 301-415-3863.

Sincerely,

**/RA/**

Brian C. Anderson, Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-022  
52-023

eRAI Tracking No. 1126

Enclosure:  
Request for Additional Information

Distribution:

Public	SCoffin	SGoetz
RidsNroDnrlNwe1	BHughes	ERobinson
RidsNroLAKGoldstein	TSimms	KWilliams
RidsOgcMailCenter	BAnderson	DBarss
RidsAcrsAcnwMailCenter	MComar	
RidsRgn2MailCenter	RJoshi	
RidsNroDnrlNwe2	SBrock	

NRO-002

OFFICE	LIB/BC	NWE1/PM	OGC	NWE1/L-PM
NAME	KWilliams*	BAnderson*	SBrock*	MComar*
DATE	10/7/08	10/7/08	10/17/08	11/13/08

\*Approval captured electronically in the electronic RAI system.

**OFFICIAL RECORD COPY**

**Request for Additional Information  
Shearon Harris Units 2 and 3  
Progress Energy Carolinas, Inc.  
Docket No. 52-022 and 52-023  
SRP Section: 13.03 - Emergency Planning  
Application Section: Part 5 - Emergency Planning**

**QUESTIONS for Licensing and Inspection Branch (NSIR/DPR/LIB (EP))**

13.03-59

**SITE-1:** Assignment of Primary Responsibilities for Emergency Response

Basis: 10 CFR 50.47(b)(1); 10 CFR 50, Appendix E.IV.A; NUREG-0654/FEMA-REP-1, Evaluation Criterion A.1, Evaluation Criterion A.3, Evaluation Criterion A.4

SRP Acceptance Criteria: Requirement A; Acceptance Criteria 1 and 18

A. Section A, "Assignment of Responsibility (Organizational Control)," of the Harris Nuclear Plant (HNP) Emergency Plan, Table A-1, "Organizations Participating in Emergency Response," defines assignment of responsibility, however there was inconsistency noted between text, tables and figures within the HNP Emergency Plan. Table A-1 and Figures A-1 and A-2 do not contain consistent terminology and are not consistent with some components listed in the narrative (i.e., FEMA is discussed in Section A.6.2 and the Department of Homeland Security in A.6.3 but neither is listed in Table A-1 or Figures A-1 and A-2. Corporate communications and management were listed in the diagrams but only Harris Nuclear Plant responsibilities were listed in the narrative.) Clarify inconsistencies between text, tables and figures.

B. Section A, "Assignment of Responsibility (Organizational Control)," of the HNP Emergency Plan identifies 24-hour communication capabilities, including titles of responsible individuals, for the State of North Carolina, Counties of Chatham, Harnett, Lee and Wake, and various private and federal organizations, however there was no clearly stated 24-hour communication point identified for HNP within the HNP Emergency Plan. Clarify the HNP 24-hour communication point of contact.

C. Appendix 3, "Letters of Agreement," of the HNP Emergency Plan is a list of support organizations that states "copies of the original agreements are kept on file by HNP Emergency Preparedness or Progress Energy Contract Services," however no letters of agreement or signature pages exist in the HNP Emergency Plan. Provide the appropriate letters of agreement or signature pages.

13.03-60

**SITE-2:** Onsite Emergency Response Organization Assignments

Basis: 10 CFR 50.47(b)(2); 10 CFR 50, Appendix E.IV.A.1, Appendix E.IV.A.2.a, Appendix E.IV.A.2.b, Appendix E.IV.A.5; NUREG-0654/FEMA-REP-1, Evaluation Criterion B.5, Evaluation Criterion B.6, Evaluation Criterion B.7, Evaluation Criterion B.8, Evaluation Criterion B.9

SRP Acceptance Criteria: Requirements A and B; Acceptance Criteria 1 and 2

A. Section B.1, "General," (page B-1) of the Harris Nuclear Plant (HNP) Emergency Plan states that the HNP emergency organization is compatible with and integrated into the normal mode of operation, however the normal plant operating organization description was not clear. Provide a comprehensive description of the HNP normal plant operating organization.

B. Appendix 5, “NUREG-0654 Cross Reference,” of the HNP Emergency Plan references the Administrative and Logistics Manager (Section B.4.4.f) as the position responsible for logistics support for emergency personnel; the Technical Analysis Manager (Section B.4.4.j) for technical support for planning and reentry/recovery; the Communications Manager (Section B.4.4.u) as the management interface with governmental authorities; and the Company Spokesperson (Section B.4.5.a) for release of information, coordinated with governmental authorities, to news media during an emergency. None of the details for these positions were included in the position descriptions in Section B.4 of the plan. Provide additional information summarizing how the functions of logistics support for emergency personnel, technical support for planning and reentry/recovery operations, management level interface with governmental authorities, and release of information, coordinated with governmental authorities, to news media during an emergency are conducted during an emergency at the Harris Nuclear Plant.

C. Table B-1, “Minimum Staffing Requirements for Emergencies,” of the HNP Emergency Plan identifies minimum shift staffing. Appendix 5, “NUREG-0654 Cross Reference,” Criteria B.5 and B.7, lists positions by section and title in the HNP Emergency Plan. Some emergency positions listed in Table B-1 are inconsistent with the position titles listed in Appendix 5, Criteria B.5 and B.7, such as the Plant Operations Director-CR and Shift Technical Advisor. Also there are inconsistencies in section numbers for Maintenance Planners, Radiological Control Coordinator, Chemistry Team, and Radiological Control Team between the Emergency Plan text and Appendix 5. Section B.4.5, “Joint Information Center (JIC),” (pages B-13, 14) of the HNP Emergency Plan identifies an Administrative Assistant (Section B.4.5.e) and Customer Service Center (Section B.4.5.h) but neither is shown in Figure B-2, “Harris Emergency Response Organization (EOF, JIC).” Also, Section B.4.5.d, “Administrative Coordinator,” states that the position reports to the Technical Specialist (Section B.4.5.b) but Figure B-2 shows that the position reports to the Company Spokeperson (sic) (section B.4.5.a) (*note: spelling typo in Figure B-2*). Clarify inconsistencies between Section B.4, Table B-1, Figure B-2, and Appendix 5 position titles.

D. Figure B-1, “Harris Emergency Response Organization (CR, TSC, OSC),” of the HNP Emergency Plan shows the Site Emergency Coordinator-Control Room (SEC-CR) reporting to the Plant Operations Director but Section B.4.1.b, “Site Emergency Coordinator – CR,” (page B-4) states that the duties are turned over to the Site Emergency Coordinator-Technical Support Center (SEC-TSC) and the Emergency Response Manager after the TSC is activated. Explain the role and title of the SEC-CR after the SEC-TSC takes over.

13.03-61

**SITE-3: Emergency Response Support Resources**

Basis: 10 CFR 50.47(b)(3); 10 CFR 50, Appendix E, IV.A.7;

NUREG-0654/FEMA-REP-1, Evaluation Criterion C.1, Evaluation Criterion C.4

SRP Acceptance Criteria: Requirements A and B; Acceptance Criteria 1 and 2

A. Section C.2, “Federal Government Support,” (pages C-2, 3) of the HNP Emergency Plan refers to the National Response Plan (NRP), rather than the National Response Framework (NRF) which has replaced the NRP (see <http://www.fema.gov/NRF>). Provide the revision to the HNP Emergency Plan as a result of this change.

B. The HNP Emergency Plan did not identify specific resources the licensee would make available to support Federal response. Provide a summary of licensee resources that would be made available to support Federal response.

**(SITE-4: intentionally left blank)**

13.03-62

**SITE-5: Activation and Notification Processes**

Basis: 10 CFR 50.47(b)(5); 10 CFR 50, Appendix E.IV.C; NUREG-0654/FEMA-REP-1, Evaluation Criterion E.2, Evaluation Criterion E.3, Evaluation Criterion E.7

SRP Acceptance Criteria: Requirements A and B; Acceptance Criteria 1, 2 and 6

A. Section E.2, "Notification of State, Local, and Federal Response Personnel," (pages E-1, 2) of the HNP Emergency Plan lists general information that may be included in follow-up messages. Section B, "Onsite Emergency Organization," of the HNP Emergency Plan discusses duties and responsibilities, including staff augmentation to provide necessary support within 60-75 minutes (page B-2). There is no statement regarding when full functional operation is required for the TSC or EOF. Provide activation requirements, including when the facilities are expected to achieve full functional operation.

13.03-63

**SITE-6: Communication Processes**

Basis: 10 CFR 50.47(b)(6); 10 CFR 50, Appendix E.IV.E.9.a; 10 CFR 50, Appendix E.IV.E.9.b; 10 CFR 50, Appendix E.IV.E.9.c; NUREG-0654/FEMA-REP-1, Evaluation Criterion F.1, Evaluation Criterion F.3

SRP Acceptance Criteria: Requirements A and B; Acceptance Criteria 1 and 2

A. Sections N.2.1. a thru d, "Communications Drills," (pages N-2, 3) of the HNP Emergency Plan define required testing, however in Part 5 of the COL Application, Supplemental Information, the Emergency Plan—Cross Reference Document, "10 CFR 50 Appendix E Emergency Preparedness Cross Reference," (page 5 of 64), is inconsistent with the HNP Emergency Plan (i.e. Section IV.4.E.9.a references N.2.1.b for site to state/local governments but in the Emergency Plan it is N.2.1.a; IV.4.E.9.b references N.2.1.c for site to Federal emergency response organizations but in the Emergency Plan it is N.2.1.b (to NRC only); Section IV.4.E.9.c references N.2.1.d for communications among the control room, the onsite technical support center (TSC), and emergency operations facility (EOF); and the nuclear facility and principal state and local EOCs and field assessment teams but in the Emergency Plan the two items are referenced separately as N.2.1.c and N.2.1.d) Provide clarification of the cross-references between the HNP Emergency Plan and the Cross Reference Document.

B. Section F.4, "Communications with the Nuclear Regulatory Commission (NRC) and Other Federal Agencies," (page F-4) of the HNP Emergency Plan states that communications with other Federal emergency support organizations is made using commercial telephone lines. Specific Federal emergency response organizations are not listed nor is annual testing mentioned. Provide additional information of HNP interface and communications with Federal emergency response organizations other than the NRC including communication systems testing schedule.

**(SITE-7: Intentionally left blank)**

**SITE-8: Emergency Facilities and Equipment**

Basis: 10 CFR 50.47(b)(8); 10 CFR 50, Appendix E.IV.E.2; 10 CFR 50, Appendix E.IV.E.4; 10 CFR 50, Appendix E.IV.E.8; 10 CFR 50, Appendix E.VI; 10 CFR 50.34(f)(2)(xxv); NUREG-0654/FEMA-REP-1, Evaluation Criterion H

SRP Acceptance Criteria: Requirements A, B and E; Acceptance Criteria 1, 2, 4, 5, and 12

A. Section A.1, "Harris Nuclear Plant," of the HNP Emergency Plan lists monitoring and control of radiation exposures among the emergency related responsibilities of HNP, however, it is not clear who in the Emergency Response Organization (ERO) is responsible for personnel monitoring during the course of the emergency or what resources will be available for personnel monitoring. Provide clarification as to who in the ERO is responsible for personnel monitoring during the course of the emergency and what resources will be available for personnel monitoring.

B. Section H.4, "Emergency Equipment," (page H-5), Section I, "Accident Assessment," (page I-1), Section I.1 "Plant Parameters," (page I-1), Section I.1.1, "Evaluation of Plant Conditions," (page I-1), and Annex 2, Section A2-4, "Plant Monitoring and Data Handling Systems," (page Annex 2-6) of the HNP Emergency Plan define the display of Units 2 & 3 plant parameter information at HNP. The systems described have the functionality of a Safety Parameter Display System (SPDS), however it is not clear if the display system is capable of data trends as well as current and historical data. Specify whether or not each of the various display systems described in Annex A2-4.1 through A2-4.6 is capable of displaying data trends as well as current and historical data.

C. Section H, "Emergency Facilities and Equipment," (page H-1) of the HNP Emergency Plan provides for an onsite Technical Support Center (TSC) for each unit. However, the HNP Emergency Plan does not address transfer of TSC functions in the event that the TSC becomes uninhabitable. Discuss the transfer of TSC function in the event that the TSC should become uninhabitable.

D. Annex 2, Section A2-3.2, "Technical Support Center [TSC]," (page Annex 2-4) of the HNP Emergency Plan states that the TSC is provided with reliable power for habitability systems and with emergency lighting. The plan also states that equipment in the TSC is not safety related and that it is not redundant. In addition, the plan does not address the reliability of the power supplies relative to the TSC function, and does not address reliability of the systems providing data to the TSC. Discuss the reliability of the power supplied to the TSC relative to performance of the TSC function as well as the reliability of the systems supplying data to the TSC.

E. Annex 2, Section A.2-4.4, "Emergency Response Data System (ERDS)," (page Annex 2-7) of the HNP Emergency Plan states that the ERDS transmits critical Units 2 & 3 plant variables to the NRC via a dedicated line. The plan does not provide a list of variables or provide any details related to the communications protocol (i.e., transmission rates, encoding, etc.). Provide a list of variable and any details related to the communications.

F. Section H.1.4, "Emergency Operations Facility (EOF)," (page H-2) of the HNP Emergency Plan states that an EOF is established and is within 10 miles of the site. The characteristics, functions, and emergency equipment and supplies of the EOF are consistent with requirements and guidance except that the area of the EOF and the maximum number of persons in Section H.1.4 a.1 (4800 sq. ft. for 70 people) are inconsistent with the guidance of NUREG-0696 (i.e., 75 sq. ft. per person for 70 people = 5250 sq. ft.). Provide an explanation of the inconsistency of the Harris EOF with the guidance of "75 sq. ft. per person."

G. Section E.1, "Notification of Progress Energy Personnel," (page E-1); Tables E-1 through E-4 (pages E-5 to 8); and Section H.2, "Activation and Staffing," (page H-4) of the HNP Emergency Plan provide for timely activation and staffing of emergency facilities and centers. Provide a description of the process for the activation and staffing of the facilities and centers described in the HNP Emergency Plan.

H. Section I.5, "Seismic and Hydrological Data," (page I-3) and Section I.6, "Meteorological Instrumentation," (page I-3) of the HNP Emergency Plan cover access to seismic and meteorological data. Section H.3.3, "Laboratory Facilities," (page H-4) of the HNP Emergency Plan covers offsite emergency laboratory facilities. However, sources of radiological monitoring equipment and how site meteorological data would be processed to be representative of conditions at the site are not described. a) Describe sources of radiological monitoring equipment that would be available should the plant radiological monitoring equipment be inoperable or unavailable and b) Discuss how site meteorological data would be processed to be representative of conditions at the site.

I. Section H.3.1, "Meteorological Instrumentation," (page H-4) and Section I.6, "Meteorological Instrumentation," (page I-3) of the HNP Emergency Plan discuss meteorological instrumentation. More detailed information about the system is included in the Final Safety Analysis Report (FSAR), Section 2.3.3, "On-Site Meteorological Measurements Program," (page 2.3-1). Section H.3.1 covers distribution of the meteorological data, and Section I.6 covers acquisition of meteorological data from offsite sources. There is no mention of or reference to procedures related to obtaining and processing meteorological data from backup sources. Describe the process and discuss whether procedures exist related to obtaining and processing meteorological data from backup sources and, if so, describe, in general terms, the contents of the procedures.

J. Section H.1.3, "Operations Support Centers (OSC)," (page H-2) of the HNP Emergency Plan establishes an OSC for each unit. Table H-1, "Typical Emergency Supplies Available For Emergency Facilities," (page H-6) of the HNP Emergency Plan lists a typical emergency equipment supplies for an OSC. Appendix 4, "List of Emergency Plan Supportive Documents," listed implementing procedures, however the procedures were not available for review. Provide a description of the process for establishing and maintaining emergency equipment inventory, including operational checks and availability of replacement equipment.

13.03-65

**SITE-9: Plant Systems and Instrumentation (Accident Assessment)**

Basis: 10 CFR 50.47(b)(9); 10 CFR 50, Appendix E.IV.B; 10 CFR 50.34(f)(2)(xvii); NUREG-0654/FEMA-REP-1, Evaluation Criterion I; Supplement 1 to NUREG-0737, Section 6.1.b. - Control Room; Post-Accident Sampling Capability  
SRP Acceptance Criteria: Requirements A and B; Acceptance Criteria 1, 2, 4, 5, 25, 28

A. Section I.3, "Radiological Monitoring," (page I-2) of the HNP Emergency Plan states that a computer program based on technical information in NUREG-1741 is relied upon for assessing the offsite consequences of a release. The computer program, which can use default or actual information on source terms and meteorological conditions, has the attributes of both Class A and Class B meteorological models discussed in NUREG-0654, Appendix 2. However, the technical information related to source terms contained in NUREG-1741 is only for current generation reactors; it does not cover AP1000 reactors. Further, the HNP Emergency Plan does not address backup methods for

assessing offsite consequences should the computer program not be available. a) Describe, in general terms, what modifications, if any, are required to make the technical bases in NUREG-1741 applicable to consequence assessments for the AP1000 and b) describe, in general terms, how HNP would assess offsite consequences of a release of radioactive material should the dose assessment computer program not be available.

A.1 – Section I.4 “Dose Projections,” (page I-2) of the HNP Emergency Plan indicates that the applicant relies upon a dose projection computer program for establishing the relationship between monitor readings and onsite and offsite exposures as a function of meteorological conditions. There is no mention of a backup methodology. a) Describe, in general terms, methods that would be used to estimate onsite and offsite exposures and contamination from monitoring readings accounting for current meteorological conditions and b) Identify where these methods are described in procedures, and c) Discuss what training the dose assessment staff has in use of these methods.

B. Section I.1.1 “Evaluation of Plant Conditions,” (page I-1) of the HNP Emergency Plan applies to the HNP Unit 1 but not Units 2 and 3. There is no HNP Emergency Plan section corresponding to Section I.1.1 that applies to Units 2 and 3. Section 7.5, “Safety-Related Display Information,” (page 7.5-2 to 4) of the Design Control Document (DCD) discusses type A through E variables for the AP1000 in detail, however, the DCD is referenced in the Final Safety Analysis Report (FSAR) but not in the HNP Emergency Plan. Provide a discussion of the instrumentation to measure and record key plant parameters and to display the information in the control rooms for Units 2 and 3.

C – Section I.6, “Meteorological Instrumentation,” (page I-3) of the HNP Emergency Plan states that in the event of unavailability of data from the HNP meteorological system, the primary source of meteorological data for the site is from a meteorological contractor who will provide representative data for the site based on their evaluation of data received from the National Weather Service and other sources of information. This section also states that meteorological data are available directly from the National Weather Service should information not be available from the meteorological contractor. The HNP Emergency Plan does not identify procedures for contacting the meteorological contractor or the National Weather Service, or for processing data that is received from the National Weather Service. a) Describe procedures for obtaining meteorological data from the meteorological contractor and the National Weather Service and for processing data obtained from the National Weather Service and b) If such procedures exist, identify specifically where they may be found.

C.1 – Section H.3.1, “Meteorological Instrumentation,” (page H-4) and Section I-6, “Meteorological Instrumentation,” (page I.3) of the HNP Emergency Plan describes, in general, the HNP meteorological system and in detail in Section 2.3.3, “On-Site Meteorological Measurements Program,” (page 2.3-25) of the Final Safety Analysis Report (FSAR). The HNP Emergency Plan does not contain a reference to any procedure for obtaining the meteorological data from offsite sources. Describe the procedure for obtaining meteorological data from offsite sources. If such a procedure exists, identify its location.

D. Section I.8, “Environmental Monitoring,” (page I-4) of the HNP Emergency Plan refers to “appropriate implementing procedures,” however, implementing procedures are neither identified in Appendix 4, “List of Emergency Plan Supportive Documents,” nor are they described, even in a general sense, in Section 1.8. Describe procedures specifically related to field monitoring within the plume exposure emergency planning zone (EPZ). If such procedures exist, identify where they may be found.

E. Section B, “Onsite Emergency Organization,” Table B-1, “Minimum Staffing Requirements for Emergencies,” (pages B-15, 16) of the HNP Emergency Plan provides for field monitoring teams however the number of teams is not clear. Clarify the actual number of field teams responding within

the 30 to 45 minutes time frame and the 60 to 75 minutes time frame after activation of the Emergency Operations Facility.

F. Section I.7.1, "Field Monitoring Equipment," (page I-4) of the HNP Emergency Plan specifically addresses the capability to detect and measure radioiodine concentrations in air in the plume exposure emergency planning zone (EPZ). The HNP Emergency Plan states that field monitoring equipment meets this criterion with respect to detection limits. However, the HNP Emergency Plan does not address the interference issue. Confirm that the iodine detection limits stated in the HNP Emergency Plan are not affected by interference from noble gases and background radiation.

13.03-66

**SITE-10: Evacuation Provisions and Actions (Protective Response)**

Basis: 10 CFR 50.47(b)(10); NUREG-0654/FEMA-REP-1, Evaluation Criterion J.2, Evaluation Criterion J.5, Evaluation Criterion J.6, Evaluation Criterion J.7, Evaluation Criterion J.10.m; RIS 2003-12, "A Clarification of NRC Guidance for Modifying Protective Actions"

"SRP Acceptance Criteria: Requirement A; Acceptance Criterion 1

A. Section J.1.2, "Evacuation and Personnel Accountability," (page J-1) of the Harris Nuclear Plant (HNP) Emergency Plan covers evacuation and accountability of onsite personnel. It references unspecified emergency procedures. Provide references to specific portions of plans and procedures that address evacuation of onsite personnel.

A.1 Section J.1.2, "Evacuation and Personnel Accountability," (page J-2) of the HNP Emergency Plan addresses accountability of onsite personnel. Procedures for establishing accountability are referred to, but specific procedures are not identified. Identify specific procedures and portions thereof that address accountability.

B. Table H-1, "Typical Emergency Supplies Available For Emergency Facilities," (page H-6) and Section K.3, "Use of Protective Equipment and Supplies," (page K-2) of the HNP Emergency Plan addresses protective equipment and supplies. Issuance of protective clothing and respirators is covered by plant radiological protection procedures, and that administration of radioprotective drugs is covered by plant emergency procedures, however procedures were not available for review. Provide references to specific portions of procedures that address use of protective clothing, respirators, and radioprotective drugs for onsite personnel.

C. Section J.2.2, "Protective Action Guides," (page J-3), Section J.2.3, "Protective Action Recommendations (PARS)," (page J-5) and Section J.2.4, "Ingestion Pathway Protective Measures," (page J-5) of the HNP Emergency Plan discuss the HNP role in recommending Protective Action Recommendations (PARs). The HNP Emergency Plan identifies the individuals, by position, authorized to release PARs, but it does not mention either procedures to be followed in developing PARs or a time frame for notification of offsite authorities after a PAR decision is made. a) Provide references to specific portions of procedures that address development of PARs and b) Describe the requirement related to the time period between a PAR decision and notification of the offsite authorities of the PAR.

C.1 – Section J.2.2, "Protective Action Guides," (page J-3), Section J.2.3, "Protective Action Recommendations (PARS)," (page J-5), and Section J.2.4, "Ingestion Pathway Protective Measures," (page J-5) of the HNP Emergency Plan discuss the HNP role in recommending Protective Action Recommendations (PARs). Section J.2.2 states that HNP staff normally do not have the information needed to determine whether offsite conditions would require sheltering instead of evacuation,

therefore, that is usually performed by the offsite authorities. The guidance in Supplement 3 to NUREG-0654/FEMA-REP-1, "Criteria for Protective Action Recommendations for Severe Accidents," indicates that plant operators should recommend evacuation of areas close to the plant unless other conditions make evacuation dangerous. Generally onsite staff have some knowledge of offsite conditions and should not recommend protective actions that are inconsistent with that knowledge. Discuss how the protective action strategy for Harris takes into consideration situations with known offsite hazardous conditions.

C.2 - Section J.2.3 states that HNP PARs are based on plant conditions, projected doses and dose rates, and field monitoring data, and possible General Emergency PARs include evacuation, sheltering, and consideration of the use of potassium iodide (KI). These HNP Emergency Plan sections do not refer to any procedures that provide specific criteria to be considered in making the PARs. Provide references to specific portions of procedures that address development of PARs.

D. The HNP Emergency Plan does not address relaxation or extension of issued Protective Action Recommendations (PARs). Identify specific procedures that address relaxation or extension of PARs that have been issued.

13.03-67

**SITE-11: Contamination Control and Dose Limits (Radiological Exposure Control)**

Basis: 10 CFR 50.47(b)(11); NUREG-0654/FEMA-REP-1, Evaluation Criterion K.1, Evaluation Criterion K.2, Evaluation Criterion K.3, Evaluation Criterion K.5, Evaluation Criterion K.6, Evaluation Criterion K.7

SRP Acceptance Criteria: Requirement A; Acceptance Criterion 1

A. Section K.1.e, "Emergency Exposures," (page K-2) of the Harris Nuclear Plant (HNP) Emergency Plan states that implementing procedures are used for selecting and controlling personnel receiving emergency related exposure however the procedures were not available for review. Provide a summary of HNP's process for permitting onsite volunteers to receive radiation exposures in the course of carrying out lifesaving and other emergency activities and for defining expeditious decision making and reasonable consideration of relative risks.

B. Section K.4, "Decontamination and First Aid," (pages K-2, 3) of the HNP Emergency Plan states that decontamination of personnel is described in plant procedures however procedures were not available for review. Provide an explanation of the process of personnel decontamination, including exposure/contamination limits for injured workers.

B.1 Section K.4, "Decontamination and First Aid," (pages K-2, 3) of the HNP Emergency Plan states that decontamination of personnel, equipment and areas are described in plant procedures however procedures were not available for review. Provide a summary of HNP processes for radiological decontamination of personnel wounds, supplies, instruments and equipment and the disposal of radwaste.

B.2 Section K.4, "Decontamination and First Aid," (page K-3) of the HNP Emergency Plan states that contamination control criteria for returning areas and items to normal use are contained in plant Health Physics procedures however the procedures were not available for review. Provide a summary of the process for permitting return of areas and items to normal use.

C. Section K.2, "Exposure Records for Emergency Workers," (page K-2) of the HNP Emergency Plan identifies that the Harris Energy and Environmental Center (HE&EC) has thermoluminescent dosimeter (TLD) reading capabilities and has 24-hour staffing capability, however contingency arrangements are not identified for alternative dosimeter processing. Provide information on HNP's contingency arrangements for 24-hour TLD readout capabilities and on the provisions for distribution of dosimeters, both self-reading and permanent record devices.

C.1 Section K.2, "Exposure Records for Emergency Workers," (page K-2) of the HNP Emergency Plan does not identify the dosimeter read-out frequency and states that dose records are maintained by the Radiological Control Coordinator in accordance with plant emergency procedures, however the procedures were not available for review. Provide information on dosimeter read-out frequencies and a summary of how dose records are maintained for emergency workers involved in any nuclear accident, including contingency arrangements for alternative dose record access and processing should normal access not be available.

D. Section K.6, "Radiological and Contamination Control Facilities," (page K-3) of the HNP Emergency Plan identifies temporary facilities, expanding radiation control areas and/or establishing access control points to limit contamination and exposure, however how access control is achieved is not described. Explain how area access control measures are implemented.

E. Section K.6, "Contamination Control of Drinking Water and Food," (page K-3) of the HNP Emergency Plan states that if drinking water or food is found to be contaminated, uncontaminated water and food will be brought onsite for personnel. However, there is no explanation of how uncontaminated food and water would be obtained or brought to the site. Explain how uncontaminated food and water will be obtained and brought to the site.

F. Section K.3, "Use of Protective Equipment and Supplies," (page K-2) of the HNP Emergency Plan identifies potassium iodide and administration of radioprotective drugs as described in plant emergency procedures for onsite personnel, however the procedures were not available for review. Provide additional information on the HNP process of relocation of onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.

13.03-68

**SITE-12:** Medical Services for Harris Nuclear Plant Workers and Contaminated Injured Individuals (Medical and Public Health Support)

Basis: 10 CFR 50.47(b)(12); NUREG-0654/FEMA-REP-1, Evaluation Criterion L.1, Evaluation Criterion L. 2

SRP Acceptance Criteria: Requirement A; Acceptance Criterion 1

A. Appendix 3, "Letters of Agreement," (page Appendix 3-1) of the Harris Nuclear Plant (HNP) Emergency Plan includes agreements with the medical services providers, however three organizations were listed in the text but no agreement letters were listed. Provide the letters of agreement or explain why the letters of agreement are not needed.

13.03-69

**SITE-13: Recovery and Reentry Actions**

Basis: 10 CFR 50.47(b)(13); NUREG-0654/FEMA-REP-1, Evaluation Criterion M.1, Evaluation Criterion M.4

SRP Acceptance Criteria: Requirement A; Acceptance Criterion 1

A. Section M.5, "Re-Entry Planning," (page M-6) of the Harris Nuclear Plant (HNP) Emergency Plan states that plans and procedures for re-entry are developed at the time of the recovery phase considering radiation survey data, exposure records of personnel involved in the recovery phase, sampling and survey instruments, personnel protection need, communications, and re-entry team briefings, however there is no discussion related to relaxing protective measures. Describe the means and process by which decisions to relax protective measures (e.g., allow reentry into an evacuated area) are reached.

B. Section M.6, "Total Population Exposure Estimates," (pages M-6, 7) of the HNP Emergency Plan states that total population exposure will be periodically determined through procedures including; examination of prepositioned thermoluminescent dosimeters (TLDs), bioassay, release rates and meteorology, and environmental monitoring of food, water and ambient dose rates, however the procedures were not available for review. Provide a summary of the method used for estimating population exposure.

13.03-70

**SITE-14: Drill and Exercise Evaluation and Critiques**

Basis: 10 CFR 50.47(b)(14); 10 CFR 50, Appendix E.IV.F.2.e, Appendix E.IV.F.2.f, Appendix E.IV.F.2.g; NUREG-0654/FEMA-REP-1, Evaluation Criterion N.1, Evaluation Criterion N.2, Evaluation Criterion N.3, Evaluation Criterion N.4, Evaluation Criterion N.5

SRP Acceptance Criteria: Requirements A and B; Acceptance Criteria 1 and 2

A. Section N.1, "Exercises," (pages N-1, 2) of the Harris Nuclear Plant (HNP) Emergency Plan states that the HNP Emergency Planning Coordinator determines critique items requiring corrective actions and that site administrative controls are used to ensure corrective actions are implemented, however there is no discussion on the process used for determining what constitutes a corrective action or how the site administrative controls ensure implementation of corrective actions. Provide a summary of the HNP drill and exercise critique evaluation process including a discussion of corrective actions and how deficiencies are identified and corrected.

B. Section N.2.6, "Integrated Drills," (page N-3) of the HNP Emergency Plan states the degree of participation by outside agencies may vary or be simulated however there is no mention of how HNP would handle any State of local government request to participate in the licensee's drill. Provide additional information regarding how HNP responds to requests for participation in their drills from the States or local governments within the plume exposure Emergency Planning Zone (EPZ).

C. Section N, "Exercises and Drills," (pages N-1 to 3) of the HNP Emergency Plan does not address remedial exercises. Provide additional information regarding HNP actions resulting from an unsatisfactory test of the biennial exercise.

D. FSAR Table 13.4-201, "Operational Programs Required by NRC Regulations," Operational Program 14, Emergency Planning (page FSAR 13.4-5), indicates that a full participation exercise will be conducted within two years of the scheduled date for initial loading of fuel in accordance with 10 CFR Part 50, Appendix E, Section IV.F.2.a(ii). While this section of the emergency planning rules addresses the conduct of a full participation exercise for a combined license, Section IV.F.2.a(iii) addresses the conduct of a full participation exercise for a combined license for a site with an operating reactor. Please discuss the applicability of Section IV.F.2a(iii) to the Harris site and how this would affect the conduct of the onsite exercise within one year before the scheduled date for initial loading of fuel.

13.03-71

**SITE-15:** Training Program for Emergency Responders, Instructors and Directors and Coordinators (Radiological Emergency Response Training)

Basis: 10 CFR 50.47(b)(15); 10 CFR 50, Appendix E.IV. F.1, Appendix E.IV. F.2; NUREG-0654/FEMA-REP-1, Evaluation Criterion O.1; Evaluation Criterion O.2; Evaluation Criterion O.4

SRP Acceptance Criteria: Requirement A; Acceptance Criteria 1 and 2

A. Section O.3, "Offsite Organizations," (page O-2) of the HNP Emergency Plan identifies offsite organizations receiving radiation training however the local news media was not specifically identified. Explain the radiological orientation training program made available to the local news media.

13.03-72

**SITE-16:** Evaluation Against the SRP

Basis: 10 CFR 52.79(a)(41) and 10 CFR 50.34(h)

SRP Acceptance Criteria: Requirement A; Acceptance Criteria 1 and 11

Table 1.9-202, "Conformance with SRP Acceptance Criteria," in Part 2 of the COL Application indicates that the Section 13.3, "Emergency Planning," is acceptable from a design certification perspective. However, the SRP Acceptance Criteria related to Emergency Planning in Section 13.3 of the NUREG-0800, Standard Review Plan," (SRP) were not evaluated against the content of Part 5, "Emergency Plan," of the COL Application. Identify all differences between the HNP Emergency Plan and SRP Chapter 13.3, "Emergency Planning." Where differences exist, discuss how the proposed alternative provides an acceptable method of complying with applicable regulations, or portions of the regulations.

13.03-73

**SITE-17:** COL Information Items

Basis: 10 CFR 50.47 and Appendix E to 10 CFR Part 50

SRP Acceptance Criteria: Requirements A and B; Acceptance Criteria 1 and 2

A. COL Action Item 13.3-1 in NUREG-1793, "Final Safety Evaluation Report Relating to Certification of the AP1000 Standard Design," states in part that the COL applicants that reference the AP1000 certified design will address communication interfaces associated with the TSC. Explain why this aspect of the COL Action Item was not captured in STD COL 13.3-1.

B. COL Action Item 13.3.3.3.5-1 in NUREG-1793, "Final Safety Evaluation Report Relating to Certification of the AP1000 Standard Design," states: "Combined license applicants referencing the

AP1000 certified design will address activation of the emergency operations facility consistent with current operating practice and NUREG-0654/FEMA-REP-1." Section 13.3, "Emergency Planning," of Part 2 of the FSAR states in STD COL 13.3-2 states: "The emergency plan describes the plans for coping with emergency situations, including communication interfaces and staffing of the emergency operations facility." Discuss the relationship between the two Information Items. For example, while COL Action Item 13.3.3.3.5-1 addresses activation of the emergency operations facility, STD COL 13.3-2 addresses staffing and communication interfaces of the emergency operations facility.

13.03-74

**SITE-18: Response to Hostile Actions**

Regulatory Basis: NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," issued July 18, 2005

A. Part 5, "Emergency Planning," Supplemental Information, "Part 5 Emergency Plan- Cross Reference Document," (p. 60 of 64) is titled "Part 13, NRC Bulletin 2005-04." Please confirm that the correct reference is to NRC Bulletin 2005-02.

B. In the Bellefonte Emergency Plan, the Reference COLA for the Harris Nuclear Plant, in Section J.6, "Protective Measures," it states (on p. II-46) that:

In the event of a hostile attack against the site, conditions may dictate initiation Of protective measures other than personnel assembly, accountability and evacuation. The SED makes decisions regarding appropriate protective measures based on evaluation of site conditions, including input from the security force. If based on the judgment of the SED, personnel assembly, accountability, and evacuation may result in undue hazards to site personnel, the SED may direct other protective measures, including:

- Evacuation of personnel from areas and buildings perceived as high- value targets
- Site evacuation by opening, while continuing to defend, security gates
- Dispersal of key personnel
- On-site sheltering
- Staging of ERO personnel in alternate locations pending restoration of safe conditions
- Implementation of accountability measures following restoration of safe conditions

Discuss whether these or similar actions are appropriate for Harris Units 2 and 3 and should be included in the emergency plan.

13.03-75

**ITAAC-19: ITAAC**

Regulatory Basis: 10 CFR 52.80(a)

SRP Acceptance Criteria: Requirement E; Acceptance Criterion 23

A. Some EP ITAAC will be completed for Unit 2 before those for Unit 3. To allow closure of the common ITAAC for both units when Unit 2 is constructed, was the development of separate ITAAC tables for each unit considered so that the common ITAAC would not need to stay open until Unit 3 is constructed?

B. Table 3.8-1, "Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10 of the COL Application, the acceptance criteria are prefaced either with the phrase, "Test records demonstrate ..." or "Report exists and concludes ..." The goal of ITAAC Acceptance Criteria is to be objective criteria that can be demonstrated to have been met prior to fuel load. The Acceptance Criteria must be specific and sufficiently objective, in order to clearly identify what the requirements are, and to provide the ability to determine whether they have been met. In RIS 2008-05, "Lessons Learned to Improve Inspections, Tests, Analyses, and Acceptance Criteria Submittal," February 27, 2008, the following guidance is provided in regard to the use of such a phrase:

If applicants use the phrase, "a report exists and concludes that ...," they should consider specifying the scope and the type of report. For example, they should explain whether the scope of the report includes the design, the as-built construction (as reconciled with the design), or any other information.

The use of phrases "test records demonstrate" or "a report exists that confirms" in the Acceptance Criteria does not clearly describe how verification is actually conducted to confirm that the acceptance criteria are met. An area that might be appropriate for using a report to confirm that various ITAAC have been met is Planning Standard 8.0, "Exercises and Drills," for which an Exercise Report could serve to verify that various exercise-related ITAAC (e.g., exercise objectives) have been met.

Consistent with RIS 2008-05, discuss the type and scope of the reports cited in ITAAC Table 3.8-1, including how the report will serve to provide accurate and reliable confirmation that the Acceptance Criteria have been met, or consider removing the words "test records demonstrate" or "a report exists that confirms" from the Table, to create specific and sufficiently objective Acceptance Criteria. The removal of the reference to future reports will provide for objective ITAAC Acceptance Criteria, and leave open the specific method(s) that the licensee will use to confirm that the ITAAC acceptance criteria have been met.

C. Table 3.8-1, "Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10, "Proposed Combined License Conditions (Including ITAAC)," of the COL Application provides three separate acceptance criteria for planning standard 8.0, "Exercises and Drills." Address the following questions pertaining to the full-participation exercise, and the applicable guidance provided in Regulatory Guide (RG) 1.206, Appendix B, Table C.II.1-B1, "Emergency Planning – Generic Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)."

- C.1 Table C.II.1-B1, acceptance criterion 14.1.2, includes the bracketed statement that "[t]he COL applicant will identify responsibilities and associated acceptance criteria." Explain why Table 3.8-1, acceptance criterion 8.1.2, does not identify any responsibilities and associated acceptance criteria, in relation to onsite emergency response personnel successfully performing their assigned responsibilities. Either provide the appropriate acceptance criterion, or explain why it is not required.
- C.2 Table C.II.1-B1, acceptance criterion 14.1.1, includes the bracketed statement that "[t]he COL applicant will identify exercise objectives and associated acceptance criteria." Table 3.8-1 acceptance criterion 8.1.1 states that exercise objectives have been met for each of the listed emergency planning program elements. However, Table 3.8-1 does not identify (in the acceptance criteria) what the associated acceptance criteria are (as called for in Table C.II.1-B1). The goal of ITAAC acceptance criteria is to be objective criteria that can be demonstrated to have been 'met' prior to fuel load. The acceptance criteria must be specific and sufficiently objective, in order to clearly identify what the requirements are, and to provide the ability to determine whether they have been met. As written, the acceptance criterion 8.1.1 does not

provide such clear and objective criteria. For the full participation exercise acceptance criteria in Table 3.8-1, provide specific exercise objectives and associated acceptance criteria, consistent with Table C.II.1-B1. Either provide the appropriate acceptance criterion, or explain why it is not required.

D. EP Program Element 3.2 of Table 3.8.1, "Inspections, Tests, Analyses, and Acceptance Criteria," states that the means exists for communications from the control room, TSC, and EOF to NRC Headquarters and regional office EOCs (including establishment of the Emergency Response Data System (ERDS) between the onsite computer system and the NRC Operations Center. The "Inspection, Tests, and Analysis" for the EP Program Element is a note that states that the ITAAC for these communications systems are addressed in Table 3.1-1, "Inspections, Tests, Analyses, and Acceptance Criteria," of the Tier 1 Material in the AP1000 Design Control Document, Rev.16. However, ITAAC number 2 in Table 3.1-1, "Inspections, Tests, Analyses, and Acceptance Criteria," states that the TSC has voice communication equipment for communication with the control room, EOF, OSC, and NRC. Provide additional details regarding the establishment of communications with the regional NRC EOC and ERDS between the onsite computer and the NRC Operations Center.

E. Table C.II.1-B1, " Emergency Planning-Generic Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)," in Appendix C.II.1-B, "Development Guidance for Emergency Planning ITAAC," to RG 1.206 contains the generic EP-ITAAC table. The table lists 17 Planning Standards and the accompanying EP Program Elements, Inspection, Tests, Analysis, and Acceptance Criteria. The COL application EP-ITAAC does not address eight of the generic ITAAC Planning Standards. The following generic ITAAC Planning Standards are not addressed:

1. Assignment of Responsibility-Organizational Control--10 CFR 50.47(b)(1) An inspection of the implementing procedures or staffing rosters will be performed.
2. Onsite Emergency Organization--10 CFR 50.47(b)(2) An inspection of the implementing procedures or staffing rosters will be performed.
3. Emergency Response Support and Resources--10 CFR 50.47(b)(3) Provide letters of agreement or other documentation that demonstrates arrangement have been made for requesting and effectively using assistance resources, arrangements to accommodate local and state 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.
4. Radiological Exposure Control--10 CFR 50.47(b)(11) A test will be performed of the capabilities
5. Medical and Public Health--10 CFR 50.47(b)(12) A test will be performed of the capabilities
6. Recovery an Reentry Planning and Post Accident Operations --10 CFR 50.47(b)(13) A report exists that confirms the Recovery and Reentry and Post Accident Operations plans have been demonstrated.
7. Radiological Emergency Response Training--10 CFR 50.47(b)(15) An inspection will be performed to verify the emergency response training program meets the applicable standards for those who may be called upon to assist in an emergency and that procedures for the conduct and evaluation of the training program exist and records of training offered and conducted exists.

8. Responsibility for Planning Effort: Development, Periodic Reviews, and Distribution of Emergency Plan --10 CFR 50.47(b)(16) An inspection of the Emergency Plan distribution will be performed to insure all agencies identified in the Emergency Plan have been provided a copy of the final, approved plan and any subsequent revisions, changes, supplements, or amendments.

Discuss why ITAAC were not developed for the above Planning Standards, or propose an ITAAC.