Progress Energy

Serial: NPD-NRC-2009-066
April 6, 2009

10CFR52.79

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

SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3
DOCKET NOS. 52-022 AND 52-023
SUPPLEMENT 2 TO RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 021 RELATED TO EMERGENCY PLANNING

References: Letter from Brian C. Anderson (NRC) to James Scarola (PEC), dated September 26, 2008, "Request for Additional Information Letter No. 021 Related to SRP Section 13.3 for the Shearon Harris Units 2 and 3 Combined License Application"

Letter from Garry D. Miller (PEC) to U.S. Nuclear Regulatory Commission (NRC), dated November 17, 2008, "Response to Request for Additional Information Letter No. 021 Related to Emergency Planning", Serial: NPD-NRC-2008-052

Letter from Garry D. Miller (PEC) to U.S. Nuclear Regulatory Commission (NRC), dated January 8, 2009, "Supplement 1 to Response to Request for Additional Information Letter No. 021 Related to Emergency Planning", Serial: NPD-NRC-2009-003

Ladies and Gentlemen:

Progress Energy Carolinas, Inc. (PEC) hereby submits a supplemental response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter. This supplemental response provides further information for question 13.03-21.

The response is provided in Enclosure 1. Enclosure 1 also identifies changes that will be made in a future revision of the Shearon Harris Nuclear Power Plant Units 2 and 3 (HAR) application.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (919) 546-6107.

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

Executed on April 6, 2009.

Sincerely,

Garry D. Miller
General Manager
Nuclear Plant Development

Progress Energy Carolinas, Inc.
P.O. Box 1551
Raleigh, NC 27602

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NRO

Enclosures/Attachment

cc: U.S. NRC Director, Office of New Reactors/NRLPO
U.S. NRC Office of Nuclear Reactor Regulation/NRLPO
U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SHNPP Unit 1
Mr. Manny Comar, U.S. NRC Project Manager

Shearon Harris Nuclear Power Plant Units 2 and 3
Supplement 2 to Response to NRC Request for Additional Information Letter No. 021
Related to SRP Section 13.3 for the Combined License Application,
dated September 26, 2008

NRC RAI #	Progress Energy RAI #	Progress Energy Response
13.03-1	H-0074 H-0400	November 17, 2008; Serial NPD-NRC-2008-052; January 8, 2009; Serial NPD-NRC-2009-003
13.03-2	H-0171	November 17, 2008; Serial NPD-NRC-2008-052
13.03-3	H-0172	November 17, 2008; Serial NPD-NRC-2008-052
13.03-4	H-0173	November 17, 2008; Serial NPD-NRC-2008-052
13.03-5	H-0174	November 17, 2008; Serial NPD-NRC-2008-052
13.03-6	H-0175	November 17, 2008; Serial NPD-NRC-2008-052
13.03-7	H-0176	November 17, 2008; Serial NPD-NRC-2008-052
13.03-8	H-0177	November 17, 2008; Serial NPD-NRC-2008-052
13.03-9	H-0178 H-0401 & H-0402	November 17, 2008; Serial NPD-NRC-2008-052; January 8, 2009; Serial NPD-NRC-2009-003
13.03-10	H-0179	November 17, 2008; Serial NPD-NRC-2008-052
13.03-11	H-0180	November 17, 2008; Serial NPD-NRC-2008-052
13.03-12	H-0181	November 17, 2008; Serial NPD-NRC-2008-052
13.03-13	H-0182	November 17, 2008; Serial NPD-NRC-2008-052
13.03-14	H-0183	November 17, 2008; Serial NPD-NRC-2008-052
13.03-15	H-0184 H-0404	November 17, 2008; Serial NPD-NRC-2008-052; January 8, 2009; Serial NPD-NRC-2009-003
13.03-16	H-0185	November 17, 2008; Serial NPD-NRC-2008-052
13.03-17	H-0186 H-0405	November 17, 2008; Serial NPD-NRC-2008-052; January 8, 2009; Serial NPD-NRC-2009-003
13.03-18	H-0187	November 17, 2008; Serial NPD-NRC-2008-052
13.03-19	H-0188	November 17, 2008; Serial NPD-NRC-2008-052
13.03-20	H-0189	November 17, 2008; Serial NPD-NRC-2008-052
13.03-21	H-0190 H-0423	November 17, 2008; Serial NPD-NRC-2008-052; Revised response enclosed; see following pages
13.03-22	H-0191	November 17, 2008; Serial NPD-NRC-2008-052
13.03-23	H-0192	November 17, 2008; Serial NPD-NRC-2008-052
13.03-24	H-0193	November 17, 2008; Serial NPD-NRC-2008-052
13.03-25	H-0194	November 17, 2008; Serial NPD-NRC-2008-052
13.03-26	H-0195	November 17, 2008; Serial NPD-NRC-2008-052
13.03-27	H-0196	November 17, 2008; Serial NPD-NRC-2008-052
13.03-28	H-0197	November 17, 2008; Serial NPD-NRC-2008-052
13.03-29	H-0198	November 17, 2008; Serial NPD-NRC-2008-052

NRC RAI #	Progress Energy RAI #	Progress Energy Response
13.03-30	H-0199	November 17, 2008; Serial NPD-NRC-2008-052
13.03-31	H-0200	November 17, 2008; Serial NPD-NRC-2008-052
13.03-32	H-0201	November 17, 2008; Serial NPD-NRC-2008-052
13.03-33	H-0202	November 17, 2008; Serial NPD-NRC-2008-052
13.03-34	H-0203	November 17, 2008; Serial NPD-NRC-2008-052
13.03-35	H-0204	November 17, 2008; Serial NPD-NRC-2008-052
13.03-36	H-0205	November 17, 2008; Serial NPD-NRC-2008-052
13.03-37	H-0206	November 17, 2008; Serial NPD-NRC-2008-052
13.03-38	H-0207	November 17, 2008; Serial NPD-NRC-2008-052
13.03-39	H-0208	November 17, 2008; Serial NPD-NRC-2008-052
13.03-40	H-0209	November 17, 2008; Serial NPD-NRC-2008-052
13.03-41	H-0210	November 17, 2008; Serial NPD-NRC-2008-052
13.03-42	H-0211	November 17, 2008; Serial NPD-NRC-2008-052
13.03-43	H-0212	November 17, 2008; Serial NPD-NRC-2008-052
13.03-44	H-0213	November 17, 2008; Serial NPD-NRC-2008-052
13.03-45	H-0214	November 17, 2008; Serial NPD-NRC-2008-052
13.03-46	H-0215	November 17, 2008; Serial NPD-NRC-2008-052
13.03-47	H-0216	November 17, 2008; Serial NPD-NRC-2008-052
13.03-48	H-0217	November 17, 2008; Serial NPD-NRC-2008-052
13.03-49	H-0218	November 17, 2008; Serial NPD-NRC-2008-052
13.03-50	H-0219	November 17, 2008; Serial NPD-NRC-2008-052
13.03-51	H-0220	November 17, 2008; Serial NPD-NRC-2008-052
13.03-52	H-0221	November 17, 2008; Serial NPD-NRC-2008-052
13.03-53	H-0222	November 17, 2008; Serial NPD-NRC-2008-052
13.03-54	H-0223	November 17, 2008; Serial NPD-NRC-2008-052
13.03-55	H-0224	November 17, 2008; Serial NPD-NRC-2008-052
13.03-56	H-0225	November 17, 2008; Serial NPD-NRC-2008-052
13.03-57	H-0226	November 17, 2008; Serial NPD-NRC-2008-052

NRC Letter No.: HAR-RAI-LTR-021

NRC Letter Date: September 26, 2008

NRC Review of Evacuation Time Estimate Report

NRC RAI #: 13.03-21

Text of NRC RAI:

Clarify Section 2.2, Study Methodological Assumptions, Assumption 6, that indicates that there are no peak tourist events that should be considered. Peak Fest, which is held every May in Apex, North Carolina, has an annual attendance of as many as 25,000 people.

a. Discuss why there are no special events listed and why peak tourist populations are not included in the transient population estimates in Section 3.

b. Explain what resources were used to determine the special events.

c. Identify the effect on the ETE of the peak tourist volume listed here, or other events that might be identified through research that may have greater peak tourist volumes.

d. Clarify Section 2.2, Assumption 6. Discuss why there are no special events listed and why peak tourist populations are not included.

PGN RAI ID#: H-0423

PGN Response to NRC RAI

a. Assumption 6 of Section 2.2 (Page 2-2) of the ETE report identifies the new plant construction as a special event (Scenario 12). Potential special events were discussed with the counties during the project kickoff meeting. It was decided that the construction scenario would be appropriately designated as a special event as it would span several years and would involve a large influx of non-EPZ residents.

Peak transient populations are included in the ETE, as discussed on Pages 3-8 through 3-10 of the ETE report. Phone calls were placed to recreational areas along Harris and Jordan Lakes to gather data on peak transient population. People staying at lodging facilities within the EPZ were also considered in the determination of the peak transient population. Appendix E provides a summary of the peak transient population, including a map of the recreational areas within the EPZ.

b. As discussed above, potential special events were discussed with the EPZ counties at the project kickoff meeting. Besides the new plant construction, events at the Booth Amphitheater in Cary were mentioned; however, this scenario was not considered as the facility is not in the EPZ.

c. Peak Fest in Apex is held each year on a Saturday in May from 9:00 a.m. to 5:00 p.m. (The 2008 event was on May 3rd). Salem Street is closed to vehicle traffic between Center St and NC Hwy 55. Based on data provided during a telephone conversation with a representative from the

Festival commission, Salem Street is closed from 8:00 a.m. to 6:00 p.m. to allow for setup and cleanup. There are police officers stationed at each street corner to divert traffic away from the festival area. On average, 15,000 to 20,000 people attend. Approximately half of the people travel more than 10 miles to attend the event; therefore it is assumed that 50% of the attendees or 10,000 people are transients. We estimate 4,000 additional transient vehicles for those attending the festival, assuming 2.5 people per vehicle. Parking for the festival is along the streets in Apex. Peak Fest is cancelled in the event of bad weather such as rain.

A sensitivity study was conducted to estimate the impact of transients attending Peak Fest on the ETE for an evacuation of the entire EPZ (Region R03). The results of this study are attached and will be included in Appendix I of the revised ETE report. As indicated in Table I-5 of the attached, the ETE increased by 5, 10, 10 and 5 minutes for the 50^{th}, 90^{th}, 95^{th} and 100^{th} percentiles of evacuating population, respectively. The additional transients present in Apex for Peak Fest prolong the congestion within Apex; however, the ETE for the entire EPZ is not materially affected.

d. As discussed in the response to part a above, peak transient population is considered and a special event (construction of new plant) is considered.

Associated HAR COL Application Revisions:

The attached sensitivity study will be added to Appendix I of the revised ETE report to document the affect of Peak Fest on the ETE.

Attachments/Enclosures:

Pages I-5 and I-6 to be added to Appendix I in the revised ETE report

List of Attachments:

1) NRC RAI # 13.03-21 [PGN RAI ID #H-0423]:

   Revised pages I-5 and I-6 of Harris Evacuation Time Estimate Report (to be added to Appendix I in the revised ETE report) [2 pages]

Peak Fest

The town of Apex (in sub-zone E) hosts Peak Fest every year on a Saturday in May from 9:00 am to 5:00 pm. The event requires Salem Street to be closed to vehicular traffic between Center St and NC Hwy 55. Based on data provided during a telephone conversation with a representative from the festival commission, Salem Street is closed from 8:00 a.m. to 6:00 p.m. to allow for setup and cleanup. There are police officers stationed at each street corner to divert traffic away from the festival area. Parking for the festival is located along the streets in Apex.

A sensitivity study was considered to assess the impact on the ETE of the additional transients the festival attracts into the EPZ. This "Special Event" is numbered Scenario 13 for this study.

Methodology

Since the event is held on a Saturday in May, it is appropriate to use Scenario 3 (summer, weekend, midday, good weather) as the base case for this study. The number of additional transient vehicles is estimated using the following data provided by the festival commission.

- Peak attendance for the event is on average 15,000 to 20,000 persons.
- Approximately half of the people travel more than 10 miles to attend the event; therefore it is assumed that 50% of the attendees, or 10,000 persons; are transients.
- Assuming 2.5 persons per vehicle, it is estimated that there will be an additional 4,000 transient vehicles for those attending the festival.

Given that the parking is located along the streets in Apex, it is reasonable to assume that these additional transient vehicles will travel southbound on NC Hwy 55 to access US Hwy 1, northbound on Center St to access US Hwy 1, and northbound on Old US Hwy 1 out of the EPZ. It is assumed that these transients will begin their evacuation trips within one hour of the advisory to evacuate: 10% will be ready to evacuate within 15 minutes, 50% will be ready to evacuate in the subsequent 15 minutes, 30% in the next 15 minutes and 10% in the final 15 minutes. It is further assumed that the street closure on Salem Street will be temporary and will re-open one hour after the advisory to evacuate.

Results

Table I-5 compares the 50th, 90th, 95th, and 100th percentile ETE for the Special Event with the ETE for the base case. The additional transient vehicles present for Peak Fest increase the ETE by 5, 10, 10 and 5 minutes for the 50th, 90th, 95th and 100th percentiles, respectively.

Table I-5: Scenario 3 (Base) and Scenario 13 (Peak Fest) ETE for Region 3				
Case	ETE (hr:min) for Indicated Percentile			
	50th Percentile	90th Percentile	95th Percentile	100th Percentile
Scenario 3, Region 3	1:10	2:15	2:30	4:05
Scenario 13, Region 3	1:15	2:25	2:40	4:10

Figure I-1 is a plot of vehicles evacuating over time after the advisory to evacuate for Region 3, under Scenario 13 (Peak Fest) and Scenario 3 (summer, weekend, midday, good weather) conditions.

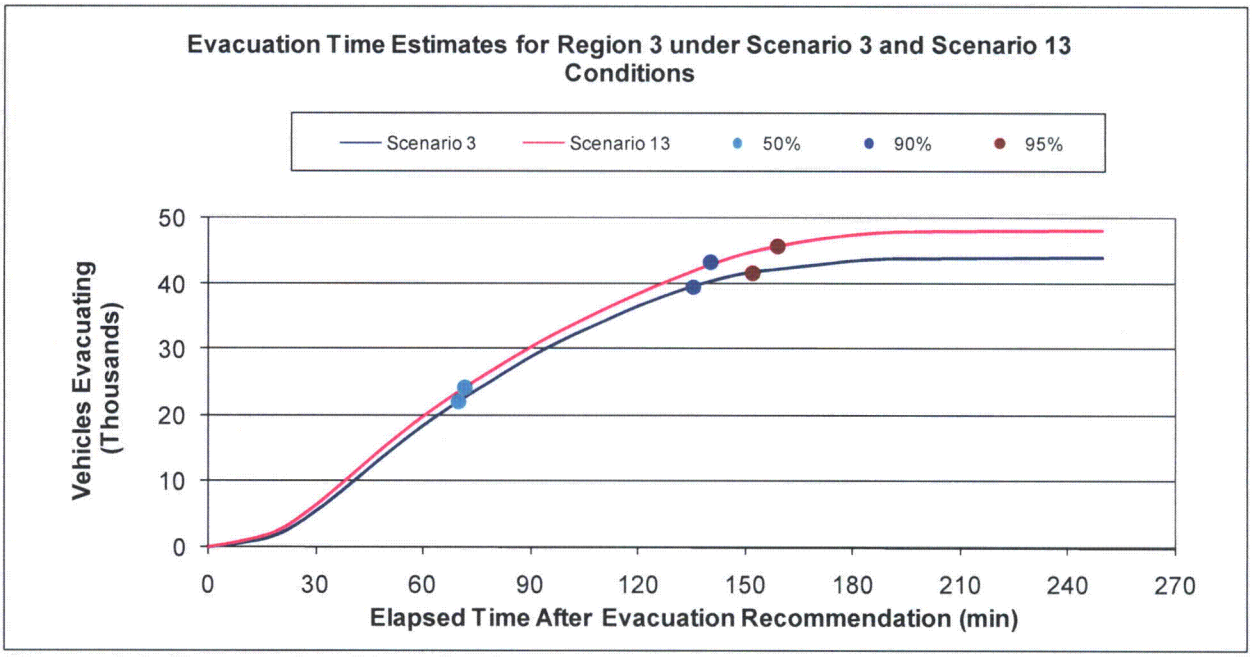

Figure I-1: Evacuation Plots for Scenario 3 (Base) and Scenario 13 (Peak Fest) for the Evacuation of the Entire EPZ (Region 3)