



SEP 05 2007

SERIAL: HNP-07-115  
10 CFR 54

U. S. Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

Subject: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1  
DOCKET NO. 50-400 / LICENSE NO. NPF-63

RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION -  
LICENSE RENEWAL APPLICATION: QUESTIONS RELATED TO  
SCOPING OF FIRE PROTECTION COMPONENTS, ENGINEERED  
SAFETY FEATURES, AND CIVIL STRUCTURES

- References:
1. Letter from Cornelius J. Gannon to the U. S. Nuclear Regulatory Commission (Serial: HNP-06-136), "Application for Renewal of Operating License," dated November 14, 2006
  2. Letters from Maurice Heath (NRC) to Robert J. Duncan II, "Requests for Additional Information for the Review of the Shearon Harris Nuclear Power Plant, Unit 1, License Renewal Application," dated August 7, 2007, Accession Numbers ML072140043, ML072140246, and ML072180069

Ladies and Gentlemen:

On November 14, 2006, Carolina Power & Light Company, now doing business as Progress Energy Carolinas, requested the renewal of the operating license for the Shearon Harris Nuclear Power Plant, Unit No. 1, also known as the Harris Nuclear Plant (HNP), to extend the term of its operating license an additional 20 years beyond the current expiration date.

By letters dated August 7, 2007, the Nuclear Regulatory Commission (NRC) provided three requests for additional information (RAIs) concerning the HNP License Renewal Application (LRA). The enclosure to this letter provides responses to the RAIs. The responses to RAI 2.4-2 and RAI 2.4-3 indicate that changes to the LRA are required. A transmittal to document these changes will be provided at a later date. Neither this letter nor the enclosure contains any new or revised Regulatory Commitments.

Please refer any questions regarding this submittal to Mr. Roger Stewart, Supervisor - License Renewal, at (843) 857-5375.

Progress Energy Carolinas, Inc.  
Harris Nuclear Plant  
P.O. Box 165  
New Hill, NC 27562

A126  
NRR

I declare, under penalty of perjury, that the foregoing is true and correct  
(Executed on **SEP 05 2007**).

Sincerely,



Thomas J. Natale  
Manager - Support Services  
Harris Nuclear Plant

TJN/mhf

Enclosure: Responses to Three Requests for Additional Information dated August 7, 2007

cc:

Mr. P. B. O'Bryan (NRC Senior Resident Inspector, HNP)  
Ms. B. O. Hall (Section Chief, N.C. DENR)  
Mr. M. L. Heath (NRC License Renewal Project Manager, HNP)  
Ms. M. G. Vaaler (NRC Project Manager, HNP)  
Dr. W. D. Travers (NRC Regional Administrator, Region II)

## Responses to Three Requests for Additional Information dated August 7, 2007

### Background

On November 14, 2006, Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., requested the renewal of the operating license for the Shearon Harris Nuclear Power Plant, Unit No. 1, also known as the Harris Nuclear Plant (HNP), to extend the term of its operating license an additional 20 years beyond the current expiration date.

The Nuclear Regulatory Commission (NRC) provided requests for additional information (RAIs) concerning the HNP License Renewal Application in three letters dated August 7, 2007 (i.e., Accession Numbers ML072140043, ML072140246, and ML072180069). This enclosure provides responses to the NRC RAIs. Note that responses to NRC RAIs 2.3.3.31-1 and 2.3.3.31-2 were provided in HNP letter Serial: HNP-07-032, dated March 23, 2007.

### Table of Contents

### Page

NRC RAI 2.3.3.31-3.....	1
NRC RAI 2.3.3.31-4.....	3
NRC RAI 2.3.3.31-5.....	3
NRC RAI 2.3.3.31-6.....	5
NRC RAI 2.3.2-1.....	10
NRC RAI 2.3.2-2.....	10
NRC RAI 2.4-1.....	10
NRC RAI 2.4-2.....	11
NRC RAI 2.4-3.....	12
NRC RAI 2.4-4.....	13

---

### NRC RAI 2.3.3.31-3

License renewal application (LRA) drawing 5-G-0055-LRA, "Fire Protection System Unit 1," shows the Auxiliary Boiler Fuel Oil Storage Tanks foam fire suppression system as out of scope (i.e., not highlighted). Verify whether the foam fire suppression system and its components are in scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an aging management review (AMR) in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and not subject to an AMR, please provide justification for the exclusion.

### RAI 2.3.3.31-3 Response

As described in the LRA Section 2.3.3.31, the HNP Fire Protection System is in the scope of License Renewal per 10 CFR 54.4(a). Although the Auxiliary Boiler Fuel Oil Storage Tanks foam fire suppression system is a part of the Fire Protection System, as discussed on LRA Page 2.3-116, the foam fire suppression system components do not support or perform any system intended function and are therefore not subject to AMR per 10 CFR 54.21(a)(1). LRA

Subsection B.2.14 describes the position regarding the Auxiliary Boiler Fuel Oil Storage Tanks foam fire suppression system:

In addition, a foam suppression system is used to protect the Auxiliary Boiler Fuel Oil Tanks, which are isolated from and over 500 feet from any Class 1 structure and those structures directly related to power production. The foam suppression system is not needed to comply with the requirements of 10 CFR 50.48.

These tanks are considered part of the Miscellaneous Structures and excluded from the scope of License Renewal. The foam protection equipment is isolated from the Fire Water System water supply and can have no impact on it (refer to the subject Scoping Drawing 5-G-055-LR). Miscellaneous Structures are described in the response to item C.7.r of NRC Branch Technical Position (BTP) 9.5-1 in a letter from S. R. Zimmerman (CP&L) to H. R. Denton, (NRC), (Serial: NLS 86-137), "Fire Protection - BTP 9.5-1," dated May 7, 1986. An excerpt from that response is:

Project Conformance:

C.7.r. Miscellaneous Areas

Miscellaneous areas such as plant administrative offices, shops, warehouses, and auxiliary boilers are located so that a fire or effects of a fire, including smoke, do not adversely affect any safety-related systems or equipment, since most will be located in separate, detached buildings.

The position goes on to describe the protection equipment that is also provided. Since the fires in the Miscellaneous Areas are located so they do not adversely affect any safety-related systems or equipment, the components do not support the system intended function and, therefore, do not require an AMR.

This position is consistent with the Nuclear Energy Institute (NEI) 95-10 position regarding what to include in the scope of Current Licensing Basis for regulated events. NEI 95-10, Revision 6, Section 3.1.3, states regarding systems that are relied on to support regulated events:

The information sources in Table 3.1-1 could be considered for identifying the systems, structures and components whose functions are relied on to demonstrate compliance with the regulatory requirements (i.e., whose functions were credited in the analysis or evaluation). Mere mention of a system, structure or component in the analysis or evaluation does not constitute support of a specified regulatory function.

Based on the above discussion, the foam fire suppression system and its components are a part of the Fire Protection System, which is in the scope of license renewal in accordance with 10 CFR 54.4(a). However, the foam fire suppression system components are not subject to an AMR in accordance with 10 CFR 54.21(a)(1), because these components are not needed to support the Fire Protection System intended function.

#### **NRC RAI 2.3.3.31-4**

The Shearon Harris Nuclear Power Plant (HNP) final safety analysis report (FSAR) states that the traveling screens are provided at the intake structure for the removal of larger impurities which may be present in the water. It is not clear from review of Section 2.3.3.31 and Table 2.3.3.27 of the LRA that the traveling water screens are included within the scope of license renewal and subject to an AMR. Traveling screens are typically considered to be passive, long-lived components. Traveling screens are located in a fresh or raw water/air environment and are typically constructed of carbon steel. Carbon steel in a fresh or raw water environment or water/air environment is subject to loss of material, pitting, crevice formation, and microbiologically influenced corrosion, and fouling. Explain the apparent exclusion of the trash racks and traveling screens that are located upstream of the fire pump suction from the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1).

#### **RAI 2.3.3.31-4 Response**

As described in LRA Sections 2.3.3.9 and 2.3.3.18, the Screen Wash System and Emergency Screen Wash System, respectively, are in the scope of License Renewal per 10 CFR 54.4(a). The Screen Wash System and Emergency Screen Wash System contain the traveling screens. Because the traveling screens are moving parts and change configuration, they are considered to be active and excluded from AMR per 10 CFR 54.21(a)(1). However, the associated civil embeds and supports do not move or change configuration and are therefore subject to AMR per 10 CFR 54.21(a)(1). These commodities are included in the AMR for the associated structures. Trash racks are described in the FSAR as coarse screens that are part of the Emergency Service Water and Cooling Tower Makeup Intake Structure and the Emergency Service Water Screening Structure. See the response to RAI 2.4-3 below.

#### **NRC RAI 2.3.3.31-5**

FSAR listed various types of water fire suppression systems provided in the plant fire areas for fire suppression activities. The fire suppression system in various areas are:

- Automatic Pre-Action Sprinkler System (Fire Areas: 10-A-CSRA, 12-A-BAL, 12-AHV& IR, 5-W-BAL, and Turbine Generator- Unit No.1)
- Automatic Multi-Cycle Sprinkler System (Fire Areas: 1-A-BAL, 1-A-EPA, 1-A-EPB, 5-F-CHF, 5-F-FPP, 1-D-DGA, 1-D-DGB, 1-D-DTA, 1-D-DTB, 1-O-PA, and 1-O-PB)
- Water Spray System (Fire Area: Turbine Generator- Unit No. 1 and Charcoal Filter Assemblies)
- Manual Fluoro-Protein Mechanical Foam System (Fuel Oil Storage Tanks)
- Wet-Pipe System

- Deluge Systems

The staff requests that the applicant verify whether the above fire suppression systems installed in various areas of the plant are in the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

### **RAI 2.3.3.31-5 Response**

As described in the LRA Section 2.3.3.31, the HNP Fire Protection System is in the scope of License Renewal per 10 CFR 54.4(a). Included in the Fire Protection System are the fire suppression systems listed below. Also listed is whether the fire suppression system/fire area combination is subject to an AMR per 10 CFR 54.21(a)(1) and justification for exclusion if not subject to 10 CFR 54.21(a)(1).

Some of the fire areas listed below are very large areas consisting of many fire zones as indicated in the Fire Hazards Analysis. These fire areas may have more than one type of fire suppression system. For example, Fire Area 5-W-BAL has Wet Pipe Systems on Elevations 261 ft. and 276 ft. and a Pre-Action System on Elevation 291 ft. If the suppression system in the fire area listed is subject to an AMR, an affirmative answer is given. In this case, that type of suppression system protects equipment in at least one of the fire zones in the fire area. A negative answer contains an accompanying justification for the exclusion from an AMR. Additionally, a not applicable (N/A) response has a corresponding explanation.

- YES Automatic Pre-Action Sprinkler System (Fire Areas: 1-A-CSRA (The question incorrectly identified this area as 10-A-CSRA.), 12-A-BAL, 12-A-HV&IR, 5-W-BAL, and Turbine Generator- Unit No. 1)
- YES Automatic Multi-Cycle Sprinkler System (Fire Areas: 1-A-BAL, 1-A-EPA, 1-A-EPB, 5-F-CHF, 5-F-FPP, 1-D-DGA, 1-D-DGB, 1-D-DTA, 1-D-DTB, 1-O-PA, and 1-O-PB); although not included in the RAI, Fire Area 1-C also uses these suppression systems, and the water supplies are shown in License Renewal Scoping drawing 5-G-0388-LR.
- YES Water Spray System (Fire Area: Turbine Generator- Unit No. 1 Building).
- N/A Water Spray System (Fire Area: Turbine Generator- Unit No. 1 Building charcoal filter room). This equipment in the Turbine Building is protected by a Pre-Action System as noted above. Water Spray Systems are not used for protection of charcoal filter assemblies.
- NO Manual Fluoro-Protein Mechanical Foam System (Fuel Oil Storage Tanks). This system protects the Auxiliary Boiler Fuel Oil Storage Tanks. See response to RAI 2.3.3.31-3.

YES Wet-Pipe Systems are shown on 5-G-0406-LR. They are in the HVAC room on the roof of the RAB (coordinate B-16) and in various locations in the Waste Processing Building.

YES Deluge Systems (Note: The deluge systems are the same as the Water Spray System. There are five Water Spray (deluge) systems using open sprinklers for several areas on Elevation 261 ft. in the Turbine Building and seven systems using spray nozzles protecting the transformers adjacent to the Turbine Building.).

The above fire suppression systems that are subject to an AMR are highlighted components on 5-G-0406-LR of the License Renewal Scoping drawings. The following designators on these drawings show the types of systems that are in scope. The symbols on the drawings indicating the type of system are these letters enclosed in a triangle.

- M - Multi-cycle Sprinkler Systems
- P - Pre-Action Sprinkler Systems
- W - Water Spray Systems (Note that this designator is also used for the "Deluge Systems" listed in FSAR Table 9.5.1-5B)
- S - Wet Pipe Sprinkler system

#### **NRC RAI 2.3.3.31-6**

LRA Table 2.3.3-27 excludes several types of fire protection components that appear in the safety evaluation report and/or FSAR, and which are also highlighted in the LRA drawings. These components are listed below:

- yard fire hydrants
- interior hose standpipe
- hose connections and racks
- manual hose stations
- pipe fittings
- pipe supports
- couplings
- threaded connections
- restricting orifices
- interface flanges
- chamber housings
- heat-actuated devices
- gauge snubbers
- tank heaters
- Halon 1301 storage cylinders
- thermowells
- water motor alarms
- expansion joint
- filter housing
- gear box housing
- heat exchangers (bonnet)

- heat exchangers (shell)
- heat exchangers (tube)
- heater housing
- diesel driven fire pump engine's muffler
- diesel driven fire pump engine's intake and exhaust silencers
- orifices
- sight glass
- strainer housing
- turbocharger housing
- flexible hose
- latch door pull box
- pneumatic actuators
- actuator housing
- dikes (contain oil spill)
- storage tanks for fire water system
- buried underground fuel oil tanks
- expansion tank
- jacket cooling water keepwarm pump and heater
- lubricating oil collection system components for reactor coolant pump
- lubricating oil cooler
- auxiliary lubricating oil makeup tank
- rocker lubricating oil pump
- flame retardant coating for cables
- fire barrier penetration seals
- fire barrier walls, ceilings, floor, and slabs
- fire doors
- fire rated enclosures
- fire retardant coating for structural steel supporting wall and ceiling

For each, determine whether the component should be included in Table 2.3.3.27, and if not, justify the exclusion.

#### **RAI 2.3.3.31-6 Response**

LRA Section 2.3.3.31 describes the Fire Protection System. LRA Section 2.3.3 provides the scoping and screening results for mechanical systems designated as Auxiliary Systems. Table 2.3.3-27 lists the passive mechanical components/commodities that require an AMR. Table 2.3.3-27 does not include mechanical components that do not require an AMR, and it does not include civil or electrical components/commodities. Civil and Electrical scoping and screening results are in LRA Sections 2.4 and 2.5.

As described in the LRA Section 2.3.3.31:

The Fire Detection System is an electrical system. Scoping and screening of electrical systems are discussed in Section 2.5. Fire barriers are addressed as civil commodities

within the associated structure. Scoping and screening of structures is discussed in Section 2.4.

Components/subcomponents, such as fire rated doors, penetrations, other fire barriers (e.g., walls, floors, and ceilings), fire rated enclosures, spray on fire proofing coating, cable enclosures, and fire breaks are addressed as civil commodities. They are included in the structures that are in scope and have a fire protection structure intended functions.

As noted in Section 2.5:

The screening for electrical/I&C components was performed on a generic component (commodity group) basis for the in-scope electrical/I&C systems listed in Table 2.2-3, as well as the electrical/I&C component types associated with in-scope mechanical systems and civil structures listed in Tables 2.2-1 and 2.2-2.

Therefore, electrical/I&C type components are not included in Table 2.3.3-27.

The Component/Subcomponent column in the table below addresses the items listed in this RAI. The column on the right either identifies the corresponding Component/Commodity that includes the component or subcomponent or justifies why it is not subject to an AMR.

<b>Component/ Subcomponent</b>	<b>Included with the following Component/Commodity or Justification for Exclusion</b>
yard fire hydrants	Included in Buried piping, piping components, and piping elements.
interior hose standpipe	Included in Piping, piping components, and piping elements.
hose connections and racks	Hose connections are included in Piping, piping components, and piping elements. Racks are not included in Table 2.3.3-27; refer to Fire Hose Stations which are a Civil Commodity included in various structures that house them.
manual hose stations	Not included in Table 2.3.3-27. Refer to Fire Hose Stations which are a Civil Commodity included in various structures that house them. See Response to RAI 2.3.3.31-1 in Progress Energy letter to NRC (Serial: HNP-07-032), dated March 23, 2007 - ML070880738.
pipe fittings	Included in Buried Piping, piping components, and piping elements and Included in Piping, piping components, and piping elements.
pipe supports	Not included in Table 2.3.3-27. Refer to Anchor / Embedment and Supports for Non-ASME Piping & Components which are Civil Commodities included in various structures that house them.
couplings	Included in Piping, piping components, and piping elements.
threaded connections	Threaded connections are considered part of the associated Component/Commodity Piping, piping components, and piping elements.
restricting orifices	Not included in Table 2.3.3-27; there were no restricting orifices identified in the system.
interface flanges	Considered part of the associated Buried Piping, piping components, and piping elements and Piping, piping components, and piping elements.
chamber housings	Included in Piping, piping components, and piping elements.

Component/ Subcomponent	Included with the following Component/Commodity or Justification for Exclusion
heat-actuated devices	Not included in Table 2.3.3-27; heat actuated electrical devices do not require an AMR as they are active devices. Fire detection components that are used to detect fires; actuate fire suppression systems; monitor the operating status of fire suppression system components; annunciate fire, operation, trouble, and actuation signals; actuate local and general fire alarms; identify the location of fires; and maintain a record of fire related events are part of the Fire Detection System. This system is an electrical system per LRA Table 2.2-3 License Renewal Scoping Results For Electrical/I&C Systems (LRA Page 2.2-11). Damper fusible links do not require an AMR. A fusible link is part of the damper actuating mechanism. Heat changes its properties, and it changes configuration to permit operation of the damper. Therefore, it is considered an active subcomponent. Heat from a fire will cause individual sprinkler heads to fuse, allowing water flow from the sprinkler heads. These heat actuated devices are considered active subcomponents; because, as heat changes their properties, they change configuration to operate and perform their intended function.
gauge snubbers	Not Included in Table 2.3.3-27. There were no gauge snubbers identified in the system.
tank heaters	Not included in Table 2.3.3-27. There were no tank heaters identified in the system.
Halon 1301 storage cylinders	Not included in Table 2.3.3-27. As described in LRA Section B.2.14, the fixed Halon-1301 system does not support a license renewal intended function and is not subject to an AMR. Portable storage cylinders are replaced on condition by the Fire Protection Program activities and are therefore short-lived and not subject to an AMR.
thermowells	Not included in Table 2.3.3-27. There were no thermowells identified in the system.
water motor alarms	Included in Piping, piping components, and piping elements.
expansion joint	Not included in Table 2.3.3-27. There was no expansion joint identified in the diesel engine exhaust system.
filter housing	Included in Filters.
gear box housing	Included in Heat Exchanger Components. The angle gear box housing between the Diesel-Driven Fire Pump engine and pump shaft also contains cooling coils. Therefore the gear box housing was considered part of the Heat Exchanger Components.
heat exchangers (bonnet)	Included in Heat Exchanger Components.
heat exchangers (shell)	Included in Heat Exchanger Components.
heat exchangers (tube)	Included in Heat exchanger tubes for the Heat Transfer Function, and Included in Heat Exchanger Components for the Pressure Boundary function.
heater housing	Included in Piping, piping components, and piping elements.
diesel driven fire pump engine's muffler	Included in Diesel Exhaust Silencers.
diesel driven fire pump engine's intake and exhaust silencers	Included in Diesel Exhaust Silencers. This small diesel engine does not have an intake silencer.
orifices	Not included in Table 2.3.3-27. There were no orifices identified in the system.
sight glass	Included in Heat Exchanger Components, or Included in a larger component and identified as part of the AMR evaluation. See Plant-Specific Note 355 in LRA Table 3.3.2-27.
strainer housing	Included in System strainers.
turbocharger housing	Not included in Table 2.3.3-27. In the case of this small diesel engine, HNP methodology considers this part of a complex assembly; and, therefore, it is considered active. See LRA Section 2.1.2.1, Page 2.1-21, item 2, for a discussion regarding complex assemblies.

Component/ Subcomponent	Included with the following Component/Commodity or Justification for Exclusion
flexible hose	Included in Piping, piping components, and piping elements.
latch door pull box	Not included in Table 2.3.3-27. This is a Civil Commodity included in Racks, Panels, Cabinets, and Enclosures for Electrical Equipment and Instrumentation (includes support members, welds, bolted connections, support anchorage to building structure).
pneumatic actuators	Not included in Table 2.3.3-27. The HNP methodology considers this an active component.
actuator housing	Not included in Table 2.3.3-27. The HNP methodology considers Actuators in their entirety as part of the active component.
dikes (contain oil spill)	Not included in Table 2.3.3-27. These are a Civil Commodity included in Concrete: Exterior Above Grade and Concrete: Exterior Below Grade in various structures that house them. See response to RAI 2.3.3.31-1 in Progress Energy letter to NRC (Serial: HNP-07-032), dated March 23, 2007 - ML070880738.
storage tanks for fire water system	Not included in Table 2.3.3-27. HNP uses the Auxiliary Reservoir as the Fire Water Supply. The fire water pumps are located at the Emergency Service Water Screening Structure.
buried underground fuel oil tanks	Not included in Table 2.3.3-27. There are no buried underground fuel oil tanks in the Site Fire Protection System. The Diesel-Driven Fire Pump Fuel Oil Storage Tank is an elevated saddle tank.
expansion tank	Included in Piping, piping components, and piping elements. The small jacket water coolant container is treated as part of the miscellaneous piping associated with Diesel-Driven Fire Pump Engine auxiliaries.
jacket cooling water keepwarm pump and heater	A keepwarm pump is not Included in Table 2.3.3-27: There is no keepwarm pump for this diesel. The electric heater housing is part of the commodity Piping, piping components, and piping elements.
lubricating oil collection system components for reactor coolant pump	Not included in LRA Table 2.3.3-27. These lubricating oil collection system components are included in the Reactor Coolant Pump and Motor System and not the Fire Protection System. See LRA Table 2.3.1-4 (Page 2.3-18).
lubricating oil cooler	Not included in Table 2.3.3-27. For the Diesel-Driven Fire Pump, the lubricating oil cooler is bolted to the engine block and is treated as part of the diesel engine complex assembly. See LRA Section 2.1.2.1, page 2.1-21, item 2, for a discussion regarding complex assemblies. The approach to the Diesel-Driven Fire Pump engine is supported by NUREG-1801. There is no listing in NUREG-1801, Volume 2, Section VII.G, Fire Protection that suggests that the Diesel-Driven Fire Pump lube oil cooler requires aging management.
auxiliary lubricating oil makeup tank	Not included in Table 2.3.3-27. There is no auxiliary lubricating oil makeup tank for this small diesel engine.
rocker lubricating oil pump	Not included in Table 2.3.3-27. The oil pump is part of the diesel engine complex assembly.
flame retardant coating for cables	Not included in Table 2.3.3-27. There are no sprayed on flame retardant cable coatings used at HNP. See the response to RAI 2.3.3.31-1 in Progress Energy letter to NRC (Serial: HNP-07-032), dated March 23, 2007 - ML070880738, under Fire Proofing.
fire barrier penetration seals	Not included in Table 2.3.3-27. See the response to RAI 2.3.3.31-2 in Progress Energy letter to NRC (Serial: HNP-07-032), dated March 23, 2007 - ML070880738.
fire barrier walls, ceilings, floor, and slabs	Not included in Table 2.3.3-27. These are Civil commodities included in the structure that houses them. See the corresponding civil commodities in response to RAI 2.3.3.31-2 in Progress Energy letter to NRC (Serial: HNP-07-032), dated March 23, 2007 - ML070880738.
fire doors	Not included in Table 2.3.3-27. See the response to RAI 2.3.3.31-2 in Progress Energy letter to NRC (Serial: HNP-07-032), dated March 23, 2007 - ML070880738.

Component/ Subcomponent	Included with the following Component/Commodity or Justification for Exclusion
fire rated enclosures	Not included in Table 2.3.3-27. These are civil commodities included in Fire Rated Assemblies in the structures that house them.
fire retardant coating for structural steel supporting wall and ceiling	Not included in Table 2.3.3-27. See the civil commodity Fire Rated Assemblies in response to RAI 2.3.3.31-1 in Progress Energy letter to NRC (Serial: HNP-07-032), dated March 23, 2007 - ML070880738.

**NRC RAI 2.3.2-1**

The scoping boundary drawing, 5-G-0808-LR, indicates that Boron Injection Tank is within the scope of license renewal; however, license renewal application (LRA) Table 2.3.2-2 does not identify the Boron Injection Tank separately as within the scope of license renewal. Therefore, the staff requests that the applicant indicate which line item in LRA Table 2.3.2-2 includes the subject component.

**RAI 2.3.2-1 Response**

The Boron Injection Tank is within the scope of license renewal and is discussed in LRA Subsection 2.3.2.3, High Head Safety Injection System. The LRA Table 2.3.2-2 component/commodity, Piping, piping components, and piping elements, includes the Boron Injection Tank.

**NRC RAI 2.3.2-2**

The scoping boundary drawing, 5-G-0809-LR, indicates that accumulator tanks are within the scope of license renewal; however, LRA Table 2.3.2-2 does not identify the accumulator tanks separately as within the scope of license renewal. Therefore, the staff requests that the applicant indicate which line item in LRA Table 2.3.2-2 includes the subject component.

**RAI 2.3.2-2 Response**

The above-referenced accumulator tanks, shown on scoping boundary drawing 5-G-0809-LR, are within the scope of license renewal and discussed in LRA Subsection 2.3.2.5, Passive Safety Injection System. LRA Table 2.3.2-4 identifies these tanks as component/commodity Cold Leg Accumulators.

**NRC RAI 2.4-1**

Section 2.4.1.1 "Containment Structure" of the license renewal application (LRA), page 2.4-4, states "The welded attachments to the metallic liner (e.g., floor beams, seismic restraints, leak channels, equipment/pipe supports, etc.) do not perform a pressure retaining function associated with the containment vessel. For this reason, the welded attachments are not included with the liner components. These welded attachments are evaluated with the specific commodity

groups." Please identify these specific component commodity groups, as well as their intended functions, for the welded attachments.

**RAI 2.4-1 Response**

The component/commodity groups from LRA Table 2.4.1-1 and the specific components and intended functions are included in the following table:

Component/Commodity	Intended Function(s)	Specific Components Included
Cable Tray, Conduit, HVAC Ducts, Tube Track (includes support members, welds, bolted connections, support anchorage to building structure)	C-2 Structural Support for Criterion (a)(1) components C-7 Structural Support for Criterion (a)(2) and (a)(3) components	Conduit Supports HVAC Duct Supports Tubing Support
Platforms, Pipe Whip Restraints, Jet Impingement Shields, Masonry Wall Supports, and Other Miscellaneous Structures (includes support members, welds, bolted connections, support anchorage to building structure)	C-2 Structural Support for Criterion (a)(1) components C-7 Structural Support for Criterion (a)(2) and (a)(3) components C-11 Pipe Whip Restraint/HELB Shielding C-12 Heat Sink	Platform Supports
Steel Components: All structural steel	C-2 Structural Support for Criterion (a)(1) components C-12 Heat Sink	Crane Rail Ring Girder Support
Supports for ASME Class 1, 2, 3 Piping & Components	C-2 Structural Support for Criterion (a)(1) components C-12 Heat Sink	Pipe Supports for Spray Piping

**NRC RAI 2.4-2**

Section 2.4.1.1 "Containment Structure" of the LRA, page 2.4-7, states that the insulation for Type II cold penetrations is not in scope because the concrete surrounding the penetration will always be below the maximum local area temperature of 200°F. Please state the criteria employed for determining the inclusion of insulation within the scope.

**RAI 2.4-2 Response**

The criteria employed for determining the inclusion of insulation within the scope of License Renewal was based on ensuring HNP concrete temperatures did not exceed 150°F in general areas or 200°F local areas in order to align with the guidance of NUREG-1801, Item II.A1-1. The review for the Containment Structure determined that insulation was required on the hot piping (>200°F) in the Type I hot pipe penetrations to maintain the concrete structure cylinder wall temperature below 200°F (for a License Renewal "C-3" protection intended function) as discussed in FSAR Sections 3.8.1.1.3.3 and Section 3.8.2.1.3. The review for the Containment Structure determined the Type II cold penetrations were provided for low temperature lines (<200°F) and on some HVAC penetrations and groups of small diameter lines (e.g., instrument and sampling) based on FSAR Sections Sections 3.8.1.1.3.3 and Section 3.8.2.1.4.1. Insulation

that was installed on several of these lines was not credited with maintaining the concrete cylinder wall temperature below 200°F and was therefore not included in the scope of License Renewal. However, after further review of design documents, the operating temperature of several of these small diameter lines in Type II cold penetrations was determined to exceed 200°F. Therefore, the insulation on these hot small diameter lines in Type II penetrations will be included in the scope of License Renewal within the Component/Commodity group Insulation (Hot Pipe Penetrations) in LRA Table 2.4.1-1. LRA Subsection 2.4.1.1, Page 2.4-7, will be revised to include the insulation on these hot, small diameter lines in Type II penetrations in the scope of License Renewal. LRA Section 3.5 will be revised as required to include the insulation on these hot small diameter lines in Type II cold penetrations. Also, Plant-Specific Note 509 will be revised to include the small diameter lines in Type II penetrations.

### **NRC RAI 2.4-3**

Section 2.4.2.12 "Emergency Service Water and Cooling Tower Makeup Intake Structure" of the LRA, Table 2.4.2-12, does not include screens and stop logs. Clarify whether screens and stop logs are in the scope. If not, provide justification for their exclusion from the scope.

### **RAI 2.4-3 Response**

Stop logs are not in the scope of License Renewal. Stop logs have a non-safety related classification and are not normally installed unless there is a need to dewater one of the bays during an outage. They have no License Renewal intended function.

Traveling screens which are installed in four of the bays in the Emergency Service Water and Cooling Tower Makeup Intake Structure were reviewed as mechanical components. Refer to response to RAI 2.3.3.31-4.

Coarse screens (or trash racks) are installed in each of the bays in the Emergency Service Water and Cooling Tower Makeup Intake Structure. The coarse screens are included in the scope of License Renewal as "Other Miscellaneous Structure" in the commodity/component group "Platforms, Pipe Whip Restraints, Jet Impingement Shields, Masonry Wall Supports, and Other Miscellaneous Structures (includes support members, welds, bolted connections, support anchorage to building structure)" in LRA Table 2.4.2-12 with a C-7 intended function.

The Fine screens are not in the scope of License Renewal. The Fine screens have a non-safety related classification, are installed only for limited time periods during out of structure maintenance of the traveling screens, and have no License Renewal intended function.

As additional information, the Emergency Service Water Screening Structure also has stop logs and fine screens which are not in the scope of License Renewal and coarse screens which are in the scope of License Renewal. The traveling screens were reviewed as mechanical components.

As a result of this RAI, a revision to the LRA is required to incorporate a line item into the AMR tables for the Emergency Service Water and Cooling Tower Makeup Intake Structure and the Emergency Service Water Screening Structure to address the coarse screens in a raw water environment.

#### **NRC RAI 2.4-4**

Section 2.4.2.16 "Fuel Handling Building" of the LRA, Page 2.4-48, states "Design criteria have been used to assure that the collapse of adjacent non-seismic Category I structures would not impair the integrity of the seismic Category I structures or components should an earthquake occur." Please specify what design criteria have been used and explain how these design criteria can assure that the collapse of adjacent non-seismic Category I structures would not impair the integrity of the seismic Category I structures or components.

#### **RAI 2.4-4 Response**

As stated in FSAR Section 3.7.2.8A,

The following criteria were used to assure that the collapse of non-Seismic Category I structures would not impair the integrity of adjacent Seismic Category I structures or components:

- a) Sufficient separation has been maintained between Seismic Category I and non-Seismic Category I structures, or
- b) The partial or complete collapse of these structures will not impair the integrity of any of the neighboring Seismic Category I structures or components, or
- c) The failure or collapse of non-Seismic Category I structures is prevented under SSE conditions.

As discussed in FSAR Section 3.7.2.8A, the plant arrangement provides for sufficient distance between Seismic Category I structures, systems, and components and non-Seismic Category I structures, except for the Turbine Building, the retaining wall west of the Fuel Handling Building, and the retaining wall east of the Fuel Handling Building by the Unit 2 Reactor Auxiliary Building. The Turbine Building, the retaining wall west of the Fuel Handling Building, and the retaining wall east of the Fuel Handling Building are seismically designed in accordance with Regulatory Guide 1.29, Positions C.2 and C.4. More detail is provided in FSAR Sections 3.7.2.8A and 3.8.4.9.