Progress Energy

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Vice President
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Progress Energy Carolinas, Inc

FEB 1 4 2003

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

Serial: HNP-03-014
10 CFR 50.90

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
TECHNICAL SPECIFICATION 5.6.3.d

Ladies and Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Part 50.90, Progress Energy Carolinas, Inc. (alternately known as Carolina Power & Light Company) requests a license amendment for the Harris Nuclear Plant (HNP) to allow an increase in the decay heat load from fuel stored in Spent Fuel Pools C and D in Technical Specification 5.6.3.d. The attachments to this letter support the proposed license amendment.

Attachment 1 provides the description, background, and technical analysis for the proposed change to the Technical Specifications.

Attachment 2 details, in accordance with 10 CFR 50.91(a), the basis for Progress Energy Carolinas, Inc.'s determination that the proposed change to the Technical Specifications does not involve a significant hazards consideration. Progress Energy Carolinas, Inc. has determined that the proposed change to the Technical Specifications will not significantly increase the amount of any effluent that may be released offsite and there is no significant increase in individual or cumulative occupational radiation exposure.

Attachment 3 provides an environmental evaluation which demonstrates that the proposed change to the Technical Specifications meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). In addition, the proposed change to the Technical Specifications is completely consistent with the extensive environmental analyses performed by the NRC Staff and Progress Energy Carolinas, Inc. in support of Amendment 103, which the Commission and the Court of Appeals found fully compliant with all applicable environmental requirements. Pursuant to 10 CFR 51.22(b), therefore, no environmental assessment or environmental impact statement is required for approval of this application.

Attachment 4 provides the proposed Technical Specification change.

Attachment 5 provides the revised Technical Specification page.

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A001

In accordance with 10 CFR 50.91(b), Progress Energy Carolinas, Inc. is providing the State of North Carolina with a copy of the proposed license amendment. Progress Energy Carolinas, Inc. requests that the proposed amendment be issued within one year of submittal, with implementation during the next available refueling outage after approval.

Please refer any question regarding this submittal to Mr. John Caves at (919) 362-3137.

Sincerely,

James Scarola

JS/dlt

Attachments:

1. Description, Background, and Technical Analysis
2. 10 CFR 50.92 Evaluation
3. Environmental Evaluation (10 CFR 51.22)
4. Proposed Technical Specification Change
5. Revised Technical Specification Page

Jim Scarola, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge, and belief and the sources of his information are employees, contractors, and agents of Progress Energy Carolinas, Inc. (alternately known as Carolina Power & Light Company).

Lisa M. Randall

LISA M. RANDALL NOTARY PUBLIC WAKE COUNTY, N.C.

Notary (Seal)
My commission Expires:
6-7-03

c:
Mr. J. B. Brady, NRC Senior Resident Inspector
Ms. B. O. Hall, N.C. DENR Section Chief
Mr. C. P. Patel, NRC Project Manager
Mr. L. A. Reyes, NRC Regional Administrator

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DESCRIPTION, BACKGROUND, AND TECHNICAL ANALYSIS

Description

The license amendment request for the activation of Harris Nuclear Plant (HNP) Spent Fuel Pools (SFPs) C and D (Serial: HNP-98-188 dated December 23, 1998) resulted in the issuance of Technical Specification Amendment 103 (dated December 21, 2000). Amendment 103 revised Technical Specification 5.6.3.a, b, and c for the licensed storage capacity, which is not affected by this amendment request. Documentation provided as part of the activation license amendment request stated that the projected end of plant life heat removal capacity required in SFPs C and D is 15.63 MBTU/hr. Operating License Amendment 103, however, limits the heat load from fuel stored in SFPs C and D to 1.0 MBTU/hr. This request proposes to increase the combined total SFPs C and D heat load to 7.0 MBTU/hr.

At the time of the license amendment request for activation of SFPs C and D, the configuration of the component cooling water (CCW) system allowed only 1.0 MBTU/hr of cooling capacity to be conservatively allocated to operation of those two SFPs. Even though the standard technical specifications do not include a limit on SFP heat load, the 1.0 MBTU/hr limit was added to the HNP Technical Specifications to protect the CCW system heat load design basis following SFP C and D operation. Subsequent to issuance of Amendment 103 to the HNP Technical Specifications, the CCW system was significantly upgraded as a part of the HNP steam generator replacement and power uprate modifications, and the 1.0 MBTU/hr limit no longer serves its intended purpose.

In order to achieve this heat load increase at HNP as presently configured, it is necessary to increase the maximum allowed SFP temperature from 140°F to 150°F under normal and emergency conditions other than a design basis Loss of Coolant Accident (LOCA). For a LOCA, the maximum allowed SFP temperature increases from 150°F to 160°F. The NRC previously specifically reviewed and approved a maximum allowed SFP temperature of 140°F in the Power Uprate license application (Serial: HNP- 00-175 dated December 14, 2000) and in the SER for Steam Generator/Power Uprate (dated October 12, 2001). However, the NRC has approved higher maximum allowed SFP temperatures at other nuclear plants, including:

Plant	License Amendment No.	Amendment Date	Temperature (°F)
Beaver Valley Unit 1	247	January 29, 2002	155
Byron Units 1 and 2	112	March 1, 2000	157
Virgil C. Summer	133	April 12, 1996	186

Background

This license amendment request is a continuation of the strategy for utilization of the SFPs at HNP implemented during initial licensing, License Amendment 103 for the activation of SFPs C and D, and License Amendment 107 for Steam Generator Replacement/Power Uprate (SGR/PUR). The license amendment request for SFPs C and D activation stated that the ultimate heat load capacity for pools C and D is 15.63 MBTU/hr, but the license request limited that heat load to 1.0 MBTU/hr. As part of the SGR/PUR project, the Component Cooling Water (CCW) pumps were modified and upgraded by installing new impellers. The additional heat removal capability of the CCW system provides additional cooling capacity to the spent fuel pools. The proposed license amendment will increase the heat load limit for SFPs C and D to permit balancing of spent fuel heat among all four SFPs and to utilize the available CCW system cooling capacity.

The remainder of this subsection provides a description of the structures, systems and components that are involved in this license amendment request.

The Harris Nuclear Plant (HNP) is designed with four SFPs. The four pools are divided into two complexes. The pools are identified as follows:

- New Fuel Pool Unit 1 (Pool A)
- Spent Fuel Pool Unit 1 (Pool B)
- Spent Fuel Pool Unit 2 (Pool C)
- Spent Fuel Pool Unit 2 (Pool D)

SFPs A and B (the south pool complex), are located in the south end of the Fuel Handling Building (FHB). SFPs C and D (the north pool complex), are located on the north end of the FHB. A system of transfer canals connects the four pools and a Cask Loading Pool. During refueling, spent fuel recently discharged from HNP is stored in SFPs A and B. SFPs A, B, and C contain a combination of pressurized water reactor (PWR) and boiling water reactor (BWR) fuel storage racks. SFP D will contain PWR fuel storage racks as needed.

The Fuel Pool Cooling and Cleanup System (FPCCS) serves both pool complexes. Each pool complex has related cooling, purification and skimmer subsystems. The FPCCS subsystems for SFPs C and D were completed as part of the activation of SFPs C and D. Each pool complex has a dedicated cooling system, which are independent from each other. Each cooling system consists of two redundant cooling loops. Each loop consists of a heat exchanger, cooling pump, strainer and associated piping. Each cooling loop has a piping connection to both pools in the complex as shown in Table A1-1. Two cooling trains are provided for each complex; a single cooling train is sufficient to remove all of the decay heat in the pool complex during normal operation. The two cooling pumps for a pool complex are powered from separate safety-related electric buses; these buses are powered from an emergency diesel generator in the event of the interruption of the normal power source. The cooling systems are Safety Class 3, Seismic Category I systems.

Table A1-1
FPCCS Pump Arrangement

Pump	Pools in Flow Path	Safety-Related Power Supply
1&4A	A and/or B	A Train
1&4B	A and/or B	B Train
2&3A	C and/or D	A Train
2&3B	C and/or D	B Train

Each pool complex has a purification subsystem and skimmer subsystem. There are crossties between the purification loops. The purification subsystem for a pool complex is composed of two purification pumps, two filters, a demineralizer and associated piping with cross-ties between the purification subsystems. The skimmer subsystem consists of two trains. Each skimmer train contains a strainer, pump and filter. The two skimmer trains share a common suction and discharge header, which provides a flow path from service connections in each pool and the transfer canals. The purification and skimmer subsystems are non-safety-related.

Further description of the FPCCS is provided in FSAR Section 9.1.3.

The CCW system removes the heat from the SFP heat exchangers. The CCW system is an intermediate cooling loop, which removes heat from safety-related and non-safety-related components during all plant operating conditions. The CCW system is utilized to prevent the direct leakage of radioactivity from nuclear support systems in the plant to the environment, and to prevent the ingress of chlorides and other corrosives into components to which these chemicals could be harmful. The CCW system is used as part of the Emergency Core Cooling System (ECCS) to remove heat from water being recirculated from the Containment Building sump to the reactor, and provides cooling water to the low head safety injection pumps (Residual Heat Removal pumps).

The CCW system is designed to operate during all phases of plant operations including startup, power operation, shutdown, refueling, loss of off-site power (LOOP), and the injection and recirculation phases of ECCS operation. During normal operation, usually only one CCW pump is operating, but a second pump from the other train will automatically start on low CCW system pressure or a safety injection signal.

The CCW system consists of two safety-related trains and a common header. Cross-connect valves between the safety-related trains allow separation of the safety-related trains during design basis events. During normal operation, the cross-connect valves are open and the operating train provides flow to a common header, which supplies the SFP heat exchangers. CCW is normally supplied to two of the four spent fuel pool heat exchangers (one from each pool complex) during normal operation. Switching the CCW between trains of SFP cooling requires local manual operation.

Further information on the CCW system, including a description of the higher capacity CCW pump impellers installed as part of the power uprate, is provided in FSAR Section 9.2.2.

Technical Analysis

The increase in SFPs C and D heat load and the increase in the normal operating SFP temperature are discussed in four parts:

1. Impact of the higher SFP heat load on the CCW system performance
2. Impact of the higher SFP heat load on the equilibrium SFP temperature
3. SFP Makeup Requirements
4. Impacts of operating with a higher SFP temperature

The higher heat loads and higher SFP temperatures are acceptable based on the satisfactory results of each of the individual analyses.

CCW System Performance

The impact of the higher SFP heat load on the performance of the CCW system was analyzed using bounding heat load values in the following calculations:

- CCW supply temperature for each mode of CCW operation
- CCW performance during a LOCA
- Reactor Coolant System (RCS) cooldown time when on Residual Heat Removal System (RHR or RHRS)
- Analysis of the Ultimate Heat Sink (UHS) during a LOCA
- CCW flow balance for each mode of CCW operation

With the exception of the RCS cooldown time and the CCW flow balance, the current FSAR analyses include sufficient design margin to allow SFPs C and D heat load to be increased to 7.0 MBTU/hr. New FSAR analyses for RCS cooldown time and CCW flow balance were prepared.

A CCW input to the RCS cooldown calculation was revised. The maximum CCW supply temperature was increased from 120°F to 125°F. This CCW temperature increase reduces the time required for the RCS cooldown from 350°F to 200°F. The limiting case calculated uses the following inputs:

- A single RCP in operation
- A single cooldown train in operation
- A maximum CCW supply temperature of 125°F
- A composite SFP heat load of 27.0 MBTU/hr

With these inputs, the total calculated duration of the cooldown from Hot Standby to Cold Shutdown decreased. The cooldown times used in PUR/SGR analyses remain bounding.

Increasing the SFPs C and D heat load requires additional CCW flow to 2&3 A and 2&3 B heat exchangers. The flow balance between the spent fuel heat exchangers for SFPs A and B and SFPs C and D is being changed to provide more cooling flow to SFPs C and D and a reduction in flow to the SFPs Aand B heat exchangers. The impact of the change in the flow to components other than the spent fuel pool heat exchangers has been calculated. CCW flow is satisfactory for equipment performance as described in the following section.

It is important to note that these events were evaluated using a service water supply temperature of 95°F, which is slightly higher (thus more conservative) than the Technical Specification limit of 94°F (TS 3.7.5.b). The Technical Specification limit ensures that the maximum service water supply temperature at the beginning of design basis events remains ≤ 95°F. No change in the service water system flow balance, therefore, is required as a result of the proposed license amendment.

The analyses of CCW supply temperature for each mode of CCW operation were used in calculating the SFP equilibrium temperature.

SFP Equilibrium Temperatures

Analyses were performed to determine the impact of the higher SFP heat load on the equilibrium SFP temperatures assumed in the following conditions:

- Incore Shuffle
- Normal Full Core Offload
- Post Outage Full Core Offload (Emergency Core Offload)
- Normal Operations
- RCS Cooldown

Table A1-2 shows the previously analyzed heat loads and Table A1-3 shows the heat loads analyzed for this license amendment request.

Table A1-2
Existing Analysis

Operating Condition	SFP A/B Heat Load (MBTU/hr)	SFP C/D Heat Load (MBTU/hr)
Incore Shuffle	22.17	1.0
Normal Full Core Offload	40.56	1.0
Emergency Core Offload	42.46	1.0
Normal Operations	16.45	1.0
RCS Cooldown	16.45	1.0

Table A1-3
License Amendment Analysis

Operating Condition	SFP A/B Heat Load (MBTU/hr)	SFP C/D Heat Load (MBTU/hr)
Incore Shuffle	22.17	7.0
Normal Full Core Offload	40.56	7.0
Emergency Core Offload	46.23	7.0
Normal Operations	18.31	7.0
RCS Cooldown	18.31	7.0

The SFPs A and B heat loads were calculated using a method that is consistent with NRC Standard Review Plan (SRP) 9.1.3. The analyzed heat load for SFPs A and B increased from 16.45 MBTU/hr to 18.31 MBTU/hr to allow for a refueling outage as short as 15 days and to provide additional heat storage capacity in the SFPs A and B. The heat load increase in SFPs A and B for the Emergency Core Offload case was due to a more conservative calculation of the decay heat for the discharged core used in that specific case. Table A1-4 presents the acceptance criteria previously applied to the different cases and Progress Energy Carolinas, Inc.'s (alternately known as Carolina Power & Light Company) proposed changes.

Table A1-4
Spent Fuel Pool Temperatures

Operating Condition	Existing HNP Acceptance Criteria (°F)	Proposed HNP Acceptance Criteria (°F)
Incore Shuffle	140	150
Normal Full Core Offload	140	150
Emergency Core Offload	150	150
Normal Operations	140	150
RCS Cooldown	140	150
LOCA	150	160

To determine the required maximum SFP operating temperature, the calculations assumed that only one train of CCW and one train of SFP Cooling were operating in all of the cases except Emergency Core Offload. SRP 9.1.3 allows the Emergency Core Offload case to assume two trains of cooling are operable.

The calculations assume that the FPCCS removes all of the decay heat. Conservatively, evaporation or transmission of heat through the FHB structure is ignored, as well as the thermal inertia of the SFP water mass, fuel rack mass and fuel mass. Neglecting thermal inertia provides additional conservatism in the calculation of the SFP bulk temperatures occurring during the RCS cooldown because the cooldown duration is approximately 24 hours.

SFP Makeup Rates

Table A1-5 presents the results of calculations for the required makeup rates for the heat load cases. The makeup rates use the heat loads from Table A1-2 and use a makeup source temperature of 125°F. This assumed makeup source temperature is conservative because it bounds the Technical Specification 3.7.5.b limit for the Ultimate Heat Sink of 94 °F and the Technical Specification 3.5.4.d limit for the Refueling Water Storage Tank of 125°F. The Emergency Service Water system, which takes water from the Ultimate Heat Sink and the RWST, are two possible sources of makeup to the SFP.

Table A1-5
Required Makeup Rates

Case	SFP A/B (gpm)	SFP C/D (gpm)	Total (gpm)
Normal Operations	35.0	13.4	48.4
In-Core Shuffle	42.4	13.4	55.8
Normal Full Core Offload	77.6	13.4	91.0
Emergency Core Offload	88.4	13.4	101.8

The total makeup requirements conservatively assume both FPCCS cooling subsystems are simultaneously impacted. The total makeup rates listed are within the makeup capabilities of systems available to makeup water to the SFP.

Operation with Higher SFP Temperatures

The purpose of this section is to demonstrate that the SFP structure and liner are capable of satisfactory operation with the higher SFP temperatures. In addition, this section demonstrates that the impacts of the higher ambient conditions in the FHB are acceptable. This section is divided into the following subsections:

- FPCCS design
- SFP design
- Ambient temperature
- FHB Humidity
- SFP cooling restoration following a design basis LOCA

<u>FPCCS Design</u>
The design temperature of the FPCCS components is 200°F. The thermal loads on piping and hangers were calculated based on a SFP temperature of 150°F. Analyses of piping and hanger stresses indicate that minor modifications are required for three FPCCS hangers prior to implementing this license amendment. The modifications involve adding material so that the stresses are within allowable values. These modifications will be accomplished before implementing the license amendment. The higher pool temperature for normal operations requires the addition of procedural controls to remove the purification demineralizers from service when pool temperatures exceed 140°F. This procedural change will be added prior to implementation of the license amendment. With these minor modifications and procedural controls, the mechanical and structural design of the FPCCS remains acceptable with the proposed license amendment.

<u>SFP Design</u>
The Spent Fuel Pools are an integral part of the Fuel Handling Building (FHB) structure. The FHB is designed and constructed as Seismic Category I. A stainless steel liner is attached to the inside surface of the pools. The liner is a non-ASME Code boundary. The existing design temperature of the SFP structure is based on a liner temperature of 150°F. As part of the analysis for this license amendment, the SFP structure and liner were re-evaluated for a pool temperature of 160°F to account for the new LOCA acceptance criteria. The evaluation concluded that adequate design margin existed to allow for the higher liner temperature without exceeding allowable stresses.

<u>Ambient Temperature</u>
The only FHB ambient temperature in the FSAR calculated to rise because of the higher SFP water temperature of 150°F was the SFP Pump and Heat Exchanger Room (FSAR Figure 3.11B-13, FH21, Zone A), which was calculated to increase from 104°F to 115.5°F. The impacts on safety-related equipment in the affected space have been evaluated and found to be acceptable with the higher temperature.

<u>FHB Humidity</u>
The FHB operating floor (Elev. 286' and connected spaces) is serviced by the FHB Emergency Exhaust System on detection of high radiation in the FHB. The system isolates the operating floor envelope and initiates flow through a safety-related filter train (refer to FSAR Section 6.5.1.1). This filter system is designed to limit the offsite doses in the event of a postulated fuel handling accident in the FHB.

Each filtration unit contains a safety-related electric heater to control the relative humidity through the charcoal filter section. Analysis shows that the heater capacity is satisfactory for the humidity that would exist if all the pool and transfer canal surfaces were at 150°F. A fuel handling accident concurrent with the SFP heat up following a LOCA was not analyzed because the plant licensing basis does not require consideration of the simultaneous occurrence of these two unlikely events.

Due to the ample capacity of the heater system to handle the additional humidity and since the environmental qualification of affected safety-related equipment is based on 100% humidity in the FHB; therefore, it is concluded that the humidity from operating the SFPs at a higher temperatures is acceptable.

<u>SFP cooling restoration following a LOCA</u>
As described in FSAR Section 9.1.3.3, the CCW flow to the common header is isolated during the start of ECCS recirculation operation following a LOCA. The long-term containment analysis for the LOCA uses the assumption that the common header remains isolated until five hours after the LOCA or until the containment sump is ≤ 200°F.

The method of restoration of the CCW flow remains unchanged from the existing practice described in FSAR Section 9.1.3.3.

Table A1-6(b) lists the analyzed time to heat up from the maximum pool bulk temperature for normal operations to 150°F, 160°F and 212°F, respectively. The pool heatup rates are based on the "Normal Operations" heat loads listed in Table A1-3. The corresponding data for the existing design is presented in Table A1-6(a).

Table A1-6(a)
Existing Analysis

Pool	Maximum Normal Operating Temperature (°F)	Pool Heatup Rate (°F/hr)	Time to 150°F(hr)	Time to 160°F (hr)	Time to boil (hr)
SFP A/B	123.5	4.3	6.2	N/A	20.6
SFP C/D	105	0.33	138.5	N/A	322.3

Table A1-6(b)
License Amendment Analysis

Pool	Maximum Normal Operating Temperature (°F)	Pool Heatup Rate (°F/hr)	Time to 150°F(hr)	Time to 160°F (hr)	Time to boil (hr)
SFP A/B	125.7	4.73	5.1	7.2	18.2
SFP C/D	123.1	2.53	10.6	14.5	35.1

Due to the heat load in SFPs A and B, that pool complex is the limiting location. The values presented in Tables A1-6(a) and (b) contain several conservatisms in the inputs for the calculated heatup times. In particular:

- The SFP heat load is based on the beginning of core life
- The CCW supply temperatures are based on a SFP composite heat load which bounds the proposed composite heat load
- The performance of the FPCCS is conservatively modeled
- The water volumes assumed as part of the thermal inertia are conservatively low
- The thermal mass of the fuel, fuel rack and SFP structure is neglected

The proposed heat load increase for this license amendment necessarily causes the time to boil values to decrease. However, the time to boil values for the proposed heat loads remains bounded by the Probabilistic Safety Analysis that was performed by Progress Energy Carolinas, Inc. for SFPs C and D activation.

The time available to perform the restoration of cooling to the SFPs after a LOCA is conservatively calculated and provides sufficient time for the required operator actions to be implemented. The method used to restore forced cooling of the Spent Fuel Pool has not changed. Therefore, the increase in the SFPs C and D heat load results in acceptable time available for restoration of CCW to FPCCS for LOCA.

Conclusion

Based on the analyses and evaluations of the proposed changes it is acceptable to:

1. Increase the SFPs C and D heat load to 7.0 MBTU/hr
2. Establish 150°F as the maximum operating SFP temperature for non-accident scenarios and 160°F as the maximum operating SFP temperature for a LOCA

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10 CFR 50.92 EVALUATION

A written evaluation of the significant hazards consideration of a proposed license amendment is required by 10 CFR 50.92. Progress Energy Carolinas, Inc. (alternately known as Carolina Power & Light Company) has evaluated the proposed amendment and determined that it involves no significant hazards consideration. According to 10 CFR 50.92, a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety

The basis for this determination is as follows:

Proposed Change

The change involves an increase in the maximum decay heat of spent fuel stored in Spent Fuel Pools (SFPs) C and D from 1.0 MBTU/hr to 7.0 MBTU/hr, and an increase in the allowable SFP temperatures.

Basis

This change does not involve a significant hazards consideration for the following reasons:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The license amendment only increases the heat load from the Fuel Pool Cooling and Cleanup System (FPCCS) and the maximum allowable pool temperature. The changes do not modify the design of Structures, Systems and Components (SSCs) that could initiate an accident. The FHB Emergency Exhaust System mitigates the consequences of a fuel handling accident in the Fuel Handling Building. This system has been evaluated for the conditions that would exist with the higher SFP temperatures and it was found that there would be no decrease in the charcoal efficiency. As a result, there was no increase in the doses from the fuel handling accident in the FHB. Therefore, the change does not result in any increase in the probability or consequences in any accident previously analyzed.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The increase in the SFP decay heat load and the SFP temperature limit does not involve new plant components or procedures. No significant impact on any postulated accident is made due to this change since the required cooling capacity is maintained to the SFPs and the FPCCS, and the SFPs will operate within design parameters.

For the activation of SFPs C and D, Progress Energy Carolinas, Inc. performed a Probabilistic Safety Analysis (PSA) of a total loss of SFP forced cooling. That analysis concluded that the probability of spent fuel rack uncovery was not credible. That analysis remains bounding for this license amendment application.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in the margin of safety.

The proposed changes do not affect the design or operation of the barriers to fission product release (fuel cladding, reactor coolant system pressure boundary, and containment boundary). The change in the SFPs C and D decay heat load is bounded by the heat load used in the analysis of the safety-related systems for design basis accidents. Therefore, there is no impact in the margin of safety.

Based on these considerations, the proposed change does not involve a significant reduction on the margin of safety.

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ENVIRONMENTAL EVALUATION (10 CFR 51.22)

10 CFR 51.22(c)(9) provides criterion for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (3) result in a significant increase in individual or cumulative occupational radiation exposure. Progress Energy Carolinas, Inc. (alternately known as Carolina Power & Light Company) has reviewed this amendment request and determined the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). In addition, the proposed license amendment is completely consistent with the extensive environmental analyses performed by the NRC Staff and Progress Energy Carolinas, Inc. in support of Amendment 103, which the Commission and Court of Appeals found fully compliant with all applicable environmental requirements.

Pursuant to 10 CFR 51.22(b), therefore, no environmental assessment or environmental impact statement needs to be prepared in connection with the issuance of the amendment. The basis for this determination is as follows:

Proposed Change

The change involves an increase in the decay heat of spent fuel stored in Spent Fuel Pools (SFPs) C and D from 1.0 MBTU/hr to 7.0 MBTU/hr. However, it does not authorize an increase in the HNP SFPs A, B, C and D capacity as set forth in Technical Specification 5.6.3.a, b, and c.

Basis

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in Attachment 2, the proposed amendment does not involve a significant hazards consideration.

2. The proposed amendment does not result in significant change in the types or increase in the amounts of any effluents that may be released offsite.

   The change does not introduce any new effluents. The routine effluents from HNP include a component from the purification and pool skimmer system that serves SFPs

C and D. The flow rate of the skimmer system is independent of the heat load in the SFPs; therefore, there is no significant increase in the effluents from the plant as a result of the change.

3. The proposed amendment does not result in a significant increase in individual or cumulative occupational radiation exposure.

   The change does not create any physical changes in the Fuel Pool Cooling and Cleanup System (FPCCS) or SFPs C and D. Personnel are shielded from the radiation by the water over the fuel assemblies and the thick concrete floors and walls that separate a pool from accessible areas.

   For the activation of SFPs C and D, Progress Energy Carolinas, Inc. performed a Probabilistic Safety Analysis (PSA) of the total loss of SFP forced cooling. That analysis concluded that the probability of spent fuel rack uncovery was not credible. That analysis remains bounding for this license amendment application.

   There are no new surveillances that require entry into radiation controlled areas. Therefore, the amendment has no significant affect on either individual or cumulative occupational radiation exposure.

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PROPOSED TECHNICAL SPECIFICATION CHANGE

5.6.3.b Pool "C" is designed to contain a combination of PWR and BWR assemblies. Pool "C" can contain two (11 x 9 cell) and nine (9 X 9 cell) PWR racks for storage of 927 PWR assemblies. Pool "C" can contain two (8 x 13 cell), two (8 x 11 cell), six (13 x 11 cell), and nine (13 x 13 cell) BWR racks for storage of 2763 BWR assemblies The (9 x 9 cell) PWR racks and the (13 x 13 cell) BWR racks are dimensioned to allow interchangeability between PWR or BWR storage rack styles as required The racks in pool "C" will be installed as needed.

5.6.3.c Pool "D" contains a variable number of PWR storage spaces These racks will be installed as needed. Pool "D" is designed for a maximum storage capacity of 1025 PWR assemblies.

5.6.3.d The heat load from fuel stored in Pools "C" and "D" shall not exceed Delete → 1.0 MBtu/hr. 7.0 – Add

Delete

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.

Delete

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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TECHNICAL SPECIFICATION 5.6.3.d

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5.6.3.b Pool "C" is designed to contain a combination of PWR and BWR assemblies. Pool "C" can contain two (11 x 9 cell) and nine (9 X 9 cell) PWR racks for storage of 927 PWR assemblies. Pool "C" can contain two (8 x 13 cell), two (8 x 11 cell), six (13 x 11 cell), and nine (13 x 13 cell) BWR racks for storage of 2763 BWR assemblies. The (9 x 9 cell) PWR racks and the (13 x 13 cell) BWR racks are dimensioned to allow interchangeability between PWR or BWR storage rack styles as required. The racks in pool "C" will be installed as needed.

5.6.3.c Pool "D" contains a variable number of PWR storage spaces. These racks will be installed as needed. Pool "D" is designed for a maximum storage capacity of 1025 PWR assemblies.

5.6.3.d The heat load from fuel stored in Pools "C" and "D" shall not exceed 7.0 MBtu/hr.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.