November 8, 2007

Mr. J. R. Morris
Site Vice President
Catawba Nuclear Station
Duke Power Company LLC
4800 Concord Road
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2, ISSUANCE OF AMENDMENTS REGARDING EMERGENCY CORE COOLING SYSTEM STRAINER MODIFICATION (TAC NOS. MD5163 AND MD5164)

Dear Mr. Morris:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 238 to Renewed Facility Operating License NPF-35 and Amendment No. 234 to Renewed Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated March 29, 2007, as supplemented September 7, 2007, October 9 and October 12, 2007.

The amendments revise the Catawba 1 and 2, TS 3.5.2.8, and authorize changes to the updated final safety analysis report concerning modifications to the emergency core cooling system sump.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

John Stang, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosures:
1. Amendment No. 238 to NPF-35
2. Amendment No. 234 to NPF-52
3. Safety Evaluation

cc w/encls: See next page

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Amendment No.: ML073020585
Tech Spec No.: ML073180313

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	OGC	NRR/SRXB/BC	NRR/DORL/DD
NAME	JStang:nc	MO'Brien	EWilliams NLO	GCranston	TMcGinty
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DUKE POWER COMPANY LLC

NORTH CAROLINA ELECTRIC MEMBERSHIP CORPORATION

SALUDA RIVER ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-413

CATAWBA NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 238
Renewed License No. NPF-35

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Catawba Nuclear Station, Unit 1 (the facility) Renewed Facility Operating License No. NPF-35 filed by the Duke Power Company LLC, acting for itself, North Carolina Electric Membership Corporation and Saluda River Electric Cooperative, Inc. (licensees), dated March 29, 2007, as supplemented September 7, 2007, October 9 and October 12, 2007, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-35 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 238, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. Further, Facility Operating License No. NPF-35 is hereby amended to authorize a change to the Updated Final Safety Analysis Report (UFSAR) to allow modifications to the emergency core cooling system sump, as set forth in the license amendment application dated March 29, 2007, as supplemented September 7, 2007, October 9 and October 12, 2007, and evaluated in the safety evaluation dated November 8, 2007. The licensee shall update the UFSAR by adding a description of this change, as authorized by this amendment, and in accordance with 10 CFR 50.71(e).

4. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Evangelos C. Marinos, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-35
and the Technical Specifications

Date of Issuance: November 8, 2007

DUKE POWER COMPANY LLC

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1

PIEDMONT MUNICIPAL POWER AGENCY

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 234
Renewed License No. NPF-52

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Catawba Nuclear Station, Unit 2 (the facility) Renewed Facility Operating License No. NPF-52 filed by the Duke Power Company LLC, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated March 29, 2007, as supplemented September 7, 2007, October 9 and October 12, 2007, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (I) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-52 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 234, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. Further, Facility Operating License No. NPF-52 is hereby amended to authorize a change to the Updated Final Safety Analysis Report (UFSAR) to allow modifications to the emergency core cooling system sump, as set forth in the license amendment application dated March 29, 2007, as supplemented September 7, 2007, October 9 and October 12, 2007, and evaluated in the safety evaluation dated November 8, 2007. The licensee shall update the UFSAR by adding a description of this change, as authorized by this amendment, and in accordance with 10 CFR 50.71(e).

4. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Evangelos C. Marinos, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-52
and the Technical Specifications

Date of Issuance: November 8, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 238

RENEWED FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND LICENSE AMENDMENT NO. 234

RENEWED FACILITY OPERATING LICENSE NO. NPF-52

DOCKET NO. 50-414

Replace the following pages of the Renewed Facility Operating Licenses and the Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
License Pages	License Pages
NPF-35 page 4	NPF-35 page 4
NPF-52 page 4	NPF-52 page 4
TSs	TSs
3.5.2-3	3.5.2-3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 238 TO RENEWED FACILITY OPERATING LICENSE NPF-35

AND

AMENDMENT NO. 234 TO RENEWED FACILITY OPERATING LICENSE NPF-52

DUKE POWER COMPANY LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

By application dated March 29, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071020044), as supplemented by letters dated September 7 (ADAMS Accession No. ML072620105), October 9 (ADAMS Accession No. ML072850016), and October 12, 2007 (ADAMS Accession No. ML072900255), Duke Power Company LLC (Duke, the licensee), requested changes to the Technical Specifications (TSs) for the Catawba Nuclear Station, Units 1 and 2 (Catawba 1 and 2). The supplements dated September 7, October 9, and October 12, 2007, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published the *Federal Register* on August 13, 2007 (72 FR 45274).

The proposed changes would revise the Catawba 1 and 2, TS 3.5.2.8, and authorize changes to the Updated Final Safety Analysis Report (UFSAR) concerning modifications to the emergency core cooling system (ECCS) sump. The licensee indicated that the proposed changes are intended to modify the UFSAR and TS to be consistent with modifications to the ECCS containment sump strainer assemblies. The licensee stated that the containment sump modifications are being performed to address concerns associated with Generic Safety Issue 191 (GSI-191), "Assessment of Debris Accumulation on PWR [Pressurized Water Reactor] Sump Performance."

The specific changes proposed by the licensee are as follows:

(1) Modification to the licensing basis for the containment sumps, as described in the Catawba 1 and 2 UFSAR, by revising commitments to Regulatory Guide (RG)1.82, Revision 0, "Sumps for Emergency Core Cooling and Containment Spray Systems." Among the changes proposed by the licensee are the following:

a. deletion of the requirement that two physically separated containment sumps must be maintained,
b. elimination of the requirement for trash racks not the trash rack function, and
c. modification of the required strainer inspection scope.

(2) Modification to Catawba 1 and 2 TS Surveillance Requirement (SR) 3.5.2.8. The primary purposes of the licensee's revision to SR 3.5.2.8 are to reflect that the replacement sump configuration does not include trash racks and to reflect that this surveillance inspection is not required to cover 100 percent of the replacement strainer surface area.

2.0 REGULATORY EVALUATION

The licensee has proposed changes to the Catawba 1 and 2 UFSAR and TS that relate to the design of the ECCS containment sump and the periodic inspection of the sump and its strainers. Regulatory and licensing requirements pertaining to the requested amendment concerning the ECCS containment sump and associated systems (e.g., the ECCS and containment spray system) include the following:

- Paragraph (d)(3) of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.36, "Technical Specifications," states that surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. LCO 3.5.2 of Catawba Units 1 and 2 TSs 3.5, "EMERGENCY CORE COOLING SYSTEMS (ECCS)," states that two ECCS trains shall be OPERABLE. Subsection 1.1 "Definitions" of Catawba Units 1 and 2 Technical Specifications defines OPERABLE: A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

- Paragraph (b)(5) of 10 CFR 50.46, states that after any calculated successful initial operation of the ECCS, the calculated core temperature shall be maintained at an acceptably low value and decay heat shall be removed for the extended period of time required by the long-lived radioactivity remaining in the core.

- Paragraph (d) of 10 CFR 50.46, states, in part the criteria set forth in paragraph (b), with cooling performance calculated in accordance with an acceptable evaluation model, are in implementation of the general requirements with respect to ECCS cooling

performance design set forth in this part, including in particular Appendix A to 10 CFR Part 50 General Design Criteria (GDC) Number 35, "Emergency core cooling,"

- GDC 35 states that a system to provide abundant emergency core cooling shall be provided. The system safety function shall be to transfer heat from the reactor core following any loss of reactor coolant at a rate such that (1) fuel and clad damage that could interfere with continued effective core cooling is prevented, and (2) clad metal-water reaction is limited to negligible amounts. Suitable redundancy in components and features, and suitable interconnections, leak detection, isolation, and containment capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation

- (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

- GDC 36, "Inspection of emergency core cooling system," states that the emergency core cooling system shall be designed to permit appropriate periodic inspection of important components, such as spray rings in the reactor pressure vessel, water injection nozzles, and piping, to assure the integrity and capability of the system.

- GDC 38, "Containment heat removal," states that a system to remove heat from the reactor containment shall be provided. The system safety function shall be to reduce rapidly, consistent with the functioning of other associated systems, the containment pressure and temperature following any loss-of-coolant accident and maintain them at acceptably low levels. Suitable redundancy in components and features, and suitable interconnections, leak detection, isolation, and containment capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

- GDC 39, "Inspection of containment heat removal system," states that the containment heat removal system shall be designed to permit appropriate periodic inspection of important components, such as the torus, sumps, spray nozzles, and piping to assure the integrity and capability of the system.

RG 1.82 describes a method that is acceptable to the NRC staff for implementing these requirements with respect to the sumps and pools that serve as water sources for the emergency core cooling, containment heat removal, or containment atmosphere clean-up. RG 1.82 has been revised to incorporate guidance found in NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors." Supplemental guidance specific to debris blockage can also be found in Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors."

This safety evaluation (SE) establishes that, in light of the proposed exceptions to Revision 0 to RG 1.82, the licensee remains in compliance with the acceptance criteria identified above and updates the licensing basis.

As described in the Catawba 1 and 2 UFSAR, with several plant-specific exceptions noted below

in Section 4.1, the licensee committed to design the Catawba 1 and 2 ECCS sump in conformance with the guidelines in RG 1.82, Revision 0. At the time of Catawba 1 and 2 initial licensing, RG 1.82, Revision 0, described a method acceptable to the NRC staff for implementing regulatory requirements concerning containment recirculation sumps, as well as long-term emergency core cooling, containment heat removal, and containment atmosphere clean-up. Although RG 1.82 has been revised several times since 1974 (the current version is Revision 3, entitled "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident"), these later revisions were not generically backfit on operating plants. Catawba 1 and 2 is still committed to Revision 0. As described subsequently in further detail, this safety evaluation reviews the licensee's request to revise existing commitments in the Catawba 1 and 2 UFSAR that the sump design conform to the following regulatory positions in

RG 1.82, Revision 0: C.1, C.2, C.3, C.4, C.6, C.7, C.8, C.9, C.10, C.12, C.13, and C.14.[1]

The basis for PWR licensees to demonstrate compliance with the above regulatory requirements and commitments is documented in GL 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors." The primary purpose of GL 2004-02 was to request that PWR licensees evaluate the performance of their containment recirculation sumps and implement any modifications necessary to assure compliance with applicable regulatory requirements on a mechanistic basis in light of the technical issues associated with GSI-191. The GL requested that PWR licensees complete actions necessary to assure compliance with applicable regulatory requirements using the updated information associated with GSI-191 by December 31, 2007. Prior to this date, GL 2004-02 concluded that licensees' compliance with their current licensing bases was sufficient to support continued plant operation.

In light of the regulatory framework established by GL 2004-02, this SE reviews the licensee's proposed TS and licensing basis changes under current licensing basis assumptions for analyzing the effects of post-accident debris blockage. Assurance that PWR licensees' proposed sump modifications are adequate in light of the technical issues associated with GSI-191 will be provided separately through the NRC staff's review of GL 2004-02 supplemental responses.

3.0 BACKGROUND

The licensee stated that the Catawba 1 and 2 ECCS containment sumps provide a long-term source of cooling water to the ECCS and containment spray system (CSS). The ECCS containment sump strainer also removes debris from the cooling water source to prevent loss of the ECCS and CSS functions due to debris ingestion. The lowest floor in the containment building is considered to be the ECCS containment sump (i.e., there are no pits or depressions in the containment floor for collecting water for recirculation cooling). Following a loss-of-coolant accident (LOCA), the ECCS containment sump collects ice condenser melt, spillage from the break in the reactor coolant system, and containment spray water. This collected water is then supplied for cooling the reactor core and containment in the recirculation mode of ECCS/CSS. Two suction lines (the ECCS recirculation lines) are provided. Each ECCS recirculation line supplies one train of ECCS/CSS. The licensee stated that prior to reaching the sump, all debris-laden water collected in the lower containment must pass through eight-inch penetrations in the polar crane wall located near the containment floor level.

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1 As noted in Section 4.1, Catawba is currently committed to plant-specific versions of positions C.4, C.6, and C.7.

The licensee stated that the existing sump design consists of stainless steel framing that provides a structure for attaching the stainless steel fine mesh inner screen and the outer trash rack grating. A removable solid top deck is provided to facilitate inspection of the sump structure and pump suction intake. The sump structure provides debris protection for each of two train-specific suction pipes. The sump screen has a surface area of approximately 135 square feet.

The licensee stated that the planned replacement strainer modification will remove the existing ECCS sump structure described above and replace it with strainer assemblies consisting of tubular modules (top hats) made of stainless steel. Each top-hat module has two layers of perforated plate for straining debris from the sump water. The licensee stated that the strainer design was developed in accordance with Nuclear Energy Institute (NEI) 04-07, "Pressurized Water Reactor Sump Performance Evaluation Methodology," Revision 0, guidance for analyzing recirculation sump performance. The licensee stated that the diameter of the openings in the

perforated plate will not exceed 3/32 inch. The ECCS recirculation lines will be connected to the main plenum of the strainer assembly using 18-inch piping. Horizontal grating will be installed above the top-hat strainer assemblies for vortex suppression.

The licensee stated that the planned replacement strainers will be installed entirely inside the pipe chase outside the polar crane wall. The licensee stated that there are no pipe whip or water/steam jet loads projected to occur within the Catawba 1 or 2 pipe chase. These passive replacement strainers are nuclear safety-related, Quality Assurance Condition 1 assemblies designed to withstand safe shutdown earthquake loadings, and they have been qualified for all design environmental conditions in the sump. The objective of the new strainer design is to provide adequate flow with acceptable head loss at the specified debris loads and to ensure sufficient net positive suction head (NPSH) to the ECCS and CSS pumps during the recirculation phase of a LOCA, while limiting debris ingestion to that which will not result in loss of the ECCS or CSS functions. The new strainer offers approximately 2000 square feet of surface area as compared to the existing sump screen configuration which has a surface area of 135 square feet.

4.0 TECHNICAL EVALUATION

The NRC staff has evaluated the licensee's analysis in support of the proposed license amendment, which is contained in the licensee's application and supplementary submittals. The NRC staff's evaluation below reviews both (1) the licensee's proposed UFSAR modification to revise existing sump design commitments that are based on criteria in RG 1.82, Revision 0, and (2) the licensee's proposed modification to the containment sump surveillance inspection prescribed by SR 3.5.2.8.

4.1 Proposed Revisions to Commitments to RG 1.82 Design Criteria

Chapter 1.7 of the Catawba 1 and 2 UFSAR contains the licensee's positions on NRC RGs applicable to power reactors. The discussion therein indicates that the licensee has committed fully to satisfy 11 of the 14 design criteria in RG 1.82, Revision 0. With respect to the remaining three criteria (C.4, C.6, and C.7), the licensee committed to modified plant-specific criteria that are consistent with the intent of those in RG 1.82, Revision 0.

As described in detail below, the licensee is proposing to take exceptions to 12 of the 14 design criteria to which Catawba is currently committed in Chapter 1.7 of the UFSAR. The discussion below addresses each exception, providing the sump design criterion to which Catawba is committed, the licensee's proposed criterion, and the NRC staff's evaluation of the proposed change.

4.1.1 Criterion C.1

A minimum of two sumps should be provided, each with sufficient capacity to serve one of the redundant halves of the ECCS and CSS systems.

Licensee's Proposed Criterion Commitment

Catawba 1 and 2 will utilize the containment side structure and floor as the intake structure boundary since an acceptable post-LOCA water level in the containment is achievable. Thus, making additional sump depressions in the floor is non-productive. Redundance will be provided by two separate suction pipes.

RG 1.82 recommends providing two sumps to establish clear compliance with GDC 35, which requires suitable mitigation capability for a LOCA, assuming a single failure. This recommendation is consistent with the guidance provided in Chapter 6.3 of the Standard Review Plan, NUREG-0800, which states that "[t]he ECCS should retain its capability to cool the core in the event of a failure of any single active component during the short term immediately following an accident, or a single active or passive failure during the long-term recirculation cooling phase following an accident." Chapter 6.3 of the Catawba UFSAR indicates that analogous short- and long-term single-failure requirements are within the current licensing basis for Catawba 1and 2.

In its application, the licensee stated that suitable ECCS redundancy is provided by two separate suction pipes drawing suction from a single, shared strainer if it can be shown that the shared passive strainer is not susceptible to a credible single failure that would result in the loss of both trains of ECCS or CSS. The licensee pointed out that this viewpoint is consistent with the previously approved NRC staff's position documented in SECY-77-439 (ADAMS Accession No. 7812180291). SECY-77-439 states that during the long-term cooling ECCS recirculation cooling mode the most limiting active failure or a single passive failure equal to the leakage that would occur from a valve or a pump seal failure is assumed. In the application, the licensee also stated other passive failures (pipe or valve breaks) have an acceptably low likelihood of occurrence during the long-term phase of a LOCA. The licensee also indicated in the application that additional support is provided for this position by the following statement in RG 1.82, Revision 3, "Consistent with the plant licensing basis single-failure criterion, redundant ECCS sumps and sump outlets should be separated to the extent practical to reduce the possibility that a single event could render both sumps inoperable."

To justify that the replacement sump strainer assemblies are not susceptible to a credible passive single failure, the licensee argued that the replacement strainers are not vulnerable to failure mechanisms arising from (1) the dynamic effects of piping ruptures and structural loadings, (2) inadvertent latent damage from maintenance work or other activities in containment, and (3) the effects of post-accident debris.

The licensee's application describes the location of the passive replacement strainer assemblies and discusses the licensee's basis for concluding that these assemblies are adequately protected from dynamic effects from piping ruptures and have been adequately designed to accommodate expected structural loads.

The licensee reviewed postulated high energy pipe breaks that could potentially interact with the new strainer. The licensee reviewed high energy pipe rupture composite drawings for postulated breaks in close proximity to the new strainer. The licensee also reviewed isometric drawings associated with the breaks along with applicable rupture restraint drawings to determine if the new strainer was a target of pipe whip or jet impingement. Most piping in the area was either too far away to create an interaction, was low-energy piping, or was already restrained/blocked. The licensee included small breaks in the evaluation. Based on review of the results of the licensee's evaluation, the NRC staff finds that piping and other miscellaneous components in the area of the new strainer are mounted such that following a design-basis accident they will not pose a threat to the new screen.

The licensee evaluated internally generated missiles resulting from an event or accident inside containment as part of the new sump design. The ECCS containment sump does not introduce components that could become missiles during a LOCA. The NRC staff's evaluation of each of these missile sources concluded that:

- missile generation from that source was not credible (i.e., catastrophic failure of the reactor vessel, steam generators, pressurizer, reactor coolant pump casings and piping leading to generation of missiles is not postulated, including sections of piping as free missiles),

- the missile was not close enough to damage the ECCS sump strainer and its associated enclosure,

- structural barriers existed between the source of the missile and the ECCS sump strainer and its associated enclosure, or

- the missiles were of low mass (i.e., incapable of causing damage to the strainer or the associated enclosure).

Therefore, the NRC staff finds that the licensee has demonstrated reasonable assurance that damage to the new ECCS containment sump structure from missiles is precluded by a combination of distance, trajectory, obstructions and low kinetic energy.

The new ECCS containment sump strainer assembly is nuclear safety-related, is designed to withstand safe shutdown earthquake loadings, hydrodynamic mass, dead weights, operating loads, debris, thermal expansion, buoyancy, differential pressure, and is protected from tornado missiles by virtue of being located within the containment building which, in turn, is protected by the seismically designed reactor building. The ECCS strainers are passive assemblies (i.e., no moving parts) qualified for the design environmental conditions of the sump. These structures are also designed for the containment subcompartment differential pressures from the limiting case pressurizer surge line pipe break

Further the NRC staff reviewed the licensee's calculation concerning the structural analysis of the replacement strainer The calculations were performed by the licensee to qualify the Catawba 1 and 2 sump strainer for loading associated with dead weight, seismic(including hydrodynamic mass) and differential pressure(psid). All assumptions used in the calculations meet the current licensing basis. The design load combinations used in the calculations are the same as those contained in the Catawba 1 and 2 UFSAR . The strainer structure was designed to withstand 7 psid.

The licensee is required to ensure that strainers are installed according to the prescribed installation procedure that meets 10 CFR 50 Part 50, Appendix B and plant-specific quality assurance (QA) requirements. The procedure requires that any gaps between the plenum wall and the tophat plates bolted to the plenum wall be within the tolerance limit of 1/16-inch. Any gaps exceeding the tolerance limits will be reconciled according to the provisions of the installation procedure and the licensee's QA program. Further the NRC staff finds that because of the robustness of the plenum tophat connections, the 1/16-inch gap is not expected to increase any further under the expected loadings during the life of the plant.

The licensee's application also described the basis for concluding that the strainer assemblies are adequately protected from inadvertent latent damage that could be inflicted during refueling outages or other maintenance activities (e.g., from dropped tools or personnel working in the vicinity of or passing by the strainer assemblies). The licensee stated that protection from falling objects of sufficient weight to damage the strainers is provided by a combination of features, including vortex suppressor grating that covers the majority of the strainer, solid flooring above parts of the strainer, and other structural interferences. During periodic 18-month surveillance inspections of the strainer, the licensee is required to examine the accessible strainer surfaces for latent damage as well as other adverse conditions. Although, as discussed subsequently regarding Criterion C.14, the proposed revision to the periodic surveillance of the sump strainer would not require the inspection of inaccessible strainer surfaces, the licensee stated that replacement strainer surfaces that are inaccessible for inspection would be afforded an additional layer of protection from latent damage by the interfering structures and components that prevent access. Therefore, the licensee concluded that credible mechanisms for latent damage to the replacement strainers are limited to areas of the strainer that are accessible for the purposes of visual inspection. The licensee further provided photographs and mechanical drawings demonstrating the proposed replacement strainer design and configuration with respect to other equipment and structures inside the Catawba 1 and 2 containment buildings. The ECCS sump strainer assembly is designed to minimize the necessity for disassembly during subsequent refueling outages. The design of the new ECCS sump strainer assembly is such that that several components inside containment were relocated to facilitate construction and reduce any potential future disassembly. However, if for some unforeseen reason it becomes necessary to disassemble any portion of the ECCS sump strainer assembly, the licensee will have a procedure in place to ensure that the reassembly meets the minimum standards used in its construction.

Based upon the information provided by the licensee concerning the capability of surrounding equipment and structures to protect inaccessible areas of the replacement strainer from latent damage, the NRC staff finds it reasonable to expect that these areas of the replacement strainers would not be subject to inadvertent and undetected latent damage from activities in containment.

The licensee's basis for concluding that the replacement strainer design will preclude the loss of NPSH to the ECCS and CSS pumps due to debris blockage is based primarily upon the complex geometry of the top hats and the significantly increased strainer area (from 135 square feet to approximately 2000 square feet). In addition, the licensee's statement that the replacement strainer will be fully submerged during recirculation indicates that the flow starvation failure mechanism described in Appendix A to Revision 3 of RG 1.82 is not applicable to the Catawba 1 and 2 replacement strainers. The NRC staff recognizes these improvements to the design of the Catawba 1 and 2 sump and concludes that the licensee has provided reasonable assurance that the replacement strainer design will provide debris filtration for the ECCS and

CSS at a head loss that is consistent with the NPSH margins associated with these systems under current licensing basis assumptions for treating the effects of post-accident debris. Consistent with the discussion in Section 2.0 above, the licensee's demonstration that the replacement strainer design is capable of accommodating the calculated plant-specific debris loading (including chemical precipitates) on a mechanistic basis will be addressed by the licensee in its GL 2004-02 supplementary submittal, and need not be resolved to support the issuance of this license amendment.

In conclusion, while a design with two independent sumps is conservative and clearly compliant with GDC 35, the NRC staff also accepts that a passive design with a single, shared sump is compliant with GDC 35 provided there is reasonable assurance that the failure of the single sump will not occur. Based on the NRC staff's review discussion above, the NRC staff concludes that, the licensee has provided reasonable assurance that a failure of the replacement sump strainer will not occur under current licensing basis assumptions for post-accident debris effects. Therefore, the NRC staff considers the licensee's proposed revision to Criterion C.1 to be acceptable

4.1.2 Criterion C.2

Redundant sumps should be physically separated from each other and from high-energy piping systems by structural barriers to the extent practical, to preclude damage to the sump intake filters by whipping pipes or high-velocity jets of water or steam.

Licensee's Proposed Criterion Commitment

The containment recirculation intake structure and suction piping are protected from high energy piping systems to the extent practical to preclude damage by whipping pipes or high-velocity jets of water or steam. ECCS redundancy begins at the sump suction pipes, and the need to provide ECCS/CSS train separation within the common sump strainer is not required in the absence of any credible loads which could fail the sump strainer.

Based on the NRC staff's review the NRC staff finds the licensee's proposed revision to Criterion C.2 acceptable because ECCS/CSS train separation within the common sump strainer is not required for Catawba 1 and 2 . For reasons discussed in the evaluation of Criterion C.1, the NRC staff concludes that there is reasonable assurance that a single failure that could completely disable the sump strainer will not occur. Therefore, the licensee's proposed change is acceptable.

4.1.3 Criterion C.3

The sumps should be located on the lowest floor elevation in the containment exclusive of the reactor vessel cavity. At a minimum, the sump intake should be protected by two screens (1) an outer trash rack and (2) a fine inner screen. The sump screens should not be depressed below the floor elevation.

Licensee's Proposed Criterion Commitment

The sump is located on the lowest floor elevation in the containment exclusive of the reactor vessel cavity. A substantial strainer is provided to filter debris from recirculated coolant. The polar crane wall acts as a primary filter to prevent large debris from reaching the sump strainer assembly.

The licensee's proposed change to Criterion C.3 would remove the requirement for a trash rack.

The intended functions of the trash rack are to provide protection from missiles and large debris. The functions of the trash rack are provided by alternate means, as discussed below regarding Criterion C.6. The sump location remains on the lowest floor elevation in the containment exclusive of the reactor vessel cavity.

Based upon information reviewed by the NRC staff that is summarized above and in the evaluation of the proposed revisions to Criteria C.1 and C.6, the NRC staff concludes that (1) the new strainer design provides adequate protection of the ECCS/CSS inlet pipes, and (2) the intended filtration function of the trash rack is provided through alternate means. Therefore, the NRC staff finds the licensee's proposed revision to Criterion C.3 acceptable. More information and details of this position and the NRC staff's evaluation are included in the NRC staff's evaluation of Criteria C.1 and C.6.

4.1.4 Criterion C.4 (Plant-Specific)

The floor level in the vicinity of the coolant sump location should not slope toward the sump.[2]

Licensee's Proposed Criterion Commitment

Exception is taken to this position.

The licensee proposed an outright exception to the existing plant-specific Criterion C.4, but stated that the complex geometry of the replacement strainer will provide an alternate means to encourage debris settling.

The current licensing basis for Catawba 1 and 2 in UFSAR Section 1.7 states that the floor level in the vicinity if the coolant sump location should not slope towards the sump. The modifications do not change the configuration of the floor slope or sump level. The licensee proposes to change the wording in the UFSAR to clearly state that an exception is taken to this position. The licensee proposes to state that the complex geometry of the new strainer design accommodates settling debris without affecting the performance adversely. Additionally, the licensee states that the UFSAR will be updated to state that the location of the sump strainer assembly provides protection for missiles and large debris. The polar crane wall acts as a primary filter to prevent large debris from reaching the sump strainer.

The NRC staff finds a containment floor that slopes downward away from the sump to be beneficial in limiting debris transport to the sump. However, a sloped floor is not required, and, given the expansiveness of typical replacement strainers, the NRC staff recognizes that satisfying this criterion explicitly is not practical for some operating plants. The NRC staff also agrees that the design features of the replacement strainers, including the large surface area, the raised configuration, and the complex geometry, would help to limit the capability of floor-transporting debris to accumulate upon the strainers. Therefore, the NRC staff finds the licensee's exception to the current Criterion C.4 commitment acceptable.

4.1.5 Criterion C.6 (Plant-Specific)

The outer trash rack should be provided to prevent large debris from reaching the fine inner screen. The strength of the trash rack should be considered in protecting the inner screen from missiles and large debris.[3]

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2 Criterion C.4 from RG 1.82, Revision 0, states that the floor should slope "gradually down away from the sump."
3 Criterion C.6 from RG 1.82, Revision 0, further stipulates that the trash rack should be vertical.

Licensee's Proposed Criterion Commitment
The location of the sump strainer assembly provides a protection from missiles and large debris. The polar crane wall acts as a primary filter to prevent large debris from reaching the sump strainer.

The licensee's proposed change to Criterion C.6 would remove the licensee's commitment to protect the containment sump with a trash rack. In general, the function of a trash rack is to protect the sump from missiles and large debris. Although the Catawba 1 and 2 replacement strainer design does not include trash racks, the licensee stated that the intended functions of the trash rack described in RG 1.82, Revision 0, are provided by alternate means. Specifically, the licensee stated that the physical location of the strainer assemblies outside the crane wall provides protection from missiles. The licensee also stated that all debris-laden flow must pass through 8-inch penetrations in the crane wall. The licensee stated that there are over 50 penetrations in the crane wall, which act as a coarse filter to prevent large debris from entering the pipechase on its way to the sump strainers.

Based on the NRC staff's review the NRC staff finds the licensee's assessment that the 8-inch crane wall penetrations will capture the largest pieces of debris that are generated inside the crane wall. Although the 8-inch crane wall penetrations are significantly larger than the openings of typical trash rack grating, the NRC staff does not expect that typical transportable debris smaller than 8 inches in size would create a structural concern for the relatively robust replacement strainers. The NRC staff concludes that, as a result of the design features of the replacement strainer, including (1) a large surface area, (2) a complex geometry, and (3) its being raised above the surrounding containment floor, large pieces of typical types of post-accident debris would not be capable of transporting to, adhering to, or uniformly covering the replacement strainers

Therefore, the NRC staff finds the licensee's proposed revision to Criterion C.6 acceptable because the intended functions of the trash rack can be accomplished through alternate means for the Catawba 1 and 2 replacement strainer design. More information and details of this position and the NRC staff's evaluation of dynamic effects and structural issues are included above in the discussion of Criterion C.1.

4.1.6 Criterion C.7 (Plant-Specific)
The design coolant velocity at the inner screen should be approximately 2.0 ft/sec. The available surface area used in determining the design coolant velocity should be based on one-half of the free surface area of the fine inner screen to conservatively account for partial blockage. No horizontal screen should be considered in determining available surface area.[4]

Licensee's Proposed Criterion Commitment
The sump strainer design (i.e., size and shape) will preclude the loss of NPSH to ECCS and CSS pumps from debris blockage during the period that the ECCS is required to operate and maintain long-term cooling.

The licensee's proposed criterion commitment would remove (1) the prohibition on crediting

4 Criterion C.7 from RG 1.82, Revision 0, more strictly states that the fine inner screen should be mounted vertically, and that only the vertical area should be credited in determining the design coolant velocity. Also, as opposed to the design coolant velocity of 2.0 ft/sec in the Catawba 1 and 2 licensing basis, RG 1.82, Revision 0, recommends a design coolant approach velocity of 0.2 ft/sec.

horizontal screen area, (2) the specification of a particular strainer approach velocity, and (3) the non-mechanistic halving of the strainer area as a rough means of accounting for debris blockage. The licensee indicated that removal of the latter two items eliminates non-conservative regulatory positions that have been superseded in subsequent revisions to RG 1.82. The licensee also stated that the strainer modification enhances the sump design by providing a much larger surface area for the filtration of debris, in order to preclude the loss of NPSH for ECCS and CSS pumps during the period these components are required to operate.

The NRC staff finds the licensee's elimination of superseded guidance prescribing a recommended strainer approach velocity and a non-mechanistic assumption that the sump screen is 50% blocked is acceptable. The NRC staff finds that the replacement strainer design's complex geometry, raised configuration, and significantly larger surface area all contribute to limiting blockage associated with large pieces of debris that are only capable of transporting by floatation or along the containment floor, which is one of the primary technical bases underlying the recommendation that screens be vertically oriented. In addition, the significantly increased area of the replacement strainer leads to an approach velocity that is significantly lower than the design coolant velocity specified in Criterion C.7 (both that of the plant-specific version cited above and the reduced value specified in Criterion C.7 in RG 1.82, Revision 0), even under the current licensing basis assumption that the strainer is half blocked.

Based upon the NRC staff's review and the discussion above, the NRC staff finds the licensee's proposed commitment revision to Criterion C.7 acceptable because the proposed criterion is consistent with the intent of the original plant-specific Criterion C.7. More information and details of this position and the NRC staff's evaluation are included above in the evaluation of Criterion C.1.

4.1.7 Criterion C.8

A solid top deck is preferable, and the top deck should be designed to be fully submerged after a LOCA and completion of the safety injection.

Licensee's Proposed Criterion Commitment

Vortex suppression is provided to preclude air entrainment in the recirculated coolant. RG 1.82 expresses a preference that a sump be designed with a submerged solid top deck to provide an additional protective barrier against missiles and protection against air or debris entrainment via a vortex. The licensee indicated that the Catawba 1 and 2 replacement strainer design is not covered with a solid plate, but stated that the intended functions of a solid cover plate are provided through alternate means. First, the missile protection function is addressed by locating the strainer in the pipechase, which is sheltered from the dynamic effects of piping ruptures. Second, the vortex suppression function is addressed by the presence of gratings, the efficacy of which the licensee stated has been demonstrated through qualification testing. The licensee further stated in the supplemental submittal dated October 16, 2007, that the vortex suppression grating would be installed so that it will be submerged at the minimum containment water level.

Based on the NRC staff's review and the discussion above, the NRC staff concludes that the Catawba 1 and 2 replacement strainer design is consistent with the intent of Criterion C.8 by providing suppression of vortex formation. Therefore, the NRC staff finds the licensee's proposed revision to its commitment to Criterion C.8 acceptable. More information and details of this position and the NRC staff's evaluation are included above in the evaluation of Criterion C.1.

4.1.8 Criterion C.9

The trash rack and screens should be designed to withstand the vibratory motion of seismic events without loss of structural integrity.

Licensee's Proposed Criterion Commitment

The sump strainer is designed to withstand the vibratory motion of seismic events without loss of structural integrity.

The licensee's proposed criterion replaces the phrase "The trash rack and screens should be," with the phrase "The sump strainer is." As discussed above regarding Criteria C.1, C.3, and C.6, the NRC staff finds that the functions of the trash rack are maintained by other strainer and containment design features. Therefore, the NRC staff finds the licensee's proposed change to Criterion C.9 acceptable because it more accurately describes the replacement strainer design.

4.1.9 Criterion C.10

The size of openings in the fine screen should be based on the minimum restrictions found in systems served by the sump. The minimum restriction should take into account the overall operability of the system served.

Licensee's Proposed Criterion Commitment

The size of openings in the sump strainer are based on the minimum restrictions found in systems served by the sump. The minimum restriction takes into account the overall operability of the system served.

In lieu of Criterion C.10, the licensee has proposed a plant-specific criterion commitment with the purpose of replacing the phrase "fine screen" with the phrase "sump strainer." The NRC staff finds the proposed revision to Criterion C.10 acceptable because it more accurately describes the replacement strainer design.

4.1.10 Criterion C.12

Materials for trash racks and screens should be selected to avoid degradation during periods of inactivity and operation and should have low sensitivity to adverse effects such as stress-assisted corrosion that may be induced by the chemical reactive spray during LOCA conditions.

Licensee's Proposed Criterion Commitment

Materials for the sump strainers were selected to avoid degradation during periods of inactivity and operation and have a low sensitivity to adverse effects such as stress assisted corrosion that may be induced by chemically reactive spray during LOCA conditions.

In lieu of the Criterion C.12 commitment, the licensee has proposed a plant-specific criterion commitment with the purpose of replacing the phrase "trash racks and screens" with the phrase "sump strainers." The proposed change would eliminate the reference to a trash rack and screen, the functions of which are maintained through alternate means, discussed previously regarding Criterion C.6. The NRC staff finds the proposed revision to Criterion C.12 acceptable because it more accurately describes the replacement strainer design.

4.1.11 Criterion C.13

The trash rack and screen structure should include access openings to facilitate inspection of the structure and pump suction intake.

Licensee's Proposed Criterion Commitment

The sump strainer includes access openings to facilitate inspection.

The proposed revision to the Criterion C.13 commitment would eliminate the reference to a trash rack and screen, as well as to the inspection of the internal sump structure and pump suction intake.

The NRC staff has previously evaluated the licensee's deletion of the commitment to maintain a trash rack around the sump and, therefore, considers the proposed change in terminology from "trash rack and screen structure" to "sump strainer" in Criterion C.13 acceptable, because it more accurately describes the replacement strainer design.

The licensee's proposed criterion commitment also removes explicit language that the strainer access openings should facilitate inspection "of the structure and pump suction intake." The NRC staff finds the removal of this language acceptable because, following the strainer modification, the licensee stated that the strainers will form a closed boundary around the pump suction intakes. Therefore, based on the NRC staff's review of the information provided by the licensee, the NRC staff finds the proposed revision to Criterion C.13 acceptable.

4.1.12 Criterion C.14

Inservice inspection requirements for coolant sump components (trash racks, screens, and pump suction inlets) include the following:

a. Coolant sump components should be inspected during every refueling period downtime, and
b. The inspection should be a visual examination of the components for evidence of structural distress or corrosion.

Licensee's Proposed Criterion Commitment

Inservice inspection requirements for coolant sump components (the strainer assembly) include the following:

a. Coolant sump components shall be inspected during every refueling period downtime, and
b. The inspection shall be a visual examination of the components for evidence of structural distress or corrosion to the extent practical. Physical restrictions in the area the strainer is located limits access for inspection without disassembly.

Noting that trash racks will not be present in the replacement design, the primary exceptions in the licensee's proposed revision to Criterion C.14 are limitations to the inspection scope that would (1) not require an inspection of the pump suction inlets, and (2) limit the inspection of strainer surfaces to those considered practical without disassembling the strainer.

As discussed above regarding Criterion C.13, the NRC staff finds the licensee's position that the closed nature of the replacement strainers eliminates the need to perform a visual inspection of the pump suction inlets.

As discussed above regarding Criterion C.1, the licensee stated that vortex grating and other structural interferences surrounding the strainer make a significant fraction of its area inaccessible without disassembly (estimated by the licensee as approximately 70 percent of the strainer surface area). As a result, the licensee considers an inspection of 100 percent of the replacement strainer surface area to be impractical. Therefore, the licensee has alternately proposed a commitment to inspect all strainer surfaces accessible without disassembly using normal means and tools (e.g., a flashlight, an extendable mirror, and a hand-held digital camera). The licensee stated that areas which are difficult to access will be inspected to the extent possible using the same means and tools. The licensee further stated that the detection of damage or degradation during a containment sump surveillance inspection would result in the expansion of the scope as needed to check other areas of potential damage or degradation. The licensee noted that degradation due to corrosion is very unlikely under normal operating conditions because the replacement strainers are constructed from stainless steel.

The licensee also stated that during the strainer installation process, cleanliness controls and foreign material exclusion practices will be employed. In addition, a final robotic (internal) inspection of the entire strainer will be performed to ensure that any foreign material or debris from work activities supporting the strainer installation has been removed. The licensee further stated that video inspections for foreign material will be made inside the ECCS suction lines up to their first horizontal run.

As discussed above in the NRC staff's evaluation of the licensee's proposed revision to Criterion C.1 and based on the NRC staff's review of the information provided by the licensee above, the NRC staff finds it acceptable for the licensee's periodic containment sump inspections to examine only the accessible surface areas of the replacement strainers. As addressed in the evaluation of Criterion C.1, the NRC staff considers it reasonable that inaccessible passive strainer surfaces need not be inspected if interfering structures and equipment are present that are capable of providing them with adequate protection against latent damage. The NRC staff finds the licensee's stated intention of inspecting difficult-to-access areas to the extent possible acceptable. Based upon operating experience, the NRC staff finds with the licensee's statement that corrosion of the stainless steel replacement strainers is very unlikely under normal operating conditions. The NRC staff finds the licensee's efforts to perform a final inspection of the entire installed replacement strainer and its internals acceptable, since construction debris has been shown by operating experience to be a significant contributor to foreign material intrusion events.

Therefore, based on the NRC staff's review and the discussion above, the NRC staff finds the licensee's proposed commitment revision to Criterion C.14 acceptable.

4.1.13 Summary of NRC Staff's Evaluation of RG 1.82 Exemptions

The NRC staff finds the proposed changes generally meet the intent of the guidance criteria to the extent they remain applicable given a significantly enhanced strainer design. Further, exceptions taken are acceptable. The new strainer is designed to provide debris filtration with acceptable head loss and adequate NPSH to the ECCS/CSS pumps at the maximum postulated debris loads during the post-LOCA recirculation phase. The licensee stated that the strainer design was developed in accordance with NEI 04-07 guidance, and is sized to accommodate all transported debris. Periodic inspections will be used to identify any potential degradation or condition that could adversely affect functionality. The licensee states that inspection frequency is considered to be sufficient to detect abnormal degradation. The NRC staff finds that there is reasonable assurance that the new sump design at Catawba 1 and 2 will provide adequate

debris protection for each of two train-specific suction pipes that exit lower containment.

4.2 Revision to TS Surveillance Requirement 3.5.2.8

The proposed license amendment would also revise SR 3.5.2.8 of the Catawba 1 and 2 TS to reflect the ECCS containment sump modification. Note that SR 3.5.2.8 is the required containment sump surveillance inspection which fulfills the licensee's commitment to Criterion C.14 above.

Currently, SR 3.5.2.8 reads as follows:

> Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.

The licensee has proposed to revise SR 3.5.2.8 as follows:

> Verify, by visual inspection, that the ECCS containment sump strainer assembly is not restricted by debris and shows no evidence of structural distress or abnormal corrosion.

The licensee stated that the modification to install the replacement strainer will enclose the containment sump suction inlet, thus making it an integral part of the strainer assembly. The licensee further stated that the use of the phrase "ECCS containment sump strainer assembly" reflects the replacement ECCS containment strainer configuration, which does not include trash racks. The licensee also stated that the removal of the word "train" is appropriate because, as discussed previously, the replacement strainer modification will convert the two existing independent sumps into a shared, common sump.
The NRC staff has evaluated each of these considerations associated with the proposed revision to SR 3.5.2.8 in the preceding discussion of changes to the licensee's commitments to sump design criteria from RG 1.82, Revision 0. In particular, the removal of the containment sump suction inlet from the scope of the inspection was evaluated in the discussion of the proposed revision to Criterion C.13; the removal of the trash racks was evaluated in the discussion of revisions to Criteria C.1, C.3, and C.6; and the conversion of the two existing independent sumps into a shared, common sump was evaluated in the discussion of revisions to Criteria C.1 and C.2. Based upon the foregoing evaluation of these issues above, the NRC staff finds the licensee's proposed revision to SR 3.5.2.8 acceptable.

As discussed above regarding Criterion C.14, SR 3.5.2.8 will only require an inspection of accessible surfaces of the replacement strainers. The licensee stated that the TS Bases discussion for SR 3.5.2.8 will be modified in accordance with the Catawba 1 and 2 TS Section 5.5.14 to reflect the intended scope and methods by which this surveillance will be performed, which has already been evaluated and found acceptable by the NRC staff above in the discussion regarding Criterion C.14.

5.0 SUMMARY

The NRC staff performed an independent review of the proposed licensing basis and TS changes. Based on the above evaluation the NRC staff finds the licensee's proposal to modify the Catawba 1 and 2 licensing basis, as described in the UFSAR and the changes to the TS acceptable. The NRC staff's acceptance of these proposed changes does not provide approval

of the licensee corrective actions to address GL 2004-02. Rather, assurance that the licensee's corrective actions are adequate to satisfy applicable regulatory requirements in accordance with the mechanistic criteria associated with GSI-191 will be provided by the NRC staff's review of activities associated with GL 2004-02.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

7.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (72 FR 45274). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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