Progress Energy

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Serial: HNP-06-091
10 CFR 50.55a

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

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
RELIEF REQUESTS FROM ASME CODE INSERVICE TESTING REQUIREMENTS
TO ALLOW ONLINE DISASSEMBLY OF CERTAIN CHECK VALVES

Ladies and Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Part 50.55a, "Codes and Standards," paragraph (a)(3)(i), the Harris Nuclear Plant (HNP) of Carolina Power and Light Company (CP&L) doing business as Progress Energy Carolinas, Inc., requests relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," OM Standard, Part 10 Paragraph 4.3.2.4(c). HNP proposes an alternative to the Code requirements that would alter the stated time at which the check valves are disassembled and inspected from "during refueling outages" to "once per fuel cycle." This change would allow online disassembly and inspection of these check valves while maintaining an acceptable level of quality and safety since the proposed frequency is consistent with that of the applicable Code requirement for performing inservice testing of valves.

HNP requests approval of these relief requests pursuant to 10 CFR 50.55a(3)(i) since the proposed alternatives would provide an acceptable level of quality and safety to that of the applicable Code requirement.

Attachment 1 provides the proposed HNP Relief Request AS-VR1 and the proposed revision to existing HNP Relief Request CC-VR1, which was originally approved on February 1, 1999.

HNP requests approval of these relief requests by May 2007 to support interval closeout. Once approved, the relief requests will be incorporated within 60 days.

This document contains no new Regulatory Commitment.

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

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Please refer any questions regarding this submittal to Mr. Dave Corlett at (919) 362-3137.

Sincerely,

C.S. Kamilaris

C. S. Kamilaris
Manager, Site Support Services
Harris Nuclear Plant

CSK/jpy

Attachment

c: Mr. R. A. Musser, NRC Sr. Resident Inspector
Mr. C. P. Patel, NRC Project Manager
Dr. W. D. Travers, NRC Regional Administrator

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
INSERVICE INSPECTION PROGRAM RELIEF REQUEST NO. AS-VR1 and CC-VR1
RELIEF REQUEST FROM ASME CODE INSERVICE TESTING REQUIREMENTS
TO ALLOW ONLINE DISASSEMBLY OF CERTAIN CHECK VALVES

COMPONENTS FOR WHICH RELIEF IS REQUESTED:

AS-VR1

Code Class:	Class 3
References:	ASME, Section XI, 1989 Edition with no Addenda, Article IWV-1000, ANSI/ASME Part 10 – OMa – 1988 Addenda to the OM – 1987 Edition, Inservice Testing of Valves in Light-Water Reactor Power Plants
Valve Tag Numbers	1AS-344, 1AS-345
Valve Description	Auxiliary Steam Excess Flow Check Valves

CODE REQUIREMENTS:

ASME, Section XI, 1989 Edition with no Addenda, Article IWV-1000, ANSI/ASME Part 10 – OMa – 1988 Addenda to the OM – 1987 Edition, Inservice Testing [IST] of Valves in Light-Water Reactor Power Plants, paragraph 4.3.2.4(c) states:

> "As an alternative to the testing in (a) or (b) above, disassembly every refueling outage to verify operability of check valves may be used."

BASIS FOR RELIEF:

Harris Nuclear Plant (HNP) requests relief in accordance with 10 CFR 50.55a(a)(3)(i) since the proposed alternative would provide an acceptable level of quality and safety. The proposed frequency is equivalent to the frequency required by the ASME OMa-10 Code for performing IST of valves.

ALTERNATE EXAMINATIONS:

As an alternative to the existing ASME Section XI Code requirements for check valve disassembly every refueling outage, HNP will maintain an equivalent frequency by performing disassemblies and inspections once per fuel cycle. The proposed alternative would allow online disassembly and inspection of these valves. Following check valve disassembly and inspection, the check valves will be partial stroke tested.

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TO ALLOW ONLINE DISASSEMBLY OF CERTAIN CHECK VALVES

TECHNICAL JUSTIFICATION FOR REQUESTING RELIEF:

The proposed alternative is equivalent to the current frequency of disassemblies and inspections. Therefore, the number of disassemblies and inspections during the current 10-year interval remain the same. The proposed alternative will provide scheduling flexibility to perform the disassemblies and inspections before the refueling outage, rather than during the refueling outage, while maintaining the same level of quality and safety as the current frequency requirements.

1AS-344 and 1AS-345 are Class 3 excess flow check valves that have no safety function in the open position since the auxiliary steam system is not required to operate during design bases accidents. However, they perform an active safety function in the closed position by providing a barrier between harsh and mild environments. They are installed in tandem with each other in one non-ASME Code, non-seismic, auxiliary steam piping header routed inside the reactor auxiliary building (RAB) to supply steam to the boric acid batching tank and the boron recycle evaporators. In the event of a postulated earthquake, this piping is assumed to fail. These valves would then be required to close due to the increased steam flow induced by the postulated pipe rupture. In this instance, these valves would be relied upon to maintain certain areas of the RAB as a mild environment. These valves were identified as requiring testing in early 1993 as part of a review performed to address NRC Information Notice 92-52, Barriers and Seals Between Mild and Harsh Environments, and they were subsequently incorporated into the HNP IST program.

As an alternative to the existing ASME Section XI requirements for check valve disassembly, HNP will maintain an equivalent frequency by performing check valve disassemblies and inspections on each valve once per fuel cycle. Following check valve disassembly and inspection, the check valves will be partial stroke tested.

During the disassemblies and inspections, components are properly isolated and activities are performed within the restrictions of plant procedures. In addition, online maintenance activities are managed in accordance with 10 CFR 50.65 requirements. As such, there is no significant increase in plant risk associated with the check valve disassembly and inspection activity during plant operation versus during refueling.

Based on the above, the proposed alternative to verify the full-stroke capability of the identified check valves by disassembly and inspection on an alternative testing frequency of once during each operating cycle (nominal 18-month frequency) in lieu of once during each refueling outage, will provide an acceptable level of quality and safety.

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IMPLEMENTATION SCHEDULE:

Approval of this alternative is requested for the remainder of the HNP Second 10-year IST interval.

PRECEDENT:

The Nuclear Regulatory Commission has approved previously a similar check valve relief request submitted by Brunswick Steam Electric Power Plant in a letter dated May 26, 2005 (i.e., Ascension No. ML051580384), as supplemented by letters dated September 2, 2005 (i.e., Ascension No. ML 052510430) and January 25, 2006 (i.e., Ascension No. ML060370020), and approved by NRC letter dated April 27, 2006 (i.e., TAC Nos. MC7354 and MC 7355 and Ascension No. ML060890203). The HNP and Brunswick alternatives are similar in that the HNP alternative would verify full stroke capability of the check valves on an operating cycle frequency, rather than during refueling outages. The HNP and Brunswick alternatives differ in that the approved Brunswick disassembly frequency is a nominal 24 months, whereas the proposed HNP disassembly frequency would be a nominal 18 months. They also differ in that the Brunswick activities have time restrictions associated with an allowed technical specification limiting condition for operation, whereas the HNP activities do not.

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INSERVICE INSPECTION PROGRAM RELIEF REQUEST NO. AS-VR1 and CC-VR1
RELIEF REQUEST FROM ASME CODE INSERVICE TESTING REQUIREMENTS
TO ALLOW ONLINE DISASSEMBLY OF CERTAIN CHECK VALVES

COMPONENTS FOR WHICH RELIEF IS REQUESTED:

CC-VR1

Code Class:	Class 3
References:	ASME, Section XI, 1989 Edition with no Addenda, Article IWV-1000, ANSI/ASME Part 10 – OMa – 1988 Addenda to the OM – 1987 Edition, Inservice Testing of Valves in Light-Water Reactor Power Plants
Valve Tag Numbers	1CC-306, 1CC-307
Valve Description	Component Cooling Water To Gross Failed Fuel Detector Check Valves

CODE REQUIREMENTS:

ASME, Section XI, 1989 Edition with no Addenda, Article IWV-1000, ANSI/ASME Part 10 – OMa – 1988 Addenda to the OM – 1987 Edition, Inservice Testing of Valves in Light-Water Reactor Power Plants, paragraph 4.3.2.4(c) states:

> "As an alternative to the testing in (a) or (b) above, disassembly every refueling outage to verify operability of check valves may be used."

The current Relief Request CC-VR1, approved by the NRC letter dated February 1, 1999 (TAC No. MA0815) states:

> "A full-stroke closure exercise of the subject valves will be verified by a sample disassembly and inspection program as outlined in NRC Staff Position 2 in USNRC Generic Letter 89-04 "Guidance On Developing Acceptable Inservice Testing Programs." The subject valves are of the same design (manufacturer, size, model number and materials of construction) and have the same service conditions including valve orientation and together consist of one group. One of the subject valves shall be disassembled each refueling outage. During valve disassembly, the valve internals will be visually inspected for worn or corroded parts, and the valve disk shall be manually exercised. If the disassembled valve is not capable of being full-stroke exercised or if there is binding or failure of the valve internals, the other valve in this group shall also be disassembled, inspected, and manually full-stroke exercised during the same refueling outage."

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BASIS FOR RELIEF:

Harris Nuclear Plant (HNP) requests relief in accordance with 10 CFR 50.55a(a)(3)(i) since the proposed alternative would provide an acceptable level of quality and safety.

ALTERNATE EXAMINATIONS:

As an alternative to the existing ASME Section XI requirements for check valve disassembly every refueling outage, HNP will disassemble and inspect one valve from the group in accordance with the provisions of Position 2 of Generic Letter 89-04, once per fuel cycle. Following check valve disassembly and inspection, the check valve will be partial stroke tested.

TECHNICAL JUSTIFICATION FOR REQUESTING RELIEF

The proposed alternative is equivalent to the current frequency of disassemblies and inspections. Therefore, the number of disassemblies and inspections during the current 10-year interval remains the same. The proposed alternative will provide scheduling flexibility to perform the disassemblies and inspections before the refueling outage, rather than during the refueling outage, while maintaining the same level of quality and safety as the current frequency requirements.

These check valves have no safety function in the open position. Normally open, they are located in the component cooling water (CCW) return line from the gross failed fuel detection (GFFD) system. The GFFD system does not perform a safety function for accident mitigation or safe shutdown. However, the system may be relied on for assessing reactor plant conditions and for emergency preparedness classification determinations. These functions are important, but are not considered safety related.

These check valves have an active function in the closed position as the Class 3 to non-Code boundary to provide a redundant isolation to its in-series check valve. Typically, Class 3 systems only require one code boundary valve. However, in this case, both safety trains are impacted and two valves in series are required for single failure purposes. This redundant isolation is required to prevent a loss of inventory from both trains of CCW in the event that the non-Code piping fails during the initial phase of safety injection.

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TECHNICAL JUSTIFICATION FOR REQUESTING RELIEF (continued)

During the disassemblies and inspections, components are properly isolated and activities are performed within the restrictions of plant procedures. In addition, online maintenance activities are managed in accordance with 10 CFR 50.65 requirements. As such, there is no significant increase in plant risk associated with the check valve disassembly and inspection activity during plant operation versus during refueling.

Based on the above, the proposed alternative to verify the full-stroke capability of the identified check valves on a nominal 18-month frequency, rather than during refueling outages, by check valve disassembly and inspection of one valve from the group in accordance with the provisions of Position 2 of Generic Letter 89-04, will provide an acceptable level of quality and safety.

IMPLEMENTATION SCHEDULE:

Approval of this alternative is requested for the remainder of the HNP Second 10-year IST interval.

PRECEDENT:

The Nuclear Regulatory Commission has approved previously a similar check valve relief request (VRR-08) submitted by Kewaunee Nuclear Power Plant in a letter dated February 16, 2004 (i.e., Ascension No. ML042810135), as supplemented by letter dated May 6, 2006 (i.e., Ascension No. ML041400247), and approved by NRC letter dated July 1, 2004 (i.e., TAC No. MC2097 and Ascension No. ML041680247). The HNP and Kewaunee alternatives are similar in that the HNP alternative would verify full stroke capability for one valve in the group of the check valves on a nominal 18-month operating cycle frequency, rather than during refueling outages. The HNP and Kewaunee alternatives differ in that the Kewaunee activities have time restrictions associated with an allowed technical specification limiting condition for operation, whereas the HNP activities do not.