UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

March 25, 1982

Posted
Amdt. 109
to DPR-47

Dockets Nos. 50-269, 50-270
and 50-287

Mr. William O. Parker, Jr.
Vice President - Steam Production
Duke Power Company
P. O. Box 33189
422 South Church Street
Charlotte, North Carolina 28242

Dear Mr. Parker:

The Commission has issued the enclosed Amendments Nos. 109 ,109 , and 106 to Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station (ONS), Units Nos. 1, 2 and 3. These amendments consist of changes to the Station's common Technical Specifications (TSs) in response to your requests dated October 1, 1976 and July 8, 1977, as supplemented by letters dated May 26 and September 21, 1977, March 6 and April 27, 1978, May 15, 30 and July 16, 1979 and December 4, 1980.

These amendments revise the TSs to incorporate the provisions of the herein approved inservice testing program.

The approved inservice testing program includes relief from specific ASME Code requirements which were determined to be impractical for the ONS because of limited access due to design and radiation, geometry and materials of construction of some components as discussed in the enclosed Safety Evaluation. We have determined that granting this relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest.

It should be noted that Section 50.55a(g) of 10 CFR Part 50 requires that your program be revised at 120 month intervals with the start of commercial operation being the reference date. The start of the next interval for the ONS is: Unit 1-July 1983, Unit 2-September 1984, and Unit 3-December 1984. Your inservice inspection and testing program must be based on the edition and addenda of the ASME Code incorporated by 10 CFR 50.55a(b) 12 months prior to that date. Any changes to your TSs are required to be submitted at least 6 months prior to the beginning of a 120 month interval and it is requested that any requests for relief from ASME Code requirements be provided on the same schedule. It should be understood that 10 CFR 50.55a(g) does not require NRC approval of your revised program and that our review will address only requests for relief from Code requirements and TS changes. Submittal of your revised program is not required unless specifically requested by the NRC staff to support your relief requests.

It is requested, however, that you provide a summary of the changes from your previous program, an evaluation of the method selected for determining the condition of the valves performing a pressure isolation function, and an analysis by which free disk motion can be verified for those check valves which are only partial stroke tested in your relief request submittal. Our review of your relief requests for your next interval will be conducted on a schedule based on the program revision requirements for your facility. Until that time you should follow the inservice inspection and testing program described herein.

In a related matter, we have reviewed your December 14, 1981 letter on the use of Code Case N-210 of the ASME Boiler and Pressure Vessel Code. Since Code Case N-210, "Exemptions to Hydrostatic Test after Repair, Section XI, Division 1", has been endorsed, subject to certain additional conditions, in Regulatory Guide 1.147, and since you have agreed to incorporate these additional conditions, we find the use of this Code Case to be acceptable.

A copy of the Notice of Issuance is also enclosed.

Sincerely,

Philip C. Wagner

Philip C. Wagner, Project Manager
Operating Reactors Branch #4
Division of Licensing

Enclosures:
1. Amendment No. 109 to DPR-38
2. Amendment No. 109 to DPR-47
3. Amendment No. 106 to DPR-55
4. Safety Evaluation
5. Notice

cc w/enclosure:
See next page

Duke Power Company

cc w/enclosure(s):

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Honorable James M. Phinney
County Supervisor of Oconee County
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cc w/enclosure(s) & incoming* dtd.:
5/15 & 7/16/79 & 12/4/80

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*10/1/76, 7/8/77, 5/26 & 9/21/77 &
5/30/79 previously provided w/
11/7/80 NRC ltr. to Duke

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 109
License No. DPR-47

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

   A. The applications for amendment by Duke Power Company (the licensee) dated October 1, 1976 and July 8, 1977, as supplemented on May 26 and September 21, 1977, March 6 and April 27, 1978, May 15, May 30, and July 16, 1979 and December 4, 1980, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the applications, 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;

   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 amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Facility Operating License No. DPR-47 is hereby amended to read as follows:

   3.B Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 109 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 25, 1982

ATTACHMENTS TO LICENSE AMENDMENTS

AMENDMENT NO. 109 TO DPR-38

AMENDMENT NO. 109 TO DPR-47

AMENDMENT NO. 106 TO DPR-55

DOCKETS NOS. 50-269, 50-270 AND 50-287

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment numbers and contain vertical lines indicating the area of change.

Remove Pages	Insert Pages
iii	iii
4-1	4.0-1
4.5-2	4.5-2
4.5-7	4.5-7
4.20-1	--

Section		Page
3.4	SECONDARY SYSTEM DECAY HEAT REMOVAL	3.4-1
3.5	INSTRUMENTATION SYSTEMS	3.5-1
3.5.1	Operational Safety Instrumentation	3.5-1
3.5.2	Control Rod Group and Power Distribution Limits	3.5-6
3.5.3	Engineered Safety Features Protective System Actuation Setpoints	3.5-28
3.5.4	Incore Instrumentation	3.5-30
3.6	REACTOR BUILDING	3.6-1
3.7	AUXILIARY ELECTRICAL SYSTEMS	3.7-1
3.8	FUEL LOADING AND REFUELING	3.8-1
3.9	RELEASE OF LIQUID RADIOACTIVE WASTE	3.9-1
3.10	RELEASE OF GASEOUS RADIOACTIVE WASTE	3.10-1
3.11	MAXIMUM POWER RESTRICTIONS	3.11-1
3.12	REACTOR BUILDING POLAR CRANE AND AUXILIARY HOIST	3.12-1
3.13	SECONDARY SYSTEM ACTIVITY	3.13-1
3.14	SHOCK SUPPRESSORS (SNUBBERS)	3.14-1
3.15	PENETRATION ROOM VENTILATION SYSTEMS	3.15-1
3.16	HYDROGEN PURGE SYSTEM	3.16-1
3.17	FIRE PROTECTION AND DETECTION SYSTEMS	3.17-1
4	SURVEILLANCE REQUIREMENTS	4.0-1
4.0	SURVEILLANCE STANDARDS	4.0-1
4.1	OPERATIONAL SAFETY REVIEW	4.1-1
4.2	STRUCTURAL INTEGRITY OF ASME CODE CLASS 1, 2 AND 3 COMPONENTS	4.2-1
4.3	TESTING FOLLOWING OPENING OF SYSTEM	4.3-1
4.4	REACTOR BUILDING	4.4-1

4 SURVEILLANCE REQUIREMENTS

4.0 SURVEILLANCE STANDARDS

Applicability

Applies to surveillance requirements which relate to tests, calibrations and inspections necessary to assure that the quality of structures, systems and components is maintained and that operation is within the safety limits and limiting conditions for operation.

Objective

To specify minimum acceptable surveillance requirements.

Specification

4.0.1 Surveillance of structures, systems, components and parameters shall be as specified in the various subsections to this Technical Specification section, Section 4.0, except as permitted by Technical Specifications 4.0.2 and 4.0.3 below.

4.0.2 Minimum surveillance frequencies, unless specified otherwise, may be adjusted as follows to facilitate test scheduling:

Specified Frequency	Maximum Allowable Interval Between Surveillances
Five times per week	2 days
Two times per week	5 days
Weekly	10 days
Bi-Weekly	20 days
Monthly	45 days
Bi-Monthly	90 days
Quarterly	135 days
Semiannually	270 days
Annually	18 months
Refueling Outage	22 months, 15 days

4.0.3 If conditions exist such that surveillance of an item is not necessary to assure that operation is within the safety limits and limiting conditions for operation, surveillance need not be performed if such conditions continue for a length of time greater than the specified surveillance interval. Surveillance waived as a result of this specification shall be performed prior to returning to conditions for which the surveillance is necessary to assure that operation is within safety limits and limiting conditions for operation.

4.0.4 Inservice testing of ASME Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50 Section 50.55a(g)(4) to the extent practicable within the limitations of design, geometry and materials of construction of the components.

Amendments Nos. 109 , 109 , & 106

Reactor Coolant System, verification shall be made that the check and isolation valves in the core flooding tank discharge lines operate properly.

b. The test will be considered satisfactory if control board indication of core flood tank level verifies that all valves have opened.

4.5.1.2 Component Tests

4.5.1.2.1 Pumps

Quarterly, the high pressure and low pressure injection pumps shall be started and operated to verify proper operation. Acceptable performance will be indicated if the pump starts, operates for 15 minutes, and the discharge pressure and flow are within ± 10 percent of a point on the pump head curve. (Figures 4.5.1-1 and 4.5.1-2)

4.5.1.2.2 Valves - Power Operated

a. Valves LP-17, -18 shall only be tested every cold shutdown unless previously tested during the current quarter.

b. During each refueling outage, low pressure injection pump discharge (engineered safety features) valves, low pressure injection discharge throttling valves, and low pressure injection discharge header crossover valves shall be cycled manually to verify the manual operability of these power-operated valves.

4.5.1.2.3 Check Valves

Periodic individual leakage testing (a) of valves CF-12, CF-14, LP-47 and LP-48 shall be accomplished prior to power operation after every time the plant is placed in the cold shutdown condition for refueling, after each time the plant is placed in a cold shutdown condition for 72 hours if testing has not been accomplished in the preceding 9 months, and prior to returning the valve to service after maintenance, repair or replacement work is performed. Whenever integrity of these valves cannot be demonstrated, the integrity of the remaining valve in each high pressure line having a leaking valve shall be determined and recorded daily. In addition, the position of the other closed valve located in the high pressure piping shall be recorded daily. For the allowable leakge rates and limiting conditions for operation, see Technical Specification 3.1.6.10.

Bases

The Emergency Core Cooling Systems are the principle reactor safety featues in the event of loss of coolant accident. The removal of heat from the core provided by these systems is designed to limit core damage.

(a) To satisfy ALARA requirements, leakge may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capabble of demonstrating valve compliance with the leakage criteria.

(2) Verification of the engineered safety features function of the Low Pressure Service Water System which supplies coolant to the reactor building coolers shall be made to demonstrate operability of the coolers.

(b) The test will be considered satisfactory if control board indication verifies that all components have responded to the actuation signal properly, the appropriate pump breakers have completed their travel, fans are running at half speed, LPSW flow through each cooler exceeds 1400 GPM and air flow through each fan exceeds 40,000 CFM.

4.5.2.2 Component Tests

4.5.2.2.1 Pumps

Quarterly, the reactor building spray pumps shall be started and operated to verify proper operation. Acceptable performance will be indicated if the pump starts, operates for 15 minutes, and the measured discharge pressure and flow results in a point above the pump head curve. (Figure 4.5.2-1).

Bases

The Reactor Building Coolant System and Reactor Building Spray System are designed to remove heat in the containment atmosphere to control the rate of depressurization in the containment. The peak transient pressure in the containment is not affected by the two heat removal systems. Hence, the basis for the spray pump flow acceptance test is the flow rate required during recirculation (1,000 gpm).

The delivery capability of one reactor building spray pump at a time can be tested by opening the valve in the line from the borated water storage tank, opening the corresponding valve in the test line, and starting the corresponding pump. Pump discharge pressure and flow indication demonstrate performance.

With the pumps shut down and the borated water storage tank outlet closed, the reactor building spray injection valves can each be opened and closed by operator action. With the reactor building spray inlet valves closed, low pressure air or fog can be blown through the test connections of the reactor building spray nozzles to demonstrate that the flow paths are open.

The equipment, piping, valves, and instrumentation of the Reactor Building Cooling System are arranged so that they can be visually inspected. The cooling units and associated piping are located outside the secondary concrete shield. Personnel can enter the Reactor Building during power operations to inspect and maintain this equipment. The service water piping and valves outside the Reactor Building are inspectable at all times. Operational tests and inspections will be performed prior to initial startup.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-47

AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS NOS. 1, 2 AND 3

DOCKETS NOS. 50-269, 50-270 AND 50-287

1.0 Introduction

Notice was published in the Federal Register on February 16, 1976 that 10 CFR 50 was being revised by the incorporation of a new Section (50.55a) which requires all power reactor licensees to develop and maintain inservice inspection (ISI) and inservice testing (IST) programs. Duke Power Company (Duke or licensee) responded to this notice and the NRC's April 26, 1976 letter related to the implementation of 10 CFR 50.55a by application dated October 1, 1976 for the Oconee Nuclear Station (ONS) Unit 1. An application to incorporate similar provisions for Units 2 and 3 was submitted on July 8, 1977. The applications were revised on May 26, 1977, September 21, 1977 and April 27, 1978. A composite resubmittal for all Units was made on May 30, 1979. An additional supplement to this application was made on December 4, 1980.

These applications were for the combined ISI and IST programs. The NRC completed the review of the ONS ISI program and issued License Amendments 88, 88 and 85 on November 7, 1980. In addition to approving the modified ISI program, these amendments revised the Technical Specifications (TSs) to incorporate the provisions of the approved program. Therefore, this license amendment applies only to those areas of the applications related to the IST program.

2.0 Evaluation

In addition to the applications and revisions mentioned above, numerous conferences and meetings have been held with the licensee to reach agreement on an acceptable IST program. We have completed our review of the licensee's modified IST program and find it acceptable. The attached "Safety Evaluation Report - Inservice Testing Program" provides the details of our findings and presents the bases for granting relief from some Code requirements.

The approved inservice testing program includes relief from specific ASME Code requirements which were determined to be impractical for the ONS because of limited access due to design and radiation, geometry and materials of contruction of some components as discussed in the enclosed Safety Evaluation. We have determined that granting this relief is authorized by law and will not danger life or property or the common defense and security and is otherwise in the public interest.

We have also reviewed the TS changes submitted by Duke on May 30, 1979 and December 4, 1980. The May 30, 1979 application combined into one document the earlier applications and provided TSs which were consistent with the proposed ISI and IST programs. Those portions of this application related to the ISI program were approved and issued on November 7, 1980. The remaining portions have been reviewed and found to be in accordance with the approved IST program and are therefore acceptable. The December 4, 1980 application requested the deletion from the TSs of the testing requirements for the reactor vessel internal vent valves. We have reviewed the proposed IST program for these valves and found it acceptable (see Section 1.17 of the attached SER). Since these valves have been included in an approved IST program, we find the deletion of the duplicate requirements to be acceptable.

3.0 Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

4.0 Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Attachment: SER IST Program

Dated: March 25, 1982

Attachment

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

SAFETY EVALUATION REPORT

INSERVICE TESTING PROGRAM

1.0 VALVE TESTING PROGRAM EVALUATION

1.1 General Considerations

1.1.1 Testing of Valves Which Perform a Pressure Isolation Function

Several safety systems connected to the reactor coolant pressure boundary have design pressures below the reactor coolant system operating pressure. Redundant isolation valves within the Class 1 boundary forming the interface between these high and low pressure systems prevent the low pressure systems from pressures which exceed their design limit. In this role, the valves perform a pressure isolation function.

We view as important the redundant isolation provided by these valves. We consider it necessary to assure that the condition of these valves is adequate to maintain this redundant isolation and system integrity. For these reasons, we believe that some method, such as pressure monitoring, leak testing, radiography and ultrasonic testing should be used to assure the condition of each valve is satisfactory in maintaining this pressure isolation function.

If leak testing is selected as the appropriate method for achieving this objective, the staff believes that the following valves should be categorized as A or AC and leak tested in accordance with IWV-3420 of Section XI of the applicable edition of the ASME Code. These valves are:

CF-11, 12, 13, and 14 CFT discharge check valves
LP-1 DH isolation valve
LP-2 DH RB isolation valve
LP-47 and 48 LPI header check valves
LP-45 and 46 pressurizer aux, spray line valves
HP-126 and 127 HPI loop A check valves
HP-152 and 153 HPI loop B check valves

Any one of the two valves in each of the following sets:

HP-194 or HP-26 and HP-120-loop A injection
HP-27 or HP-188 loop B injections

We have discussed this matter with the licensee and identified the valves listed above. The licensee has agreed to consider testing and categorizing each of these valves with the appropriate designation depending on the testing method selected.

1.1.2 Stroke Testing of Check Valves

The staff stated its position to the licensee that check valves, whose safety function is to open, are expected to be full-stroked. If only limited operation is possible (and it has been demonstrated by the licensee and agreed to by the staff), the check valve shall be partial stroked. Since disk position is not always observable, the NRC staff stated that verification of the plant's safety analysis design flow rate through the check valve would be an adequate demonstration of the full-stroke requirement. Any flow rate less than design will be considered part-stroke exercising unless it can be shown that the check valve's disk position at the lower flow rate would be equivalent to or greater than the design flow rate through the valve. The licensee agreed to conduct flow test to satisfy the above position.

1.1.3 Stroke Testing of Motor Operated Valves

The licensee has requested relief from the part-stroke requirement of Section XI for all power operated valves. The licensee has stated that none of the Category A or B power operated valves identified below can be part-stroked because of the design logic of the operating circuits. These circuits are such that when an open or closed signal is received the valve must complete a full stroke before the relay is released to allow the valve to stroke in the other direction. We find that the above relief request from part-stroking is warranted and should be granted because the required function of the valves involves only full open or full closed positions. Therefore, we conclude that granting this relief does not endanger public health and safety.

1.1.4 Test Frequency of Check Valves Tested at Cold Shutdowns

The Code states that, in the case of cold shutdowns, valve testing need not be performed more often than once every three months for Category A and B valves and once every nine months for Category C valves. It is our position that Category C valves should be tested on the same schedule as Category A and B valves. This position is also in agreement with the current edition and addenda of the Code. The licensee has agreed to modify his procedures on cold shutdown to read, "In the case of frequent cold shutdowns, valve testing will not be performed more often than once every three (3) months for Category A, B and C valves."

1.1.5 Licensee Request for Relief to Test Valves at Cold Shutdown

The Code permits valves to be tested at cold shutdown, and the Code conditions under which this is permitted are noted in Appendix A. These valves are specifically identified by the licensee and are full stroked exercised during cold shutdowns; therefore, the licensee is meeting the requirements of the ASME Code. Since the licensee is meeting the requirements of the ASME Code, it will not be necessary to grant relief; however, during our review of the licensee's IST program, we have verified that it was not practical to exercise these valves during power operation and that we agree with the licensee's basis.

It should be noted that the staff differentiates for valve testing purposes between the cold shutdown mode and the refueling mode. That is, for testing purposes the refueling mode is not considered as a cold shutdown.

1.1.6 Exceptions to Testing Requirements

In a November 1976 letter to the licensee, we provided an attachment entitled "NRC Guidelines for Excluding Exercising (Cycling) Tests of Certain Valves During Plant Operation." The attachment stated that when one train of a redundant system such as in the Emergency Core Cooling System (ECCS) is inoperable, nonredundant valves in the remaining train should not be cycled since their failure would cause a loss of total system function. For example, during power operation in some plants, there are stated minimum requirements for systems which allow certain conditions to exist for some period of time and if the system is not restored to meet the requirements within the time period specified in a plant's Technical Specifications (TSs), the reactor is required to be put in some other mode. During this period of time, it is the NRC's position that nonredundant valves in the operable train not be cycled solely for the purpose of fulfilling IST requirements.

1.1.7 Safety Related Valves

This review was limited to safety-related valves. Safety-related valves are defined as those valves that are needed to mitigate the consequences of an accident and/or to shutdown the reactor and to maintain the reactor in a shutdown condition. Valves in this category would typically include certain ASME Code Class 1, 2 and 3 valves and could include some non-code Class valves.

It should be noted that the licensee may have included non-safety related valves in their Inservice Test Program as a decision on the licensee's part to expand the scope of their program.

1.1.8 Valve Testing at Cold Shutdown

Inservice valve testing at cold shutdown is acceptable when the following conditions are met: It is understood that the licensee is to commence testing

within two hours after the cold shutdown condition is achieved but not later than 48 hours after shutdown and continue until complete or plant is ready to return to power. Completion of all valve testing is not a prerequisite to return to power. Any testing not completed at one cold shutdown should be performed during any subsequent cold shutdowns that may occur before refueling to meet the Code specified testing frequency.

For planned cold shutdowns, where the licensee will complete all the valves identified in his IST program for testing in the cold shutdown mode, exceptions to the above 48 hours may be taken.

1.1.9 Category A Valve Leak Check Requirements for Containment Isolation Valves (CIV)

All CIVs shall be classified as Category A valves. The Category A valve leak rate test requirements of IWV-3420(a-e) have been superseded by Appendix J requirements for CIVs. The staff has concluded that the applicable leak test procedures and requirements for CIVs are determined by 10 CFR 50 Appendix J. Relief from paragraph IWV-3420(a-e) for CIVs presents no safety problem since the intent of IWV-3420(a-e) is met by Appendix J requirements.

The licensee shall comply with Sections f and g of IWV-3420 until relief is requested from these paragraphs. It should be noted that these paragraphs are only applicable where a Type C Appendix J leak test is performed.

Based on the considerations discussed above the staff concludes that the alternate testing proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger life or property or the common defense and security of the public.

1.1.10 Application of Appendix J Testing to the IST Program

The Appendix J review for this plant is a completely separate review from the IST program review. However, the determinations made by that review are directly applicable to the IST program. Our review has determined that the current IST program as submitted by the licensee correctly reflects our interpretation of Section XI vis-a-vis Appendix J. The licensee has agreed that, should the Appendix J program be amended, they will amend their IST program accordingly.

1.2 High Pressure Injection (HP) System

1.2.1 Category A or A/C Valves

1.2.1.1 Relief Request

The licensee has requested relief from exercising manual valves HP-155 and 156, fill and make-up from HPI containment isolations.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.2.1.2 Relief Request

The licensee has requested relief from exercising valves HP-126 and 127, HPI loop A check valves in the normal make-up line in accordance with the requirements of Section XI and proposed to partial stroke exercise these valves following each cold shutdown and full stroke exercise these valves during refueling outages:

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

Full stroke exercising cannot be verified during power operation due to their physical location inside the secondary shield inside the reactor building. Partial stroke exercising these valves is accomplished following each cold shutdown when normal reactor make-up water flow is established. Full stroke exercising can only be accomplished during refueling outages when the reactor vessel head is removed. Removing the reactor vessel head provides the required expansion volume for full flow/full stroke exercising these check valves.

Evaluation

The licensee has demonstrated that testing these valves during power operation is impractical because they are parallel stop check valves located inside the reactor compartment. Testing these valves requires manually closing one valve at a time to ensure that the other valve has been exercised. Partial stroke-exercising following each cold shutdown when make-up flow is established is completed prior to reactor power operations. Full stroke exercising can only be accomplished during refueling outages when the vessel head is removed to provide the required expansion volume for full flow/full stroke testing.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code-permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.2.1.3 Relief Request

The licensee has requested relief from exercising valves HP-152 and 153, HPI loop B check valves in the emergency make-up line, in accordance with the requirements of Section XI and proposed to full stroke exercise these valves during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves cannot be exercised during power operation or cold shutdowns because the emergency make-up water line is filled with highly borated (~ 1800 ppm boron) water. Injecting borated water during power operation could cause uncontrollable reactivity changes and power transients which could cause a reactor trip. Injecting borated water during cold shutdowns would generate excessive waste and delay reactor start-up due to primary system boron clean-up. These valves will be full stroke exercised during refueling outages when the reactor vessel head is removed.

Evaluation

The licensee has demonstrated that testing these valves during reactor power operations and cold shutdowns is impractical due to the power transients, uncontrolled reactivity changes and the delay in start-up due to the clean-up requirements after injecting highly borated water (~ 1800 ppm boron) into the

primary system. Exercising these valves is only practical during refueling outages, when clean-up requirements and reactivity changes are not a problem and when the reactor vessel head is removed to accommodate the large volume of water necessary to full stroke exercise these valves.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.2.2 Category C Valves

1.2.2.1 Relief Request

The licensee has requested relief from exercising valve HP-194, HPI loop A check valve in the normal make-up line, in accordance with the requirements of Section XI and proposed to partial stroke exercise this valve during power operation and full stroke exercise this valve during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

This valve is partial stroke exercised during power operation each time normal make-up flow is initiated. This valve can only be full stroke exercised during refueling outages when the reactor vessel head is removed.

Evaluation

The licensee has demonstrated that full stroke exercising this valve at times other than refueling outages is impractical. Due to the large volume of water

required to full stroke exercise this valve, the reactor vessel head must be removed and the refueling water cavity will provide the expansion volume for this test. During cold shutdowns or power operations an over-pressurization accident could occur due to the lack of an available expansion volume.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for this valve, occur every 12 to 24 months which is within the optimum range for operability testing.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.2.2.2 Relief Request

The licensee has requested relief from exercising valve HP-188, HPI loop B check valve in the emergency make-up line, in accordance with the requirements of Section XI and proposed to full stroke exercise this valve during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

This valve cannot be exercised during power operation or cold shutdowns because the emergency make-up water line is filled with highly borated (~ 1800 ppm boron) water. Injecting this borated water during power operation could cause uncontrollable reactivity changes and power transients which could cause a reactor trip. Injecting this borated water during cold shutdowns would generate excessive waste and delay reactor start-up for primary system boron clean-up. This valve will be full stroke exercised during refueling outages when the reactor vessel head is removed.

Evaluation

The licensee has demonstrated that testing this valve during reactor power operations and cold shutdowns is impractical due to the power transients, uncontrolled reactivity changes and the delay in start-up due to the clean-up requirements after injecting highly borated water into the primary system. Exercising this valve is only practical during refueling outages, when clean-up requirements and reactivity changes are not a problem and when the reactor vessel head is removed to accommodate the large volume of water necessary to full stroke exercise this valve.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for this valve, occur every 12 to 24 months which is within the optimum range for operability testing.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.2.2.3 Relief Request

The licensee has requested relief from exercising valves HP-101 and 102, HPI pumps A and C suctions from BWST, in accordance with the requirements of Section XI and proposed to full stroke exercise these valves during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves cannot be exercised during power operation or cold shutdowns without injecting highly borated BWST water (~ 1800 ppm boron) into the primary system resulting in power transients and possible reactor trips or delaying start-ups due to the extensive boron clean-up prior to power operation. These valves will be full stroke exercised during refueling outages.

Evaluation

The licensee has demonstrated that injecting highly borated water (~ 1800 ppm boron) during power operations or cold shutdowns is impractical for valve testing. Late in core life, injecting BWST water could cause rapid power transients and consequent reactor trips or extensive feed and bleed requirements to lower boron concentration and allow reactor start-ups. Full stroke exercising these valves is only practical during refueling outages when power transients and clean-up requirements are not a problem.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.2.2.4 Relief Request

The licensee has requested relief from exercising valves HP-105, 109, and 113, HPI pumps A, B, and C discharge check valves, in accordance with the requirements of Section XI and proposed to partial stroke exercise these valves monthly during pump testing and full stroke exercise these valves during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves will be partial stroke exercised monthly during pump testing through recirculation lines. Due to the large flow required to full stroke exercise these valves, an overpressurization could occur during cold shutdown

valve testing. These valves will be full stroke exercised during refueling outages when the reactor vessel head is removed. Removing the vessel head provides the required expansion volume for full flow/full stroke testing.

Evaluation

The licensee has demonstrated that full stroke exercising these valves can only be accomplished during refueling outages when the reactor vessel head is removed. Due to the large volume of water required to full stroke exercise these, the reactor vessel head must be removed to prevent an over-pressurization accident. An over-pressurization could occur if these valves were exercised during cold shutdowns. Partial stroke exercising is possible during plant operation concurrent with monthly pump testing.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.3 Core Flood (CF) System

1.3.1 Category A Valves

The licensee has requested relief from exercising and stroke timing power operated valves CF-3 and 4, CFT sample and drains.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, power operated containment isolation valves are passive valves in the position required to perform their safety function.

Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.3.1.2 Relief Request

The licensee has requested relief from exercising manual valves CF-7, CFT to MWHUT, CF-19, CFT to sample sink, CF-33 and 36, CFT to vent header, and CF-35, CFT vent WG filter.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.3.2 Category C Valves

1.3.2.1 Relief Request

The licensee has requested relief from exercising valves CF-11, 12, 13, and 14, CFT discharge checks, in accordance with the requirements of Section XI and proposed to partial stroke exercise these valves during cold shutdowns.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves cannot be exercised during power operation due to the system dP across these valves to the primary system. CF-12 and 14 can only be partial stroke exercised during cold shutdowns and refueling outages when RHR flow is established. CF-11 and 13 can only be partial stroke exercised during each heat-up from cold shutdown and refueling outages when primary system pressure is slightly less than CFT pressure. CF-11 and 13 cannot be exercised during refueling outages due to the possibility of airborne and surface contamination resulting from surge spray.

Evaluation

The licensee has demonstrated that due to the differential pressure across these valves, exercising during power operation is impractical. CF-12 and 14 can only be partial stroke exercised during cold shutdowns when RHR flow is established. Maximum RHR flow is not capable of full stroke exercising CF-12 and 14. CF-11 and 13 cannot be full stroke exercised during cold shutdowns due to the possibility of an over-pressurization accident because of the large volume of water required. CF-11 and 13 cannot be exercised when the vessel head is removed due to the possibility of airborne and surface contamination and hydraulic shock to core internals resulting from uncontrolled surge spray during core flood initiation. CF-11 and 13 are partial stroke exercised during each heat-up from cold shutdown and refueling outage when primary system pressure is slightly less than CFT pressure. The staff agrees that the proposed partial stroke exercising of these valves is the only test possible with present piping configurations.

Conclusion

We conclude that testing in accordance with the ASME Code is impractical. In addition, by Order dated April 20, 1981, increased leakage testing requirements were incorporated into the TSs. Therefore, this relief should be granted since sufficient assurance exists that the public health and safety will not be endangered.

1.3.2.2 Relief Request

The licensee has requested relief from exercising valves LP-29 and 30, BWST to LPI header checks, from the exercising requirements of Section XI and proposed to partial stroke exercise these valves during the LPI pump tests.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves can only be partial stroke exercised monthly, approximately 67% of rated flow, during LPI pump testing. These valves cannot be full stroke exercised during cold shutdowns or refueling outages because of the limited LPI pump flow.

Evaluation

The licensee has demonstrated that due to the installed piping configuration, full stroke exercising is impractical and partial stroke exercising during

LPI pump testing is the only possible means to exercise these valves. Pump flow of 3000 gpm will require full LPI and RBS flow simultaneously which cannot be accomplished due to a common LPI and RBS pumps recirc line to the BWST.

Conclusion

We conclude that testing in accordance with the ASME Code is impractical. Therefore, we have determined that the proposed relief will not decrease the level of plant safety or endanger the public health or safety and thus should be granted.

1.4 Reactor Building Spray (BS) System

1.4.1 Category C Valves

1.4.1.1 Relief Request

The licensee has requested relief from exercising BS-5 and 6, RBS pump A and B suction checks, and BS-11 and 16, RBS pump A and B discharge checks, in accordance with the requirements of Section XI and proposed to partial stroke exercise these valves monthly with recirc flow during pump testing.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves can only be partial stroke exercised due to the 3" recirculation line which limits system flow to approximately 1200 gpm instead of the design flow of 1500 gpm.

Evaluation

The licensee has demonstrated that due to the present piping configuration and recirculation line size these valves can only be partial stroke exercised to approximately 80% of safety analysis flow. Full stroke exercising would require spraying the containment with borated water resulting in lagging and electrical equipment damage.

Conclusion

We conclude that testing in accordance with the ASME Code is impractical. Therefore, we have determined that the proposed relief will not decrease the level of plant safety or endanger the public health or safety and thus should be granted.

1.4.1.2 Relief Request

The licensee has requested relief from exercising valves BS-14 and 19, RBS discharge checks, in accordance with the requirements of Section XI and proposed to partial stroke exercise these valves every 5 years using air.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves are welded in place and have built-in system redundancy with two RB coolers, pumps and independent spray headers. These valves can only be exercised using air flow which is done every 5 years per the plant technical specifications.

NRC Evaluation

Full stroke exercising with a liquid medium would require spraying the containment with borated water resulting in lagging and electrical equipment damage. Furthermore, the piping configuration in this system is such that these valves do not have a means to test except using air flow. However, we feel that the proposed test should be performed at more frequent intervals. As a result of discussions with the licensee, agreement was reached that these valves will be stroke tested using air at least once each refueling interval.

Conclusion

We conclude that testing in accordance with the ASME Code is impractical. Therefore, we have determined that the stroke testing with air at least once per refueling interval will not decrease the level of plant safety or endanger the public health or safety and thus should be granted.

1.5 Spent Fuel Cooling (SF) System

1.5.1 Category A Valves

1.5.1.1 Relief Request

The licensee has requested relief from exercising manual valves SF-60 and 61, fuel transfer canal fill valves.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.6 Filtered Water (FW) System

1.6.1 Category A Valves

1.6.1.1 Relief Request

The licensee has requested relief from exercising manual valves FW-64 and 65, filtered water to RB.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.7 Demineralized Water (DW) System

1.7.1 Category A Valves

1.7.1.1 Relief Request

The licensee has requested relief from exercising manual valves DW-59 and 60, DW to RB.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the

plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.7.2 Category A/C Valves

1.7.2.1 Relief Request

The licensee has requested relief from exercising valves DW-155 and 156, reactor coolant pump DW supply isolation checks, in accordance with the requirements of Section XI and proposed to exercise these valves open quarterly and exercise these valves closed during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These check valves can be shown open by the normal flow of demineralized water required to rinse off borated water seepage through the RCP seals preventing boron crystal buildup. A leak rate test is required to verify valve closure and will be performed annually during refueling outages.

NRC Evaluation

The licensee has demonstrated that no installed test provisions are available for these valves and that valve closure, full stroke exercising, can only be verified during a leak rate test which is performed during refueling outages.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.8 Coolant Storage (CS) System

1.8.1 Category A/C Valves

1.8.1.1 Relief Request

The licensee has requested relief from exercising valves CS-11 and 12, QT recirc checks, in accordance with the requirements of Section XI and proposed to exercise these valves open quarterly and exercise these valves closed during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These check valves can be shown open by normal periodic recirculation of the quench tank. The safety function of these valves is to shut on reversal of flow. A pneumatic leak rate test is required to verify valve closure. This leak rate test is performed annually during each refueling outage.

NRC Evaluation

The licensee has demonstrated that the only time valve closure, full stroke exercising, can be verified is during a pneumatic leak rate test. This leak rate test is performed during refueling outages.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.9 Liquid Waste Disposal (LWD) System

1.9.1 Category A Valves

1.9.1.1 Relief Request

The licensee has requested relief from exercising manual valves LWD-99 and 103, RB sump to HAWT.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.10 Feedwater (FDW) System

1.10.1 Category A Valves

1.10.1.1 Relief Request

The licensee has requested relief from exercising and stroke timing power operated valves FDW-103 and 104, Once Through Steam Generator (OTSG) drains.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, power operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.10.2 Category C Valves

1.10.2.1 Relief Request

The licensee has requested relief from exercising valves FDW-93, 94, 95, 99, 101, 39, 48, 232 and 233, Emergency FDW to OTSG, in accordance with the requirements of Section XI and proposed to full stroke exercise these valves during refueling outages.

Code Requirements

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves cannot be exercised during power operation without thermal shocking the OTSG's. Exercising these valves during cold shutdown would require injection of O_2 saturated water into the OTSG's and subsequently cause a delay in reactor startup.

NRC Evaluation

The licensee has demonstrated that testing these valves during power operations and cold shutdowns is impractical. The EFDW pump supplies unheated condensate to the steam generators. Injecting cold water into the OTSG's causes undue thermal stresses on the OTSG tubes and could lead to potential tube leakage. Also, injecting O_2 saturated unheated condensate into the OTSG would delay reactor start-ups due to time required to reestablish proper OTSG water chemistry.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.11 Nitrogen Purge and Blanket (N) System

1.11.1 Category A Valves

1.11.1.1 Relief Request

The licensee has requested relief from exercising manual valves N-106, 107, 116, 119, 128, and 130, N_2 isolations.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.12 Chemical Addition (CA) System

1.12.1 Category A Valves

1.12.1.1 Relief Request

The licensee has requested relief from exercising manual valves CA-27 and 29, fill and make-up from CA containment isolations.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.13 Breathing Air (BA) System

1.13.1 Category A Valves

1.13.1.1 Relief Request

The licensee has requested relief from exercising manual valves BA-5 and 33, BA containment isolations.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.14 Component Cooling (CC) System

1.14.1 Category A/C Valves

1.14.1.1 Relief Request

The licensee has requested relief from exercising valves CC-20, 24, 76, and 77, CC to RCP's, CRD service structures, and letdown coolers, in accordance

with the requirements of Section XI and proposed to verify valves open quarterly and to verify valve closure during refueling outages.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves are normally open during power operation. Their safety function is to seal on reversal of flow. Valve closure and verification of leak tightness can only be accomplished during the pneumatic leak rate test that is performed annually during each refueling outage.

NRC Evaluation

The licensee has demonstrated that verifying valve closure, full stroke exercising, is only possible during the pneumatic leak rate test. This test cannot be accomplished during power operation because constant CC flow is required for the safe operation of serviced components.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand in less than or equal to 10^{-4} per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

1.15 Leak Rate Test (LRT) System

1.15.1 Category A Valves

1.15.1.1 Relief Request

The licensee has requested relief from exercising manual valves LRT-24, 25, 38, 39, leak rate test isolations.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.16 Instrument Air (IA) System

1.16.1 Category A Valves

1.16.1.1 Relief Request

The licensee has requested relief from exercising manual valves IA-90 and 91, instrument air to reactor building.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These normally shut, manually operated containment isolation valves are passive valves in the position required to perform their safety function.

NRC Evaluation

These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function which they perform.

Conclusion

We conclude that the quarterly stroke testing is meaningless for these valves and the relief should be granted. This relief does not endanger public health and safety.

1.17 Reactor Coolant System

1.17.1 Category C Valves

1.17.1.1 Relief Request

The licensee has requested relief from exercising the eight reactor vessel internal check valves in accordance with the requirements of Section XI and proposed to full-stroke exercise these valves at refueling.

Code Requirement

Refer to Appendix A.

Licensee's Basis for Requesting Relief

These valves are inaccessible during normal operation and cold shutdown conditions. They are located within the reactor vessel and are only accessible for testing during refueling outages.

Evaluation

We agree with the licensee that testing these valves during power operation and cold shutdown is impractical since they are not able to see the valves and have them available to test by applying a mechanical load. Testing is only possible with the head off the reactor vessel.

Check valves are found to be low in failure rate. "Low in failure rate" has been defined as any component whose unavailability upon demand is less than or equal to 10-4 per demand.

The optimum test interval for operability testing "low in failure rate" valves was determined by the staff using actual valve failure rate data and standard probabilistic techniques to be in the range of 3 months to 27 months.

Refueling intervals, which have been proposed as the test intervals for these valves, occur every 12 to 24 months which is within the optimum range for operability testing of these valves.

The ASME Code, which requires testing be done quarterly and which has been adopted in 10 CFR 50.55a, also allows testing at cold shutdowns if quarterly testing is impractical. Cold shutdowns can occur at intervals up to refueling outages. Therefore, changing the test interval from quarterly to refueling does not differ significantly from the Code-permitted change from quarterly to cold shutdown testing.

Conclusion

Based on the considerations discussed above, the staff concluded that the alternate testing frequencies proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger public health and safety.

2.0 Pump Testing

The IST program submitted by Duke Power Company was examined to verify that all safety related pumps were included in the program and that those pumps are subjected to the periodic tests as required by the ASME Code, Section XI. All safety related pumps were found to be included in the IST program and, except for those pumps identified below for which specific relief from testing has been requested, the pump tests and frequency of testing comply with the code. Each Duke Power request for relief from testing pumps, the code requirement for testing, Duke Power's basis for requesting relief, and the NRC's evaluation of that request is summarized below and grouped according to the system in which the pumps reside:

2.1 Low Pressure Injection (LPI) Pumps 1A, 2A, and 3A

Relief Request

The licensee has requested specific relief from the Section XI requirement to measure pump parameters monthly.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

During normal plant operation, LPI pumps 1A, 2A, and 3A can only be tested using a 3" recirculation line to the BWST which limits flow to approximately 1150 to 1550 gpm. Normal system flow is 3000 gpm. At this low flow, the installed flow and differential pressure instrumentation lacks the required accuracy and, due to the pump head curve characteristics, repeatability for meaningful testing is not assured. These pumps will be tested during cold shutdowns and refueling outages when the DHR system is in operation.

NRC Evaluation

The NRC staff agrees with the licensee's basis and therefore feels relief should be granted from the Section XI requirement to measure pump parameters monthly. The licensee has demonstrated that due to the present piping configuration, meaningful testing data can only be obtained during cold shutdowns and refueling outages when full system flow is established. The staff feels that alternate testing at cold shutdown is acceptable.

2.2 Spent Fuel Pool Cooling (SF) Pumps 1A, 1B, 3A, and 3B

Relief Request

The licensee has requested specific relief from the Section XI requirement to measure inlet pressure (P_i) and differential pressure (dP) for SF pumps 1A, 1B, 3A, and 3B.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

Instrumentation to directly measure P_i and dP does not exist. P_i is calculated using the fuel pool water level along with known station head differences from "0" level to the pump suction. dP will be calculated using installed pump outlet pressure instrumentation and calculated P_i.

NRC Evaluation

The NRC staff agrees with the licensee's basis and therefore feels relief should be granted from the Section XI requirement to directly measure P_i and dP. The licensee has demonstrated that alternate methods do exist to evaluate pump performance and that plant modifications would be impractical. The staff

feels that calculating P_i and dP is an acceptable alternate method.

2.3 Concentrated Boric Acid (CBA) Pump

2.3.1 Relief Request

The licensee has requested specific relief from the Section XI requirement to measure inlet pressure (P_i) and differential pressure (dP) for the CBA pump.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

Instrumentation to directly measure P_i and dP does not exist. P_i is calculated using the CBA storage tank level along with known station head differences from "0" level to the pump suction. dP will be calculated using installed pump outlet pressure instrumentation and calculated P_i.

NRC Evaluation

The NRC staff agrees with the licensee's basis and therefore feels relief should be granted from the Section XI requirement to directly measure P_i and dP. The licensee has demonstrated that alternate methods do exist to evaluate pump performance and that plant modifications would be impractical. The staff feels that calculating P_i and dP is an acceptable alternate method.

2.3.2 Relief Request

The licensee has requested specific relief from the Section XI requirement to measure flowrate (Q) for the CBA pump.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operations. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

Instrumentation to directly measure flowrate (Q) for the CBAP does not exist. The CBAP is normally run in a recirculation mode. Transfer of sufficient fluid to produce a measurable tank level change cannot be accomplished during plant operation or cold shutdowns without the generation of excessive waste. CBA pump flowrate will be calculated from measuring storage tank level changes during refueling outages when full flow can be established without waste generation.

NRC Evaluation

The NRC staff agrees with the licensee's basis and therefore feels relief should be granted from the Section XI requirement to measure flowrate (Q) for the CBA pump. The licensee has demonstrated that the generation of waste during plant operation and cold shutdowns for the purpose of testing is impractical. Plant modifications are also impractical. The staff feels that flowrate verification during refueling outages and the observation of all other parameters monthly (except lube oil level) will assure proper CBA pump operability and will not significantly reduce the level of plant safety.

2.3.3 Relief Request

The licensee has requested specific relief from the Section XI requirement to measure CBA pump lube oil level.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all

quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

Instrumentation to directly measure lube oil level or pressure does not exist. The CBA pump requires partial disassembly to verify lube oil level. Due to the time requirements for disassembly and the increased risk of lubricant contamination, the lube oil level will be checked semi-annually in conjunction with regularly performed pump surveillance tests.

NRC Evaluation

The NRC staff agrees with the licensee's basis and therefore feels relief should be granted from the Section XI requirement to measure CBA pump lube oil level. The licensee has demonstrated that measuring lube oil level more often than semi-annually is impractical. The staff feels that semi-annual pump disassembly to measure lubricant level is sufficient to assure proper lube oil level and pump operability and that modifications would not significantly increase the level of plant safety. Furthermore, the staff feels that monthly level checks would only increase the possibility of lube oil contamination and increase the amount of time the CBA pump would be unavailable to perform its safety function.

2.4 Auxiliary Service Water Pump

Relief Request

The licensee has requested specific relief from the Section XI requirements to measure inlet pressure (P_i), differential pressure (dP), and flowrate (Q).

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

Instrumentation to directly measure P_i, dP, and Q does not exist. The auxiliary service water system is designed for decay heat removal following a concurrent loss of the main feedwater system, auxiliary feedwater system, and the decay heat removal system. Plant modifications are not practical due to the limited safety functions of this system.

NRC Evaluation

The NRC staff agrees with licensee's basis and therefore feels relief should be granted from the Section XI requirements to measure P_i, dP, and Q for the auxiliary service water pump. The licensee has demonstrated that plant modifications to measure P_i, dP, and Q would be impractical. The staff feels that because this system is only required after the concurrent failure of the main feedwater, auxiliary feedwater, and decay heat removal safety systems and since all other pump parameters are measured monthly, the proposed testing is acceptable.

2.5 Low Pressure Service Water (LPSW) Pump 3B

Relief Request

The licensee has requested specific relief from the Section XI requirement to measure flowrate (Q) for LPSW pump 3B.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

The LPSW pumps supply two headers, LPA and LPB. A header can be isolated for testing flow through A pump. B pump flow cannot be measured since B header supplies all essential loads which can't be isolated. Neither can B pump be lined up to A header.

NRC Evaluation

The NRC staff agrees with the licensee's basis, and therefore feels relief should be granted from the Section XI requirement to measure Q for LPSW pump 3B. The licensee has demonstrated that plant modification to measure Q would be impractical. The staff feels that since all other pump parameters are measured monthly, and since the ability of this pump to supply all essential cooling loads on B header is continuously monitored, the level of plant safety and pump performance is acceptably provided.

APPENDIX A

Code Requirements

Subsection IWV-3410(a) of the 1974 Edition of the Section XI ASME Code (which discussed full stroke and partial stroke requirements) requires that Code Category A and B valves be exercised once every three months, with exceptions as defined in IWV-3410(b)(1), (e) and (f). IWV-3520(a) (which discusses full-stroke and partial-stroke requirements) requires that Code Category C valves be exercised once every three months, with exceptions as defined in IWV-3520(b). In the above cases of exceptions, the Code permits the valves to be tested at cold shutdown where:

(a) It is not practical to exercise the valves to the position required to fulfill their function or to the partial position during power operation.

(b) It is not practical to observe the operation of the valves (with failsafe actuators) upon loss of actuator power.

Subsection IWV-3410(c) requires all Category A and B power operated valves to be stroke time tested to the nearest second or 10% of the maximum allowable owner-specified stroke time.

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-269, 50-270 AND 50-287

DUKE POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES AND GRANTING OF RELIEF FROM ASME SECTION XI INSERVICE TESTING REQUIREMENTS

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 109, 109 and 106 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, issued to Duke Power Company (the licensee), which revised the Technical Specifications (TSs) for operation of the Oconee Nuclear Station, Units Nos. 1, 2 and 3, located in Oconee County, South Carolina. The amendments are effective as of the date of issuance.

These amendments incorporate the provisions of the approved inservice testing (IST) program into the TSs.

By letter dated March 25, 1982, as supported by the related Safety Evaluation, the Commission has also granted to the licensee relief from certain requirements of the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components". The relief relates to the inservice testing program for the Station. The ASME Code requirements are incorporated by reference into the Commission's rules and regulations in 10 CFR Part 50. The relief is effective as of its date of issuance.

The applications for the amendments and requests for relief comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules

and regulations in 10 CFR Chapter I, which are set forth in the license amendments and letter granting relief. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments and the granting of this relief will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this action.

For further details with respect to this action, see (1) the applications for amendments dated October 1, 1976 and July 8, 1977, as supplemented on May 26 and September 21, 1977, March 6 and April 27, 1978, May 15, May 30, and July 16, 1979 and December 4, 1980, (2) Amendments Nos. 109 , 109 , and 106 to Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, (3) the Commission's related Safety Evaluation and (4) the Commission's letter to the licensee dated March 25, 1982. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Oconee County Library, 501 West Southbroad Street, Walhalla, South Carolina. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 25th day of March 1982.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing