Progress Energy

10 CFR 50.55a

Serial: RNP-RA/03-0125

OCT 07 2003

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

INSERVICE TESTING PROGRAM
RELIEF REQUEST IST-RR-8 FOR COMPREHENSIVE TESTS

Ladies and Gentlemen:

In accordance with 10 CFR 50.55a(a)(3)(i), H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, requests relief from the requirements of the American Society of Mechanical Engineers (ASME) Code for Operations and Maintenance of Nuclear Power Plants (OM Code), 1995 Edition with 1996 Addenda. Specifically, relief is requested from Subsection ISTB 4.2(c), which requires performance of Comprehensive Tests in accordance with ISTB 5.2.3 at an inservice test frequency specified by Table ISTB 5.1-1.

In this regard, please find attached the supporting details and technical information associated with HBRSEP, Unit No. 2, Relief Request IST-RR-8. This relief, if approved, would obviate the need for Comprehensive Tests for pumps that are tested within ±20% of design flow during the quarterly Group A test.

In order to support timely implementation of forthcoming tests in February 2004, it is respectfully requested that NRC review of this relief request be completed by January 16, 2004.

If you have any questions regarding this matter, please contact me.

Sincerely,

C. T. Baucom
Supervisor – Licensing/Regulatory Programs

Progress Energy Carolinas, Inc.
Robinson Nuclear Plant
3581 West Entrance Road
Hartsville, SC 29550

CTB/jwv

Attachment

c: Mr. L. A. Reyes, NRC, Region II
Mr. C. P. Patel, NRC, NRR
NRC Resident Inspectors

PROGRESS ENERGY CAROLINAS, INC.

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

10 CFR 50.55a RELIEF REQUEST IST-RR-8

RELIEF REQUESTED
IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)

--PROPOSED ALTERNATIVE WOULD PROVIDE
AN ACCEPTABLE LEVEL OF QUALITY AND SAFETY--

1. ASME Code Components Affected

Service Water Pump A (SW-A)
Service Water Pump B (SW-B)
Service Water Pump C (SW-C)
Service Water Pump D (SW-D)
Service Water Booster Pump A (SWBP-A)
Service Water Booster Pump B (SWBP-B)
Component Cooling Water Pump A (CCW-A)
Component Cooling Water Pump B (CCW-B)
Component Cooling Water Pump C (CCW-C)
Boric Acid Transfer Pump A (BA-A)
Boric Acid Transfer Pump B (BA-B)
Safety Injection Pump A (SI-A)
Safety Injection Pump B (SI-B)
Safety Injection Pump C (SI-C)
Containment Spray Pump A (CS-A)
Containment Spray Pump B (CS-B)
Chemical Volume Control System Charging Pump A (CVCS-A)
Chemical Volume Control System Charging Pump B (CVCS-B)
Chemical Volume Control System Charging Pump C (CVCS-C)

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Code for Operations and Maintenance of Nuclear Power Plants (OM Code), 1995 Edition with 1996 Addenda.

3. Applicable Code Requirement

The ASME OM Code, Subsection ISTB 4.2(c), requires performance of Comprehensive Tests in accordance with ISTB 5.2.3 at an inservice test frequency specified by Table ISTB 5.1-1.

4. Reason for Request

H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, requests relief from the requirements of ISTB 4.2(c), such that the Comprehensive Test requirements may be eliminated for those pumps that are tested to within ±20% of design flow during the quarterly Group A test.

The ASME OM Code, ISTB 5.2.3, requires that a Comprehensive Test be conducted at a specified reference point. ISTB 4.3(e)(1) requires that this reference point be established

within ±20% of the design flow rate. The test must be conducted biennially in accordance with Table ISTB 5.1-1.

In addition to the requirement to conduct the Comprehensive Test at design flow rate, the Comprehensive Test requirements differ from the Group A hydraulic test requirements as follows:

- The Comprehensive Test requirements specify that the pressure and differential pressure measurements be accurate to 0.5%, instead of 2% (OM Code, Table ISTB 4.7.1-1).
- The Comprehensive Test requirements employ more restrictive acceptance criteria, primarily for upper limits (improved performance) (OM Code, Tables ISTB 5.2.1-2 and ISTB 5.2.3-1).

The ASME OM Code requires pumps to be tested every two years within 20% of design flow conditions to provide increased assurance of pump operational readiness.

The conduct of the quarterly Group A test at design flow rates provides a better continuous overall assessment of functional capability when compared to the Code-required quarterly test at flow conditions other than ±20% of design flow rate, even when supplemented with the biennial Comprehensive Test.

The test requirements for vibration, including the acceptance limits applicable to the Comprehensive Test and Group A tests, are identical. Using test flow rates within ±20% of the design flow rates will improve detection capabilities because at lower flow rates flow noise may adversely impact the ability to detect degrading pump condition. Testing at flow rates within ±20% of the design flow rates improves detection capabilities associated with mechanical and hydraulic condition.

The required action limits are identical for the Comprehensive Test and Group A vibration test requirements. In addition, the required action low limits are identical for Comprehensive Test and Group A hydraulic test requirements. However, the Comprehensive Test hydraulic acceptance criteria contain smaller band alert thresholds that are dependent on the pump type. If measured test parameters exceed the alert range limits, the frequency of Comprehensive Tests must be doubled until the cause is determined and the condition is corrected.

The Comprehensive Test and Group A test hydraulic upper acceptance limits comprise the most significant difference. The Comprehensive Test upper hydraulic acceptable limit is 1.03 times the reference value, while the Group A test upper acceptable limit is 1.10 times the reference value. Prior to the 1990 OM Code, the ASME Code established a limit of 1.03 times the reference value for quarterly tests, which was subsequently increased to the current 1.10 times the reference value for non-comprehensive testing.

An upper limiting value of 3% above the reference value does not support improvements to detection of a degrading pump condition. Additionally, this criteria can create undue hardship because the OM Code does not allow pumps that exceed the acceptance limit to return to operable status unless the cause for the deviation is known and the condition is corrected. It is often difficult to determine a specific cause for the condition when a pump marginally exceeds the upper limit. In addition to nominal test uncertainties (meter increments, parallax error, test condition deviations, and fluctuation of data during acquisition), a reference value may have been established with the instrument biased on the low side of the allowable range. Subsequent tests may use the same or similar instruments biased on the high side of the allowable span. The singular or cumulative effects of these conditions make the imposition of a 3% upper limit impractical and unwarranted.

Implementation of a Group A test and Comprehensive Test at identical reference conditions creates the potential situation where a quarterly Group A test is completed and found within the established test acceptance criteria. However, if the test data falls outside the allowable range established for the Comprehensive Test, even though the Comprehensive Test was not being performed, there is no clear direction on how to proceed.

Group A and Comprehensive Test reference values at different operating points could create an adverse effect during maintenance when post maintenance tests may be required for both test points to confirm or establish reference values, leading to increased use of manpower, additional equipment cycling, and a reduction in the overall availability of safety-related equipment.

The list of components affected includes two Group B pumps (Containment Spray Pumps A and B). These pumps are currently being tested in accordance with the more restrictive Group A requirements, although a Comprehensive Test for these pumps has not yet been completed and is due to be performed during the Spring 2004 refueling outage. The Group A and Group B test intervals are the same, and the difference between the Group A and Group B test parameters is that Group B does not require vibration measurements for centrifugal pumps during a non-comprehensive test. However, because HBRSEP, Unit No. 2, is currently testing these pumps to the more restrictive Group A parameters, these pumps are also included in the requested relief.

The proposed alternative will allow HBRSEP, Unit No. 2, to more adequately and uniformly assess pump performance. Therefore, the performance of a routine Group A test conducted at ±20% design flow rate provides an acceptable level of quality and safety.

5. Proposed Alternative and Basis for Use

HBRSEP, Unit No. 2, will conduct the quarterly Group A pump tests at the flow rates specified by ISTB 4.3(e)(1) for the Comprehensive Test. For pumps tested to these conditions, the Comprehensive Test requirements specified by ISTB 4.2(c) and Table ISTB 5.1-1 will not be conducted. Based on the information presented in the "Reason for Request," there is reasonable assurance that operational readiness of the affected pumps will be maintained and that the proposed alternative provides an acceptable level of quality and safety.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the duration of the Fourth Ten-Year Interval which began February 19, 2002.

7. Precedents

None identified.