

November 30, 2004

Mr. James J. Sheppard
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT (STP), UNIT 2 - RELIEF FROM THE
REQUIREMENTS OF AMERICAN SOCIETY OF MECHANICAL ENGINEERS
(ASME) BOILER AND PRESSURE VESSEL CODE (CODE) FOR SECTION XI
REQUIREMENTS (TAC NO. MC4598)

Dear Mr. Sheppard:

By letter dated September 30, 2004, as supplemented by letter dated November 9, 2004, STP Nuclear Operating Company, the licensee for STP, Unit 2, requested relief from the ASME Code stroke-time testing requirements for residual heat removal system motor-operated valve (MOV) 2-RH-0031A until the MOV can be repaired during refueling outage 2RE12 in spring 2007.

Based upon the review of the letter dated September 30, 2004, as supplemented by letter dated November 9, 2004, the NRC staff concludes the licensee's request for relief from the ASME Code quarterly stroke-time testing requirement for MOV 2-RH-0031A for STP, Unit 2, is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) of Title 10 of the *Code of Federal Regulations* on the basis that compliance with the specified requirement would result in hardship without a compensating increase in the level of quality and safety. The licensee may defer the quarterly stroke-time tests required in ASME Code, Section XI, 1989 Edition (OM Code 1987 Edition and 1988 Addenda) for MOV 2-RH-0031A until the valve can be repaired during refueling outage 2RE12. The relief is contingent upon the satisfactory completion of the diagnostic testing of MOV 2-RH-0031A during refueling outage 2RE11 and is authorized until the end of refueling outage 2RE12 at which time the licensee must comply with the applicable ASME Code inservice testing requirements for MOV 2-RH-0031A.

James J. Sheppard

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The NRC staff's safety evaluation is enclosed.

Sincerely,

/RA/

Michael K. Webb, Acting Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-499

Enclosure: Safety Evaluation

cc w/encl: See next page

James J. Sheppard

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Sincerely,

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Michael K. Webb, Acting Chief, Section 1
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF VRR-05

MOTOR OPERATED VALVE STROKE-TIME TESTING

SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

SOUTH TEXAS PROJECT, UNIT 2

DOCKET NO. 50-499

1.0 INTRODUCTION

By letter dated September 30, 2004 (Accession No. ML042800233), as supplemented by letter dated November 9, 2004 (Accession No. ML043200635), STP Nuclear Operating Company, licensee for South Texas Project (STP) (the licensee), submitted a request for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) requirement pertaining to stroke-time testing of motor-operated valves (MOVs) on a quarterly basis. The licensee's inservice testing program is required to meet the provisions of the ASME Code, Section XI, 1989 Edition, which references Part 10 of ASME Operations and Maintenance (OM) Code, 1987 Edition and 1988 Addenda. Specifically, the licensee requests deferral of the quarterly stroke-time testing requirement for damaged MOV 2-RH-0031A in the residual heat removal and safety injection systems at STP, Unit 2, until the valve can be repaired during refueling outage 2RE12, scheduled during the period from March to April 2007. The basis for this relief request is pursuant to 50.55a(a)(3)(ii) of Title 10 of the *Code of Federal Regulations* (10 CFR) in that compliance with the specified requirements would result in hardship without a compensating increase in the level of quality and safety.

2.0 REGULATORY GUIDANCE

The regulation at 10 CFR 50.55a, requires that inservice testing of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME Code and applicable addenda, except where relief has been requested and granted or proposed alternatives have been authorized by the Commission pursuant to 10 CFR 50.55a (f)(6)(i), (a)(3)(i), or (a)(3)(ii). In order to obtain authorization or relief, the licensee must demonstrate that: (1) conformance is impractical for its facility; (2) the proposed alternative provides an acceptable level of quality and safety; or (3) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety.

3.0 TECHNICAL EVALUATION

3.1 Code Requirements

ASME/ANSI Standard OMa-1998, Part 10, paragraph 3.4 requires that, when a valve or its control system has been replaced, repaired, or has undergone maintenance that could affect the valve's performance, a new reference value shall be determined or the previous value

reconfirmed by an inservice test run prior to the time it is returned to service or immediately if not removed from service, to demonstrate that performance parameters which could be affected by the replacement, repair, or maintenance are within acceptable limits.

Paragraph 4.2.1.1 requires that active Category A and B valves shall be tested nominally every three months. Paragraph 4.2.1.4 requires that (a) the limiting values of full-stroke time of each power-operated valve shall be specified by the Owner, and (b) the stroke time of all power operated valves be measured to at least the nearest second. The results of the inservice tests are subject to the acceptance criteria set forth in paragraph 4.2.1.8, and the corrective action established in paragraph 4.2.1.9.

3.2 Basis for Relief Request

The licensee requests relief from the ASME Code quarterly stroke-time testing requirement for MOV 2-RH-0031A at STP, Unit 2, on the basis of 10 CFR 50.55a(a)(3)(ii) that compliance with the specified requirement would result in hardship without a compensating increase in the level of quality and safety.

The licensee requests relief from the ASME Code quarterly stroke-time testing requirement for MOV 2-RH-0031A because a flaw on the valve stem has damaged the valve packing and stroking of the valve can cause leakage of borated water from the packing. Although the licensee reports that the valve packing is not currently leaking, the licensee is concerned that stroking the valve may cause further damage to the valve packing, and result in increased leakage. In that MOV 2-RH-0031A is directly connected to the reactor coolant system, repair of the valve will require shutdown of STP, Unit 2, removal of the reactor fuel, and draining of the reactor pressure vessel below the nozzle line. The licensee reports that the next drain down of Unit 2 is not scheduled until refueling outage 2RE12.

3.3 Proposed Alternative to Code Testing Requirement

The licensee requests relief to defer ASME Code stroke-time testing of MOV 2-RH-0031A until repairs can be accomplished during refueling outage 2RE12. After completion of the repair, testing of MOV 2-RH-0031A will be returned to the ASME Code inservice testing program for STP, Unit 2.

In order to provide reasonable assurance of operational readiness, the licensee has reviewed diagnostic testing and the maintenance history for the valve. The data was associated with the licensee's completion of the Generic Letter (GL) 89-10¹ program, and shows consistent performance with no adverse trends or anomalies noted. The most recent full As-Left testing performed revealed a high capability margin for MOV 2-RH-0031A in accordance with the Joint Owners' Group Program on MOV Periodic Verification developed in response to GL 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves."

During refueling outage 2RE11 in October 2005, the licensee will operate MOV 2-RH-0031A as part of required surveillance on the Safety Injection System. After the surveillance test, the

¹ GL 89-10, "Safety-Related Motor-Operated Valve Testing And Surveillance" was issued on June 6, 1989.

licensee will adjust the valve packing or repack the valve as necessary. The licensee will then perform a static diagnostic test and stroke-time test of MOV 2-RH-0031A to demonstrate its capability. Prior to returning the valve to service, the licensee will have confidence in the operability of MOV 2-RH-0031A and its packing integrity.

3.4 Staff Evaluation of Relief Request

The licensee requests relief from the ASME Code quarterly stroke-time testing requirement for MOV 2-RH-0031A at STP, Unit 2, until its damaged valve stem can be repaired. The licensee is concerned that frequent operation of the valve will result in damage to the stem packing and increased packing leakage. The licensee is requesting deferral of quarterly stroke-time testing of MOV 2-RH-0031A through the end of refueling outage 2RE12, in light of the hardship associated with the need to remove the reactor fuel, and to drain the reactor pressure vessel below the nozzle line, to conduct repairs on this MOV.

In support of its request to defer ASME Code quarterly stroke-time testing of MOV 2-RH-0031A, the licensee reports a satisfactory operating history for the MOV. In addition, the licensee has conducted successful diagnostic testing of MOV 2-RH-0031A with the test data evaluated as part of the GL 89-10 program. The licensee also plans to perform additional diagnostic testing of this MOV during refueling outage 2RE11.

Operating experience has shown that diagnostic testing can provide confidence in the performance capability of MOVs over an extended period of time. During the interval between MOV diagnostic tests, the actuator manufacturer supports exercising of MOVs once per refueling cycle, not to exceed two years, to provide assurance of adequate mixing of the actuator lubricant and continued electrical continuity within the actuator. The licensee's support for deferral of quarterly stroke-time testing of MOV 2-RH-0031A is consistent with extensive experience with diagnostic testing and recommendations for periodic exercising of MOVs.

The satisfactory operating history and successful diagnostic tests of MOV 2-RH-0031A provide confidence in the capability of the MOV to perform its safety function. The successful completion of a diagnostic test of MOV 2-RH-0031A during the next refueling outage in 2RE11 will provide reasonable assurance of the MOV's operational readiness to perform its safety function until the valve can be repaired during refueling outage 2RE12. In that quarterly stroke-time testing of MOV 2-RH-0031A prior to repair of the valve stem could result in damage to the valve packing and increased packing leakage, compliance with the ASME Code quarterly stroke-time testing requirement would result in hardship without a compensating increase in safety based on the need to remove the fuel and to drain the reactor vessel to the nozzle line to conduct repairs on this MOV. The licensee has therefore provided reasonable assurance of the operational readiness of MOV 2-RH-0031A until repairs can be conducted during the 2RE12 refueling outage scheduled for March to April 2007 and has established that compliance with the quarterly stroke-time testing requirement for MOV 2-RH-0031A until the MOV can be repaired would result in hardship without a compensating increase in safety.

4.0 CONCLUSION

The NRC staff concludes that the licensee's request for relief from the ASME Code quarterly stroke-time testing requirement for MOV 2-RH-0031A for STP, Unit 2, is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) on the basis that compliance with the specified requirement would

result in hardship without a compensating increase in the level of quality and safety. The licensee may defer the quarterly stroke-time tests required in ASME Code, Section XI, 1989 Edition (OM Code 1987 Edition and 1988 Addenda) for MOV 2-RH-0031A until the valve can be repaired during refueling outage 2RE12. The relief is contingent upon the satisfactory completion of the diagnostic testing of MOV 2-RH-0031A during refueling outage 2RE11 and is authorized until the end of refueling outage 2RE12, at which time the licensee must comply with the applicable ASME Code inservice testing requirements for MOV 2-RH-0031A.

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Date: November 30, 2004

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November 2004

South Texas Project, Units 1 & 2

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