

September 16, 2002

Mr. J. B. Beasley, Jr.
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SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 RE: RELIEF
REQUESTS FOR THE SECOND TEN-YEAR INTERVAL INSERVICE TESTING
PROGRAM (TAC NOS. MB5518 AND MB5519)

Dear Mr. Beasley:

By letter dated June 14, 2002, you submitted two requests for relief: RR-V-1 and RR-G-3. Relief RR-V-1 requested relief from the requirements pertaining to the duties of an Authorized Nuclear Inservice Inspector as identified in subsection ISTA 2.1 of the 1990 American Society of Mechanical Engineers (ASME) OM Code, and Relief RR-G-3 requested relief from the ASME Code inservice testing requirements for pressure relief valves as identified in ASME OM Code-1995 Appendix I, Section 8, Paragraphs I 8.1.1(h) and I 8.1.3(g).

We have reviewed and evaluated the information provided in Relief Requests RR-V-1 and RR-G-3 against the requirements of the ASME Boiler and Pressure Vessel Code and Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i). The staff has determined that pursuant to 10 CFR 50.55a(a)(3)(i), the relief requests RR-V-1 and RR-G-3 are authorized on the basis that they provide an acceptable level of quality and safety. Our Safety Evaluation is enclosed.

Sincerely,

/RA/

John A. Nakoski, Section Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosure: As stated

cc w/encl: See next page

Vogtle Electric Generating Plant

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We have reviewed and evaluated the information provided in Relief Requests RR-V-1 and RR-G-3 against the requirements of the ASME Boiler and Pressure Vessel Code and Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i). The staff has determined that pursuant to 10 CFR 50.55a(a)(3)(i), the relief requests RR-V-1 and RR-G-3 are authorized on the basis that they provide an acceptable level of quality and safety. Our Safety Evaluation is enclosed.

Sincerely,

/RA/

John A. Nakoski, Section Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosure: As stated

cc w/encl: See next page

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*See previous concurrence

*No significant change to SE

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DATE	9/16/02	9/16/02	8/29/02	7/10/02	9/16/02

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REGULATION
RELATED TO THE SECOND 10-YEAR INTERVAL INSERVICE TESTING PROGRAM
RELIEF REQUESTS NOS. RR-V-1 AND RR-G-3
VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2
DOCKET NOS. 50-424 AND 50-425

1.0 INTRODUCTION

The *Code of Federal Regulations* (10 CFR) Section 50.55a, requires that inservice testing (IST) of certain American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the *ASME Boiler and Pressure Vessel Code* (the Code) and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a. In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility. Section 50.55a authorizes the Commission to approve alternatives and to grant relief from ASME code requirements upon making the necessary findings. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to the Code requirements that are acceptable. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants."

By letter dated June 14, 2002, Southern Nuclear Operating Company (SNC or licensee) submitted two requests for relief: RR-V-1 and RR-G-3, for the Vogtle Electric Generating Plant (VEGP). Relief RR-V-1 requested relief from the requirements pertaining to the duties of an Authorized Nuclear Inservice Inspectors (ANII) as identified in subsection ISTA 2.1 of the 1990 ASME OM Code, and Relief RR-G-3 requested relief from the ASME Code IST requirements for pressure relief valves as identified in ASME OM Code-1995 Appendix I, Section 8, paragraphs I 8.1.1(h) and I 8.1.3(g).

2.0 RELIEF REQUEST RR-V-1

The licensee has submitted a request for relief from certain ASME Code IST requirements pertaining to testing of ASME Class 1, 2, and 3 safety and relief valves. The plant IST program requires that the testing meet the requirements of ASME OM Code-1995 through the OMa-1996 addenda that references the requirements of OM Code-1995 Appendix I (Appendix I). Specifically, this request seeks relief from performing testing on safety and relief valves in a manner that includes a 10-minute hold time between consecutive set pressure tests as required by Appendix I, Section 8, Paragraphs I 8.1.1 (h), and I 8.1.3 (g). For the pressurizer safety valves (PSVs) and main steam safety valves (MSSVs), which are tested

under other than ambient conditions, the licensee proposes to relax the hold time from 10 minutes to 5 minutes. For all other water system relief valves tested under ambient conditions using a test medium at ambient conditions, the licensee proposes to eliminate the 10-minute hold time.

2.1 Licensee's Basis for Requesting Relief

The licensee provides the following basis and justification for granting relief:

At VEGP, pressure relief valves from various plant systems are tested in accordance with the provisions of ASME OM Code-1995. A minimum of two consecutive valve actuations are measured to determine the set pressure of the valve. Under the provisions of ASME OM Code-1995, the minimum elapsed time between valve openings is 10 minutes. Any reduction in the 10-minute hold time between valve actuations would minimize test performance and system outage times. A reduction in system outage time enhances plant safety by the timely return of plant systems to service.

VEGP's main steam safety valves are tested during operation (on-line testing) at rated pressure and temperature. [. . .] VEGP's proposed alternative test method would minimize the time between valve actuations and reduce the risk associated with personnel exposure to these test environmental conditions.

At VEGP, pressure relief valves in ASME Class 2 and 3 water systems are bench tested at ambient conditions using water as the test medium. Testing of these valves is conducted at ambient conditions in a shop environment. The test medium and the valve in this environment are in thermal equilibrium. The valve is placed on a stand, and pressurized air/nitrogen is used to achieve test pressure of the test medium. There is no thermal source introduced during the test that would result in a thermal imbalance or skew the accuracy of the test. Repeated valve actuations are conducted in a controlled environment under steady-state conditions. Consequently, accurate and repeatable test results are achieved when measuring the set pressure of the water system pressure relief valves.

VEGP's main steam system safety valves are ASME Class 2 valves and are tested in place with an assist device during power operation just prior to removing a unit from service for a refueling outage. A hydraulic assist device measures the force required to lift the valve disc to the relief setpoint. At the point at which the valve lifts, the hydraulic force is removed, allowing the valve to close. This evolution occurs in less than one second, which minimizes the steam flow through the valve as it actuates. This also minimizes any change in temperature that is experienced by the valve and the test medium (steam) during testing. Typically, there is some amount of time that elapses between actuations due to data recording, inspection, and verification of test conditions. These test conditions provide thermal stability of the valve and the test medium. Consequently, accurate and repeatable test results are achieved when measuring the set pressure of the main steam relief valves.

VEGP's pressurizes safety valves are ASME Class 1 valves that are removed from service during a unit refueling outage and are shipped to an independent test laboratory for testing. The laboratory tests limit valve disc movement and lift time, which limits flow

through the valve. This minimizes temperature transients that occur during the disc lift. The valves are tested at simulated operating conditions. Thermal stabilization is achieved prior to the start of testing as required by ASME OM Code -1995. Typically, there is some amount of time that elapses between actuations due to data recording, inspection, and verification of test conditions. Consequently, these conditions provide thermal stability of the valve and the test medium and provide accurate and repeatable results for measuring the set pressure of the pressurizer's relief valves.

The 1997 ASME OM Code contains a relaxation of the hold time requirement to decrease the elapsed time between actuations from ten minutes to five minutes. This relaxation is applicable to the proposed relief request for VEGP's main steam and pressurizer relief valves. Accordingly, the proposed relief request is consistent with later ASME Code requirements.

VEGP's proposed request for relief from the provisions of ASME OM Code -1995 provides an alternative methodology for testing VEGP's ASME Class 1, 2 and 3 pressure relief valves. Alternative testing would shorten the time between valve openings from ten minutes to five minutes for VEGP's pressurizer and main steam relief valves and from ten minutes to no hold time for all water system relief valves. VEGP's proposed alternative method would demonstrate satisfactory repeatability and accuracy for determining set pressures of relief valves and would provide a commensurate level of quality and safety.

2.2 Staff Evaluation

The staff finds that for the PSVs and MSSVs, the proposed 5-minute hold time provides the necessary steady-state thermal conditions for testing. The staff also finds that the other ASME Code Class 2 and 3 water systems relief valves are in thermal equilibrium under the ambient test temperature conditions such that thermal stabilization is achieved with no hold time specified. Thus, the staff finds that the proposed 5-minute hold time between consecutive set pressure tests for the PSVs and MSSVs and no hold time between set pressure tests of the other ASME Class 2 and 3 system safety and relief valves provides an adequate method of accurately and repeatedly determining set pressures. It is noted that the licensee has a significant amount of experience in testing the plant safety and relief valves, and general industry experience demonstrates that the proposed methods provide accurate and repeatable results. Finally, the staff notes that the 1997 ASME OM Code specifies a 5-minute hold time that is a relaxation of the 10-minute hold time specified in previous editions of the OM Code. Therefore, the staff finds the licensee's proposed method of set pressure testing the PSVs and MSSVs with a 5-minute hold time and set pressure testing the other Class 2 and 3 water system relief valves with no hold time to be acceptable.

2.3 Staff Conclusion

The staff concludes that the licensee's proposed alternative to the above discussed ASME Code testing requirements for Code Class 1, 2, and 3 safety and relief valves for RR-V-1 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the proposed alternative testing provides an acceptable level of quality and safety.

3.0 RELIEF REQUEST RR-G-3

The licensee has requested relief for IST of pumps and valves from the requirements of ISTA 2.1 of the 1990 ASME OM Code that states, in part, it is the duty of the inspector to verify that the inservice tests and examinations required have been completed and the results recorded.

3.1 Licensee's Basis for Requesting Relief

The licensee states:

The requirements for independent inspection have been deleted in the ASME OM Code-1998 Edition. Additionally, the ASME Section XI Code deleted reference to independent inspection for IST on pumps and valves from subsection IWA-2110 in the 2000 Addenda.

The ANII [Authorized Nuclear Inservice Inspector's] review of the IST Program required by the ASME OM Code, 1990 and 1995 Editions, is less comprehensive than the review required by the ASME Section XI Code for Inservice Inspection (ISI) activities. The 1998 Edition, and subsequent editions, of the ASME OM Code have eliminated reference for ANII duties entirely. Section IWA-2110 of the ASME XI Code (2000 Addenda) specifies the duties of the ANII related to the IST performed for pumps and valves and component supports as simply verifying that inservice tests have been performed and the results recorded. In general, ANIIs do not have the training or background experience to make determinations about pump and valve safety functions in order to verify program scope, or to assess the operational readiness of pumps and valves based on test results. Consequently, the ANII review provides little, if any, benefit.

SNC, at Plant Vogtle, maintains a multi-layered review process that accomplishes the same results as expected by the earlier versions of the ASME XI and OM Codes. IST is typically performed by Operations, Maintenance, or Engineering department personnel with extensive experience in Code requirements applicable for IST of pumps and valves. Test procedures contain detailed instructions for performance of tests, and all data is reviewed by a minimum of two independent personnel (typically an Operations Shift Supervisor (SRO) and the IST Engineer). The IST Program scope is reviewed by regulatory authorities against Code and regulatory guidance to ensure that components required to be tested are included. The IST program documents, surveillance procedures, and test data are also subject to the SNC quality assurance program which provides an equivalent or greater level of quality and safety than those required by ANII involvement specified in the Code. Therefore, there is no quality or safety-related benefit in the ANII duplication of review and oversight of IST implementation at Plant Vogtle.

Therefore, the proposed alternative, in conjunction with continued review and oversight by knowledgeable and experienced SNC personnel, will provide an acceptable level of quality and safety. [. . .]

3.2 Alternative to ANII

The licensee proposes:

The ASME OM Code requirements specifying the duties of the ANII described in subsection ISTA 2.1 will be eliminated from the IST Program.

3.3 Staff Evaluation

Subsection ISTA 2.1 of the 1990 OM Code as well as the 1995 Edition with the 1996 Addenda of the OM Code requires that IST activities be verified by an ANII. It is the ANII's duties to verify that inservice tests on pumps, valves, and components supports have been completed and results recorded. The licensee proposes to eliminate from the IST program for pumps and valves the specific duties for the ANII. The licensee states that VEGP has a multi-layered review process that performs the same functions as the ANII with individuals who have extensive experience in the Code-required testing of pumps and valves. Also, the IST program is subject to the SNC quality assurance program that provides an equivalent, or greater level of quality and safety than the requirements for ANII involvement specified in the Code.

As stated by the licensee, utilities have a multi-layered review process that performs the same functions as the ANII. ANIIs generally do not have the training or background experience to make determinations of the safety function of components in order to verify the scope of the IST program, or assess the operational readiness of components based on test results. Therefore, in the 1998 Edition/2000 Addenda of the OM Code, the requirements for the ANII have been removed.

On the basis that the licensee's review process for its IST program provides an equivalent or higher level of quality and safety as the Code requirements for ANII involvement, the staff finds that the proposed alternative is acceptable.

3.4 Staff Conclusion

The staff concludes that Relief Request RR-G-3 to eliminate from the IST program for pumps and valves the specific requirements for the ANII is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the alternative provides an acceptable level of quality and safety.

Principal Contributor: Gabriel Klein

Dated: September 16, 2002