UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 14, 2010

Mr. John T. Carlin
Vice President R.E. Ginna Nuclear Power Plant
R.E. Ginna Nuclear Power Plant, LLC
1503 Lake Road
Ontario, NY 14519

SUBJECT: ALTERNATIVE REQUEST GR-01 FOR THE FIFTH 10-YEAR PUMP AND VALVE INSERVICE TESTING PROGRAM - R.E. GINNA NUCLEAR POWER PLANT (TAC NO. ME2238)

Dear Mr. Carlin:

By letter dated September 11, 2009, as supplemented by letters dated October 16 and November 5, 2009, R.E. Ginna Nuclear Power Plant, LLC, the licensee, proposed seven alternatives for the fifth 10-year inservice testing (IST) program interval. The licensee requested proposed alternatives from certain IST requirements of the 2004 Edition of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code), which will be the "Code of Record" for the fifth 10-year IST interval. The fifth 10-year IST interval at the R.E. Ginna Nuclear Power Plant commenced on January 1, 2010. By letter dated December 30, 2009, the Nuclear Regulatory Commission (NRC) staff approved six of the proposed alternatives and stated that alternative request GR-01 would be addressed in a stand alone safety evaluation (SE). By letter dated March 2, 2010, the licensee provided additional information in support of alternative GR-01.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* 50.55a(a)(3)(ii), the licensee requested to use the proposed alternative in GR-01 since complying with the current ASME OM Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff finds that the proposed alternative in request GR-01 provides reasonable assurance that check valves 877A, 878F, 877B, and 878H, and motor operated valves 878A, and 878C are operationally ready. All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request for relief remain applicable. Accordingly, as set forth in the enclosed SE, the staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii), and is in compliance with the ASME OM Code's requirements.

Please contact Douglas Pickett at 301-415-1364 if you have any questions.

Sincerely,

Nancy L. Salgado

Nancy L. Salgado, Chief
Plant Licensing Branch I-1
Division of Operating Reactors Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosure:
Safety Evaluation

cc: w/encl: Distribution via Listserv

**UNITED STATES**
**NUCLEAR REGULATORY COMMISSION**
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE INSERVICE TESTING PROGRAM, FIFTH 10-YEAR INTERVAL

R.E. GINNA NUCLEAR POWER PLANT, LLC

R.E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

## 1.0 INTRODUCTION

By letter dated September 11, 2009 (Agencywide Document Access and Management System (ADAMS) Accession No. ML092610435), as supplemented by letters dated October 16 (ML092950485), and November 5, 2009 (ML093140091), R.E. Ginna Nuclear Power Plant, LLC, the licensee, submitted seven alternatives for the fifth 10-year inservice testing (IST) program interval. The licensee requested proposed alternatives from certain IST requirements of the 2004 Edition of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code), which will be the "Code of Record" for the fifth 10-year IST interval. The fifth 10-year IST interval at the R.E. Ginna Nuclear Power Plant commenced on January 1, 2010. By letter dated December 30, 2009, the Nuclear Regulatory Commission (NRC) staff approved six of the proposed alternatives and stated that alternative request GR-01 would be addressed in a stand alone safety evaluation. By letter dated March 2, 2010 (ML100690308), the licensee provided additional information in support of alternative GR-01.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(a)(3)(ii), the licensee requested to use the proposed alternative in GR-01 since complying with the current ASME OM Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

## 2.0 REGULATORY EVALUATION

10 CFR 50.55a(f), "Inservice testing requirements," requires, in part, that ASME Class 1, 2, and 3 components must meet the requirements of the ASME OM Code and applicable addenda, except where alternatives have been authorized pursuant to paragraphs (a)(3)(i) or (a)(3)(ii).

In proposing alternatives, a licensee must demonstrate that the proposed alternative provides an acceptable level of quality and safety, or compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Section 50.55a allows the NRC to authorize alternatives to ASME OM Code requirements upon making necessary findings. NRC guidance contained in NUREG-1482 Revision 1,

"Guidance for Inservice Testing at Nuclear Power Plants," provides alternatives to ASME Code requirements which are acceptable.

The NRC's findings with respect to authorizing the alternative to the ASME OM Code, noted in GR-01, are given below:

3.0 TECHNICAL EVALUATION

3.1 Request GR-01

3.1.1 ASME OM Code requirements:

ISTC-3630 (Leakage Rate for Other Than Containment Isolation Valves) states that Category A valves with leakage requirements not based on an Owner's 10 CFR Part 50, Appendix J Program, shall be tested to verify their seat leakages within acceptable limits.

3.3.2 Licensee's Basis For Requesting Alternative Testing

Alternative testing was requested for the following components:

853A – RHR Inlet Check Valve to Reactor Vessel Core Deluge
853B – RHR Inlet Check Valve to Reactor Vessel Core Deluge
867A – SI Pump Discharge and Accumulator Tank A Check Valve to Loop B Cold Leg
867B – SI Pump Discharge and Accumulator Tank B Check Valve to Loop A Cold Leg
878G – SI Pump A Discharge Check Valve to Loop B Cold Leg
878J – SI Pump B Discharge Check Valve to Loop A Cold Leg
878A – SI Pump A Discharge to Loop B Hot Leg motor operated valve (MOV)-878A
878C – SI Pump B Discharge to Loop A Hot Leg MOV-878C
877A – SI Pump A Discharge Check Valve to Loop B Hot Leg
877B – SI Pump B Discharge Check Valve to Loop A Hot Leg
878F – SI Pump A Discharge Check Valve to Loop B Hot Leg
878H – SI Pump B Discharge Check Valve to Loop A Hot Leg

The licensee states:

> Leakage testing, including testing requirements is governed by plant Technical Specifications. Testing criteria utilized meets the intent of the OM Code Leak rate testing requirements. Per NUREG 1482, Rev. 1, Section 4.1.1, testing of the pair of valves would be acceptable if the configuration does not require two valves and the safety analysis for such a configuration would credit either of the two valves. Since individual testing of two sets of check valves is not possible due to lack of test connections and since testing of these valves with their adjacent MOVs [motor operated valves] is specified adequately by Technical Specifications, it is impractical to perform separate leak rate tests. Plant Technical Specifications establish the maximum permissible leakage rates, test pressure requirements, test frequency requirements, and the required action if the leak rate limit is exceeded. Considering the time,

cost, and radiation exposure to test personnel, it would be burdensome to perform leak rate testing in accordance with the OM Code and would not result in a compensating increase in the level of quality and safety.

3.3.3 Licensee's Proposed Alternative Testing (as stated)

The valves will be leak rate tested in accordance with RCS [Reactor Coolant System] Pressure Isolation Valve leak rate testing per Technical Specification 3.4.14. The proposed alternative testing will provide reasonable assurance of the valves' operational readiness.

3.3.4 Staff Evaluation

The licensee entered its fifth IST program interval on January 1, 2010. The licensee proposed an alternative test request applicable to the 2004 Edition of the ASME OM Code, Section ISTC-3630, Leakage Rate for Other Than Containment Isolation Valves. The proposed request identifies 12, Category A, pressure isolation valves to be tested per Technical Specification (TS) 3.4.14 in lieu of ISTC-3630 requirements. Pressure isolation valves are defined as two valves in series within the reactor coolant pressure boundary which separate the high pressure RCS from an attached lower pressure system.

ISTC-3630 requires Category A valves to be leak tested at least once every 2 years at a prescribed differential pressure. Seat leakage shall be measured, analyzed and compared to permissible leakage rates. Valves failing the acceptance criteria shall be declared inoperable and entered into the corrective action program.

The licensee's TS 3.4.14 requires safety injection cold leg and residual heat removal valves 853A, 853B, 867A, 878G, 867B, and 878J to be leak tested every 24 months at a prescribed differential pressure. Seat leakage shall be measured, analyzed and compared to permissible leakage rates. Any valve failing the acceptance criteria shall be declared inoperable and entered into a limiting condition for operation (LCO). The test frequency, differential pressure, measurement, acceptance criteria and corrective action process meet ISTC-3630 requirements; therefore no alternative to the ASME OM Code is required for these valves.

The licensee's TS 3.4.14 requires safety injection hot leg valves 877A, 878F, 877B, 878H, 878A, and 878C to be leak tested every 40 months at a prescribed differential pressure. Seat leakage shall be measured, analyzed and compared to permissible leakage rates. Due to lack of test connections, each series pair of check valves, 877A/878F and 877B/878H shall form one of the two pressure boundaries required to be tested with the second boundary being its associated MOV. Failure of a leakage test of a tested pair would require both check valves to be declared inoperable and in need of rework. Any valve failing the acceptance criteria shall be declared inoperable and entered into a LCO. This methodology does not meet ISTC-3630 requirements of 24-month test interval and individual valve leakage testing. Series pair check valves 877A/878F and 877B/878H do not have the needed test connections to individually test each valve. To make modifications to include the proper test connections would be costly and would increase personnel radiation exposure.

Safety injection hot leg check valves 877A, 878F, 877B, 878H, and MOVs 878A, and 878C are considered to be passive. During operation, the check valves are normally closed and their associated MOV is also closed and de-energized. When the NRC ordered changes to the Ginna TSs on April 20, 1981, the NRC recommended a 40-month test interval and recognized the series pair check valves acting as one component. The supporting documentation for this Order noted that these valves were normally closed and that leak testing these valves on the 40-month test interval would be an effective measure in reducing the probability of an intersystem loss-of-coolant accident. The NRC staff finds that meeting the ASME OM Code testing frequency would result in additional test time and radiation exposure to plant personnel. The staff concludes that compliance would result in a hardship for the licensee without a compensating increase in the level of quality and safety and that the proposed alternative provides reasonable assurance that the valves are operationally ready.

During the NRC staff review of GR-01, it was noted that Ginna TS 3.4.14 and the associated TS Bases could be further clarified to address prior NRC approval of testing the above mentioned check valve pairs as a single isolation valve. As a result, the licensee's letter dated March 2, 2010, included the following regulatory commitments:

(1) No later than April 30, 2010, the licensee will revise the TS Bases for Surveillance Requirement (SR) 3.4.14.2 to clearly state that the NRC staff has previously approved testing check valve pairs as a single valve, and

(2) The next time the licensee updates the page containing TS SR 3.4.14.2, the licensee will insert a footnote to clarify testing check valve pairs as a single valve.

The NRC staff concludes that the above regulatory commitments will add clarification to both the TS and TS Bases and, therefore, finds them acceptable.

## 4.0 CONCLUSION

As set forth above, the NRC staff finds that the proposed alternative in request GR-01, provides reasonable assurance that check valves 877A, 878F, 877B, 878H, and MOVs 878A, and 878C are operationally ready. All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request for relief remain applicable. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii), and is in compliance with the ASME OM Code's requirements.

Principal Contributor: Michael Farnan, NRR

Date: April 14, 2010

Please contact Douglas Pickett at 301-415-1364 if you have any questions.

Sincerely,

***/ra/***

Nancy L. Salgado, Chief
Plant Licensing Branch I-1
Division of Operating Reactors Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosure:
Safety Evaluation

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