

December 15, 2011

MEMORANDUM TO: Gloria Kulesa, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Patrick G. Boyle, Project Manager */RA/*
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT UNIT NO. 2 (HATCH
UNIT 2) – VERBAL AUTHORIZATION OF INSERVICE
INSPECTION (ISI) PROGRAM ALTERNATIVE HNP-ISI-ALT-15,
VERSION 2, ASSOCIATED WITH SAFETY RELIEF VALVE
TESTING (TAC NO. ME7690)

By letter dated December 9, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11347A197), as supplemented by letter dated December 13, 2011 (ADAMS Accession No. ML113480294), Southern Nuclear Operating Company, Inc (SNC) submitted an ISI program testing alternative request HNP-ISI-ALT-15, Version 2. This action requested Nuclear Regulatory Commission (NRC) authorization of an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Code Section XI, 2001 Edition through 2003 addenda, Subsection IWB-5221(a) to perform VT-2 visual examination during a system leakage test of Class 1 component with mechanical joint connections at a pressure lower than the Code-required pressure following repair and replacement activities on several Safety Relief Valves (SRVs) installed in Hatch Unit 2, which are experiencing leakage. The proposed alternative was to perform the VT-2 examinations at 920 pounds per square inch-gauge (psig) instead of the nominal operating pressure of 1045 psig. SNC cited hardship concerns associated with achieving the higher pressure level, which include risk to personnel and plant equipment pursuant to Title 10 *Code of Federal Regulations*, Part 50, Section 50.55a(a)(3)(ii). The duration of the proposed alternative is for the December 2011 maintenance shutdown in the fourth 10-year inspection interval at Hatch Unit 2 through the start of the next refueling outage currently scheduled to begin in February 2013.

The NRC staff reviewed the licensee's submittal and determined that the proposed alternative will provide an acceptable level of quality and safety. During a conference call with the licensee on December 15, 2011, the NRC staff granted a verbal authorization on the use of ISI alternative HNP-ISI-ALT-15, Version 2, in accordance with 10 CFR 50.55a(a)(3)(ii). The script for the verbal authorization is enclosed.

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NRC Participants:

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Gloria Kulesa
Timothy Lupold
Keith Hoffman
Tekia Govan

Licensee Participants:

Rebecca Rutherford
Doug McKinney
Tracy Honeycutt
Mark Ajluni
Jim Edward
Stephen Tipps

Docket No. 50-366

Enclosure: Verbal Authorization Script

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VERBAL AUTHORIZATION OF
INSERVICE INSPECTION PROGRAM ALTERNATIVE
HNP-ISI-ALT-15, VERSION 2
ASSOCIATED WITH SAFETY RELIEF VALVE TESTING
EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 2

By letter dated December 9, 2011, as supplemented by letter dated December 13, 2011, Southern Nuclear Operating Company, Inc (SNC) requested approval of an alternative to the requirements of the American Society of Mechanical Engineers *Boiler & Pressure Vessel Code* (ASME Code), Section XI, 2001 Edition through 2003 Addenda, Subsection IWB-5221(a). Specifically, SNC requested NRC approval of proposed Alternative HNP-ISI-ALT-15, Version 2, to perform the VT-2 visual examination during a system leakage test of Class 1 components with mechanical joint connections at a pressure lower than the ASME Code-required pressure following repair and replacement activities.

The 2001 Edition through 2003 Addenda of the ASME Code, Section XI requires the performance of a system pressure test in accordance with Section IWB-5220 for ASME Code Class 1 pressure boundary components prior to plant startup following each reactor refueling outage. Paragraph IWB-5221(a) requires that the system leakage test be conducted at a test pressure not less than the nominal operating pressure associated with 100-percent rated reactor power, which for Plant Hatch is 1045 psig. These pressure test requirements are supplemented by 10 CFR 50.55a(b)(2)(xxvi), which invokes the requirements of IWA-4540(c) of the 1998 Edition of the ASME Section XI Code for repair/replacement activities of Class 1, 2, and 3 mechanical joint connections.

Relief from the requirements was requested pursuant to 10 CFR 50.55a(a)(3)(ii), in that compliance with the specified requirements would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. VT-2 leakage examination inside the drywell (primary containment) represents a hardship at the nominal operating pressure of 1045 psig during start-up because of high ambient and component temperatures. Ambient temperature would be anticipated to be approximately 156 degrees Fahrenheit once a pressure of 1045 psig is achieved, requiring special safety precautions such as ice vests and cool air supply lines for personnel performing the VT -2 examinations, which could compromise the quality of the leakage examination.

The NRC staff agrees that performance of the VT-2 examination at the ASME Code-required pressure of 1045 psig low reactor power levels versus 920 psig would involve hardship from a personnel safety standpoint. The environmental conditions would require consideration of serious heat stress and valid burn hazard concerns. These conditions would also require additional special safety precautions such as ice vests and cool air supply lines. These adverse conditions and the additional burden of the safety precautions could impact the quality of the leakage examination due to the hardship imposed on the examination personnel. Performing the leakage test at 1045 psig during low power operations would also present operational

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challenges such as altering normal steam pressure controls, possible SRV seating issues and Control Rod Drive withdrawal limitations. To compensate for the reduced pressure and ensure an adequate level of safety, the hold time for non-insulated components will be 1 hour and 8 hours for insulated components. These hold time requirements were agreed to by SNC in the December 13, 2011 document.

The performance of a cold leakage test (non-nuclear heatup), such as that required following a refueling outage, would involve hardship. Performing this type test would require filling the main steam lines and the reactor vessel solid with water. In order to establish the necessary test conditions would require performing extensive temporary hanger modifications, valve lineups and system manipulations. All of these activities would require personnel radiation exposure in addition to normal startup activities.

Based on the information provided in the licensee documents dated December 9, 2011, as supplemented by letter dated December 13, 2011, the NRC staff concludes that complying with the ASME Code requirement would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. NRC staff determines that the proposed alternative described in HNP-ISI-ALT-15, Version 2, provides reasonable assurance of structural integrity and leak tightness of the subject components. Therefore, the NRC authorizes the proposed alternative in accordance with 10 CFR 50.55a(a)(3)(ii) for the December 2011 maintenance shutdown in the fourth 10-year inspection interval at HNP2. This authorization allows the use of HNP-ISI-ALT-15, Version 2 through the start of the next refueling outage currently scheduled to begin in February 2013 should similar repair/replacement activities be required.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in the subject request for relief remain applicable, including third-party review by the authorized nuclear inservice inspector.

Contributor: Keith Hoffman