



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
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ATLANTA, GEORGIA 30303-8931

April 26, 2005

MEMORANDUM TO: James Lyons, Deputy Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

FROM: Victor M. McCree, Director */RA/*  
Division of Reactor Projects

SUBJECT: TASK INTERFACE AGREEMENT (TIA 2005-003) RELATED TO THE  
OPERABILITY AND VALIDITY OF THE LOCAL LEAK RATE TESTING  
OF THE MAIN STEAM ISOLATION VALVES - PLANT EDWIN I. HATCH

This is a request for a Task Interface Agreement (TIA) related to the containment isolation performance of Plant Hatch's Unit 2 Inboard Main Steam Isolation Valves (MSIVs). During the most recent Unit 2 refueling outage from February 5, 2005 to March 14, 2005, the resident inspectors developed questions surrounding the post-shutdown local leak rate test (LLRT) results for the inboard MSIVs.

BACKGROUND

Hatch Unit 2 performed a normal reactor shutdown on February 5, 2005, for a planned refueling outage. During the shutdown, the operators procedurally closed the outboard MSIVs for Main Steam Line penetrations A, B and C at about 350# reactor pressure, leaving the D penetration open for pressure control. The operators closed the A, B and C inboard MSIVs four to five minutes later. The D outboard MSIV was closed at about 40# reactor pressure, followed by the D inboard MSIV a few minutes later. The licensee then completed the shutdown, cooldown and depressurization of the reactor over the next few hours.

When the licensee performed an as-found LLRT on the MSIVs, they found all four penetrations had leakage rates too high to quantify. Troubleshooting efforts to determine the cause of the LLRT failures showed the inboard valves were most likely not fully seated, and the licensee ultimately stroked all four inboard MSIVs and conducted the LLRT again. The B, C and D penetrations leakage returned to within specification, although the B and C outboard MSIVs still had valve leakage which required repairs to the valve stem packings. The A penetration failed subsequent LLRTs, requiring the licensee to rework the internals on both the inboard and outboard MSIVs to enable the valves to satisfactorily meet the test specifications. A Licensee Event Report has been submitted for the failure of the A Main Steam Line penetration.

Docket Nos.: 50-321, 50-366  
License Nos.: DRP-57, NPF-5

The licensee determined that the initial LLRT failures of the inboard MSIVs were from the closing sequence of the outboard and inboard MSIVs. Since the outboard MSIVs were closed prior to the closure of the inboard MSIVs, the licensee postulated that steam became trapped between the valves. As the reactor was depressurized, the steam that was trapped between the valves caused the inboard MSIVs to unseat and relieve the higher pressure back to the reactor vessel. When the differential pressure was equalized the inboard MSIVs did not fully reseat. This created a leakage pathway for the LLRT test pressure and, in the licensee's view, an unsatisfactory initial condition for the test. When the licensee subsequently stroked the valves to the open and then closed positions, the valves fully seated.

The licensee stated that the MSIVs operated as designed when the inboard MSIVs lifted to relieve inter-valve pressure to the reactor vessel. They also stated that it was not abnormal for the inboard MSIVs to not fully reseat after such an operation.

### REQUEST

#### Region II Questions:

1. When pressure is trapped between a set of inboard and outboard MSIVs and the reactor is subsequently depressurized, should the inboard MSIVs unseat and relieve the pressure back to the reactor?
2. If the inboard MSIV does unseat to relieve pressure back to the reactor, is it acceptable for the inboard MSIV to not fully reseat once the pressure is equalized?
3. If the inboard MSIVs are not expected to fully reseat following the equalization of pressure between the reactor and annulus between the MSIVs following a LOCA, do the inboard MSIVs meet the design criteria in 10 CFR 50, Appendix A, Criterion 54, 55 and 56? If they do not meet 10 CFR 50, Appendix A, are the inboard MSIVs operable?
4. Are there scenarios where MSIV leakage could challenge the capabilities of the credited systems used to mitigate the radiological consequences of MSIV leakage (e.g., Standby Gas Treatment and the Main Condenser)? Are the analyzed 10 CFR 100 limits exceeded? (Reference the SER which changed the MSIV leakage requirements and deleted the requirement for an MSIV Leakage Control System dated March 17, 1994.)
5. In light of the above sequence of events associated with the MSIV LLRT, were the requirements of 10 CFR 50, Appendix J satisfied during the as-found MSIV testing (i.e., despite stroking of the valves to establish the test boundary conditions, was it still an as-found test)? Is the licensee's testing procedure (sequence) acceptable? If they do not meet 10 CFR 50, Appendix J, are the inboard MSIVs operable?

This TIA has been coordinated with Chris Gratton as the Project Manager for the Hatch Plant with this issue. Please respond to this TIA for Questions 1-3 by May 16, 2005, and by June 30, 2005, for Questions 4-5, to support timely resolution associated with the operability of a safety function in an operating unit. Any questions on this matter should be directed to Malcolm Widmann, Chief, Reactor Projects Branch 2, Division of Reactor Projects at (404-562-4550).

J. Lyons

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