

JAN 15 1988

MEMORANDUM FOR: W. Cook, SRI, Nine Mile Pt. Units 1 and 2
FROM: H. Gray, Sr. Reactor Engineer, DRS
SUBJECT: FEEDER REPORT - GL 84-11 INSPECTION, TI 2515/89
50-220/87-24, UNIT 1
50-410/87-42, UNIT 2

Introduction

The Generic Letter 84-11 for inspections of austenitic stainless steel piping welds susceptible to intergranular stress corrosion cracking (IGSCC) was issued on April 19, 1984. The GL 84-11 is applicable to the IGSCC susceptible piping 4" and over in diameter and in systems operating over 200°F that are part of or connected to the reactor coolant pressure boundary. The temporary instruction TI 2515/89 summarizes NRC inspection actions to verify licensee completion of activities required by GL 84-11.

For Unit 1, the recirculation system piping was replaced with material resistant to IGSCC during the 1982 outage, minimizing the number of welds to which GL 84-11 is applicable. The scope of volumetric and surface examination of pipe welds is covered by the Inservice Inspection Program and augmented inspection requirements. For Unit 1, the ASME Code, Section XI (Summer '83 addenda), generic letter 84-11 and NUREG 0313 Rev. 1 are applicable to piping welds susceptible to IGSCC.

Each of these three standards requires a different but overlapping set of inspections. The inspector reviewed portions of the ISI program including augmented inspections and noted that the volumetric or ultrasonic examination (UT) requirements of GL 84-11 are included. The competence of UT examiners to detect IGSCC as verified by performance demonstration at EPRI was reviewed. The UT procedure 80 A 2818 Rev. 7 provides that examination crews consist of a minimum of at least two persons, one of which is a Level II (with IGSCC detection qualification) and that level I personnel shall not be utilized for scanning or CRT screen signal evaluation while scanning is being performed. The technical specification (Amendment 70) provides that the reactor be placed in cold shutdown within 24 hours if unidentified leakage increases by 2 gpm over a 24 hour period or associated leak measurement equipment becomes inoperable. The inspector reviewed UT documentation of 3 pipe sizes (12", 24" and 16") and the documentation of six UT examiners to determine that their capability to find IGSCC had been demonstrated at EPRI prior to performing the GL 84-11 inspections during the 1986 outage. Other weld examination documentation was sampled to establish that the documentation examined in detail was typical of the ISI documentation.

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For visual examination during each outage where the containment is deinerted, the inspector noted that while a containment entry is scheduled by operations and maintenance personnel during each outage where deinertion is achieved, a specific detailed visual inspection for reactor coolant piping leakage is not required by plant operating, QA or ISI procedures.

Where IGSCC cracking is identified, the site practice is to evaluate the cracking to the ASME Code IWB 3514-2 (1980 edition) criteria and to not expand the inspection scope if the IGSCC dimensions are acceptable to this portion of the ASME Code. This position is not consistent with the GL 84-11 philosophy that the detection of new cracks or crack growth requires an expansion of the inspection scope. Where during the 1986 outage, IGSCC acceptable to the IWB 3514-2 was identified in core spray piping, 100% of the core spray piping welds were already scheduled for examination by the augmented portion of the ISI program.

The inspector concluded that the intent of GL 84-11 in detecting IGSCC in susceptible piping is being met at Unit 1, however, the procedures do not clearly address visual inspection requirements during brief outages where containment is deinerted and the provision to expand the examination sample scope is not considered applicable by the owner to cracking acceptable to the ASME Code Section XI, IWB 3514-2.

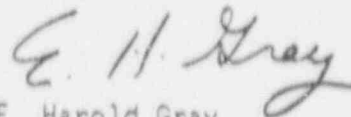
For Nine Mile Pt. 2, the austenitic piping over 4 inch diameter in systems operating above 200°F is constructed of material considered not susceptible to IGSCC such that GL 84-11 is not applicable. The Unit 2 ten year ISI program plan, part 1.3.6 states that the augmented inspections of NUREG 0313 Revision 1 are not applicable to Unit 2, as referenced in the FSAR, Section 5.2.3.4.1. The initial ISI outage date for Unit 2 is mid 1989, however the purchase order and procedures for volumetric examination of austenitic stainless steel piping are presently available. These procedures (83A 1766 and 80 A7718) provide for the use of EPRI qualified UT examiners to detect IGSCC should it occur during the first operating cycle. However, the use of IGSCC qualified UT examiners and procedures is not provided for by the licensee procedures beyond the first refuel cycle inspection. In the opinion of the NRC inspector, materials resistant to IGSCC are still susceptible to IGSCC over the plant operating lifetime. It is the intention of an ISI program to identify material degradation when it occurs. Therefore UT examinations would not be fully effective unless UT technicians and procedures used are demonstrated as being capable of detecting IGSCC. During the exit meeting of 12/3/87, the licensee agreed to review this issue. The preservice ultrasonic examination work included the use of IGSCC qualified detection personnel and procedures to provide a baseline set of data.

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The inspector concluded that the licensee has taken steps to prevent unit 2 IGSCC by providing non susceptible materials, a water chemistry control program and is presently including IGSCC detection capability in ISI program activities by the use of IGSCC qualified UT personnel and procedures.

No Violations were identified.



E. Harold Gray
Senior Reactor Engineer

cc:
Bob Summers, DRP

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MEMORANDUM FOR: William F. Kane, Director
Division of Reactor Projects

FROM: William T. Russell
Regional Administrator

SUBJECT: AUGMENTED INSPECTION TEAM - REACTOR VESSEL OVERFILL
FOLLOWING A SCRAM AT NINE MILE POINT UNIT 2

You are directed to perform a prompt inspection of the causes, safety implications, and associated operator actions during the reactor vessel overfill following a reactor scram at Nine Mile Point Unit 2 on January 20, 1988. The inspection shall be in accordance with NRC Manual Chapter 0513, Part III, and additional instructions in this memorandum.

DRP is assigned to conduct this inspection and E. Wenzinger is designated as the Team Leader. The team will also include participation by NRR and AEOD.

OBJECTIVE

The general objectives of the AIT are to:

- a. Conduct a timely, thorough, and systematic inspection related to the circumstances surrounding the overfilling of the reactor vessel.
- b. Assess the safety significance of the event and communicate to Regional and Headquarters management the facts and safety concerns related to the problems identified.
- c. Collect, analyze, and document all relevant data and factual information to determine the causes, conditions and circumstances pertaining to the event.

SCOPE OF THE INSPECTION

The AIT response should identify and document the relevant facts and determine the probable causes and should be limited to the issues directly related to the reactor vessel overfill event and operator/supervisor responses.

Specifically, the AIT should:

- a. Develop a chronology of the event.

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- b. Review the sequence of events and associated records, logs and notes concerning the event.
- c. Review maintenance and equipment control activities leading to the event.
- d. Assess operator response during the transient.
- e. Assess adequacy of equipment performance during the transient.
- f. Assess the adequacy of the corrective actions, including equipment restoration if applicable.
- g. Determine the scope and quality of Niagara Mohawk's review of the event.

SCHEDULE

The AIT shall be dispatched to the site on January 21, 1988, and shall remain there as long as necessary to accomplish the objectives of this inspection. It is expected that this will take no longer than four working days.

A written report shall be provided to me by February 16, 1988.

TEAM COMPOSITION

The assigned team members are as follows:

- E. Wenzinger, DRP, RI, Team Leader
- A. Howe, DRS, RI
- M. Haughey, NRR
- L. Lois, NRR
- H. Ornstein, AEOD

Original Signed By
WILLIAM T. RUSSELL
William T. Russell
Regional Administrator

- cc:
J. Allan, DRA
W. Johnston, DRS
T. Martin, DRSS
R. Capra, NRR PDI-1
B. Clayton, EDO

RI:DRP
Meyer/rhl

RI:DRP
Johnson

RI:DRP
Wenzinger

RI:DRS
Ornstein

RI:DRP
Kane

RI:DRA
Allan

RI:RA
Russell

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