UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

November 16, 2000

NRC INFORMATION NOTICE 2000-17,SUPPLEMENT 1: CRACK IN WELD AREA OF REACTOR COOLANT SYSTEM HOT LEG PIPING AT V. C. SUMMER

Addressees

All holders of operating licenses for nuclear power reactors except those who have ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) supplement to tell addressees more about the crack-like indication found in a weld in the A loop hot leg pipe in the reactor coolant system (RCS) at the V. C. Summer Nuclear Station. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, no specific action or written response is required.

Description of Circumstances

On October 7, 2000, during a containment inspection after entering a refueling outage, the licensee identified a large quantity of boron on the floor and protruding from the air boot around the “A” loop RCS hot leg pipe. The licensee performed a liquid penetrant test (PT) on October 12, 2000, which indicated the existence of a 4-inch long circumferential indication in the first weld between the reactor vessel nozzle and the “A” loop hot leg piping, approximately 3 feet from the reactor vessel. The NRC issued IN 2000-17 on October 18, 2000, to inform addressees of this information.

The licensee subsequently removed all fuel from the reactor vessel to perform more thorough examinations. Ultrasonic examination (UT) and eddy current testing from the inside diameter (ID) of the “A” loop hot leg piping did not confirm a flaw at the location of the circumferential indication found by the initial PT. An additional PT performed on the OD of the pipe on November 12, 2000, confirmed the original 4-inch long circumferential indication, and identified that other smaller circumferential indications were present.

ML003769172

The UT and eddy current testing did identify an indication at a different location. This indication is an axial crack-like indication, is approximately 2.7 inches long, and is located approximately 9 degrees counterclockwise from top dead center (TDC) of the weld. Based on the UT data, the axial crack-like indication begins at the ID and shows evidence of complete through-wall extension. Visual examination from the OD identified a small "weep hole" in the center of the weld at approximately the same circumferential location as the UT and eddy current indications. A PT of this area could not confirm that the axial crack-like indication was present on the OD because of slight leakage from the "weep hole." The UT and eddy current show that the crack-like indication extends from approximately the centerline of the weld toward the reactor nozzle. Final determination of the leakage path is not expected until metallographic examination of the subject weld is completed.

The NRC held a public meeting with the licensee on October 25, 2000 in the Region II offices in Atlanta, GA, to discuss the licensee's activities. A second public meeting will be held at the NRC Headquarters in Rockville, MD, on November 21, 2000, to discuss the licensee's activities to date and proposed actions.

Discussion

The licensee has assembled a multi disciplinary team, including experts from Westinghouse, the Electric Power Research Institute (EPRI), and other industry experts, to conduct a root cause assessment and develop corrective actions. The NRC is reviewing the licensee efforts. At present, there have been no reports from any other licensee in the United States of similar cracking. Once the failure mechanism is understood, the staff will assess the generic applicability of the event, including the impacts on the in-service inspection (ISI) program and leak-before-break (LBB) analyses.

The NRC staff has received preliminary information that a foreign plant recently found crack indications in a reactor coolant hot leg weld during an in-service inspection. The NRC has also received preliminary information that another foreign plant found a weld crack indication at the interface of the reactor coolant system piping and the residual heat removal system piping. The staff has asked the foreign regulatory bodies for more information about these and has also asked other foreign regulatory bodies to provide information about any similar conditions.

The NRC has developed a Web page to keep the public informed of this event (http://www.nrc.gov/NRC/REACTOR/SUMMER/index.htm). Another supplement to this information notice will be issued when the root cause of the flaw and extent of condition are determined, or when new information becomes available. The NRC will assess the need for further generic action as new information becomes available.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please call or email one of the technical contacts listed below or contact the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

RA/Charles D. Petrone Acting For/

Ledyard B. Marsh, Chief
Events Assessment, Generic Communications
and Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Technical contacts: Eric Benner, NRR
301-415- 1171
E-mail: ejb1@nrc.gov

Billy Crowley, Region II
404-562-4612
E-mail: brc@nrc.gov

William Koo, NRR
301-415-2706
E-mail: whk@nrc.gov

Attachment:
List of Recently Issued NRC Information Notices

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please call or email one of the technical contacts listed below or contact the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

RA Charles D. Petrone Acting For/

Ledyard B. Marsh, Chief
Events Assessment, Generic Communications
and Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Technical contacts: Eric Benner, NRR
301-415- 1171
E-mail: ejb1@nrc.gov

Billy Crowley, Region II
404-562-4612
E-mail: brc@nrc.gov

William Koo, NRR
301-415-2706
E-mail: whk@nrc.gov

Attachment:
List of Recently Issued NRC Information Notices

Note 1: The V.C. Summer Communications Team reviewed and approved the information notice on 11/16/2000. The Team composition was dictated in a memorandum from J. Zwolinski to B. Sheron on November 14, 2000 (Protocol for NRC Response to Cracked Weld at V. C. Summer - ADAMS Accession Number ML003768599)

Distribution:
IN File
PUBLIC

ACCESSION NO. ML003769172 **TEMPLATE NO. NRR 052**
*See previous concurrence

To receive a copy of this document, indicate in the box C=Copy w/o attachment/enclosure E=Copy with attachment/enclosure N = No copy

OFFICE	REXB	C	MULTIPLE	N	Tech Ed		C:REXB	
NAME	EBenner		Communications Team[Note1]		PKleene*		LMarsh	
DATE	11/16/00		11/16/00		11/15/00		11/16/00	

OFFICIAL RECORD COPY

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
2000-17	Crack In Weld Area of Reactor Coolant System Hot Leg Piping At V.C. Summer	10/18/2000	All holders of OL for nuclear power reactors except those who have ceased operations and have certified that fuel has been permanently removed from the reactor vessel
2000-16	Potential Hazards Due to Volatilization of Radionuclides	10/5/2000	All NRC licensees that process unsealed byproduct material
2000-15	Recent Events Resulting in Whole Body Exposures Exceeding Regulatory Limits	9/29/2000	All radiography licensees
2000-14	Non-Vital Bus Fault Leads to Fire and Loss of Offsite Power	9/27/2000	All holders of OL for nuclear power reactors
2000-13	Review of Refueling Outage Risk	9/27/2000	All holders of OL for nuclear power reactors
2000-12	Potential Degradation of Firefighter Primary Protective Garments	9/21/2000	All holders of licenses for nuclear power, research, and test reactors and fuel cycle facilities
2000-11	Licensee Responsibility for Quality Assurance Oversight of Contractor Activities Regarding Fabrication and Use of Spent Fuel Storage Cask Systems	8/7/2000	All U.S. NRC 10 CFR Part 50 and Part 72 licensees, and Part 72 Certificate of Compliance holders
2000-10	Recent Events Resulting in Extremity Exposures Exceeding Regulatory Limits	7/18/2000	All material licensees who prepare or use unsealed radioactive materials, radio-pharmaceuticals, or sealed sources for medical use or for research and development

OL = Operating License
CP = Construction Permit