CENTRAL FILES

JUL 24 1978

Docket No. 50-263

Northern States Power Company
ATTN: Mr. Leo Wachter
Vice President
Power Production and
System Operation
414 Nicollet Mall
Minneapolis, MN 55401

Gentlemen:

Enclosed is IE Bulletin No. 78-11 which requires action by you with regard to your power reactor facility with an operating license.

Should you have questions regarding this Bulletin or the actions required of you, please contact this office.

Sincerely,

James G. Keppler
Director

Enclosures:
1. IE Bulletin No. 78-11
2. List of IE Bulletins
Issued in 1978

cc w/encls:
Mr. L. R. Eliason, Plant
Manager
Central Files
Director, NRR/DPM
Director, NRR/DOR
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OFFICE ▶	RIII	RIII				
SURNAME ▶	Fiorelli/bk	Keppler				
DATE ▶	7/24/78					

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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

July 24, 1978

IE Bulletin 78-11

EXAMINATION OF MARK-1 CONTAINMENT TORUS WELDS

Description of Circumstances:

On June 28, 1978, Vermont Yankee Power Company (VYPC) reported that five non-penetrating surface crack indications and one nine-inch long surface crack were found in the overlay weld-to-torus base metal heat affected zones during the process of performing modifications (addition of strengthening gussets) to the torus support columns at the Vermont Yankee Nuclear Facility. These modifications were being performed as part of VYPC's overall program to restore the originally intended design safety margins for the Vermont Yankee Mark I containment system (re: Mark I Containment Long Term Program).

Based upon initial indications of the depth, VYPC performed an analysis of the structural capability of the torus shells in the affected areas to support continued operation of the facility and proceeded to attempt to grind out the nine-inch crack. On June 30, 1978, the crack was still apparent after grinding to the calculated depth of 0.25 inches. The plant was placed in a cold shutdown condition on July 2, 1978. An evaluation is in progress.

The welding operations at Vermont Yankee were performed at locations on the torus shell which were lower than the water level in the torus. Although the underlying causes of the cracking have not yet been determined, the presence of water on the opposite side of the torus shell during the welding operations appears to have been a primary contributor. Consequently, a generic concern has arisen that the potential for cracking could exist when welding is performed on a torus containing water.

In view of the above, on July 7, 1978, the NRC Office of Inspection and Enforcement verbally requested licensee's to perform close visual inspections on similarly made torus weldments at Peach Bottom Unit Nos 2 and 3, Quad Cities Unit Nos. 1 and 2, Hatch Unit No. 1 and Monticello facilities. These inspections revealed no apparent linear indications through the painted surface. However, Monticello reported

that magnetic particle examination, together with visual inspection revealed two relevant surface linear indications, 1/2-inch long and 1-1/2 inches long respectively, which were verified by liquid penetrant tests after removal of the paint. Both indications were reportedly removed by grinding at less than 1/8-inch depth.

Action to be Taken by Licensee

Licensees for Peach Bottom Units 2 and 3, Quad Cities Units 1 and 2, Dresden Unit 1 and Monticello are further requested to provide the following information:

Item A

1. Provide descriptions of the welding procedures, procedure qualifications, welder qualifications and electrode controls employed in strengthening the support column to torus connections (i.e., addition of gussets, saddle supports, webs, etc.).

2. Provide a description of the preventive measures used to assure that condensation did not occur on surfaces to be welded prior to and during the welding.

3. Describe the chronology of nondestructive examinations performed subsequent to such welding operations. Include procedures, methods and techniques, the time period of NDE application after specific welds completed have been at ambient temperature, and the results of these examinations.

Item B

Where the NDE documentation (Item A3) is not sufficiently definitive to show that welding to the torus was nondestructively examined after the completed welds were at ambient temperature for a minimum period of 72 hours, the following measures should be taken.

1. Remove paint from surfaces of the overlay weld and torus base metal heat affected zones (if not already done so) by rotary wire brushing or equivalent means.

2. Examine the exposed interbead fusion zone of the overlay weld and the associated base metal heat affected zones utilizing magnetic particle techniques in accordance with the applicable section of the ASME Code.

3. Any indications detected as a result of MT are to be evaluated as to their acceptability in accordance with the applicable ASME code. Examinations that detect relevant linear indications may be supplemented by other nondestructive methods and techniques to determine the character of the flaws (i.e., estimated size, shape, depth, orientation, etc.).

4. Results of the field examination of individual weldments is to be documented.

Within ten days of the date of issue of this Bulletin, report in writing to the Director of the appropriate NRC Regional Office, the information requested in Item A, and your proposed plan of action and schedule regarding Item B if the 72 hour minimum period described above was not met. A copy of your report as submitted to the Regional Office should be sent to the United States Nuclear Regulatory Commission, Office of Inspection and Enforcement, Division of Reactor Operations Inspection, Washington, D. C. 20555.

Approved by GAO, B180225(R0072); clearance expires July 31, 1980. Approval was given under a blanket clearance specifically for identified generic problems.

IE Bulletin No. 78-11
July 24, 1978

LISTING OF IE BULLETINS ISSUED IN 1978

Bulletin No.	Subject	Date Issued	Issued To
78-01	Flammable Contact - Arm Retainers in G.E. CR120A Relays	1/16/78	All Power Reactor Facilities with an OL or CP
78-02	Terminal Block Qualification	1/30/78	All Power Reactor Facilities with an OL or CP
78-03	Potential Explosive Gas Mixture Accumulations Associated with BWR Offgas System Operations	2/8/78	All BWR Power Reactor Facilities with an OL or CP
78-04	Environmental Qualification of Certain Stem Mounted Limit Switches Inside Reactor Containment	2/21/78	All Power Reactor Facilities with an OL or CP
78-05	Malfunctioning of Circuit Breaker Auxiliary Contact Mechanism-General Model CR105X	4/14/78	All Power Reactor Facilities with an OL or CP
78-06	Defective Cutler-Hammer, Type M Relays with DC Coils	5/31/78	All Power Reactor Facilities with an OL or CP
78-07	Protection Afforded by Air-Line Respirators and Supplied-Air Hoods	6/12/78	All Power Reactor Facilities with an OL, all class E and F Research Reactors with an OL, all Fuel Cycle Facilities with an OL, and all Priority 1 Material Licensees

LISTING OF BULLETINS ISSUED IN 1978

Bulletin No.	Subject	Date Issued	Issued To
78-08	Radiation Levels from Fuel Element Transfer Tubes	6/12/78	All Power and Research Reactor Facilities with a Fuel Element transfer tube and an OL
78-09	BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures	6/14/78	All BWR Power Reactor Facilities with an OL or CP
78-10	Bergen-Paterson Hydraulic Shock Suppressor Accumulator Spring Coils	6/27/78	All BWR Power Reactor Facilities with an OL or CP