Central Mail

AMERICAN ELECTRIC POWER Service Corporation

AEP

2 Broadway, New York, N. Y. 10004
(212) 422-4800

JOHN E. DOLAN
Senior Executive Vice President
Engineering & Construction

November 30, 1976

Donald C. Cook Nuclear Plant
Docket No. 50-315 and 50-316
DPR No. 58 and CPPR No. 61

U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60136

Attention: Mr. J. G. Keppler, Regional Director

Gentlemen:

With regard to our April 20, 1976 response letter to IE Bulletin No. 76-02 entitled "Relay Coil Failures - GE Type HFA, HGA, HKA, HMD Relays," we must request an extension of time for installation of the replacement relays.

The relay inspections of Unit 1 and Unit 2 were completed by the dates stated in the above letter. On July 14, 1976 an order was placed with General Electric Company for 330 replacement units to be used in Unit 1. On October 18, 1976 the first shipment of 150 units, which depleted all of General Electric Company's stock, was received by the plant. Since that time 90 units have been installed on Unit 1.

The balance of the order for Unit 1, as well as 207 replacement units for Unit 2, is expected to be received on site during the first week in December 1976.

DEC 6 1976

9602

The original date for completion of relay replacement was stated as January 31, 1977 for both Units 1 and 2. Due to delays in completion and shipment of our order from General Electric Company, we require an extension of 120 days for installation of the relay replacement in Unit 1. Completion of Unit 2 relay replacements will be accomplished before operation of that Unit.

Very truly yours,

John E. Dolan

John E. Dolan
Senior Executive Vice President
Engineering & Construction

JED:mam

cc: Dr. E. Volgenau, Director I&E, U.S.N.R.C.
G. Charnoff
R. C. Callen
P. W. Steketee
R. Walsh
R. J. Vollen
R. W. Jurgensen - Bridgman
R. S. Hunter

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

NOV 26 1976

American Electric Power Service Corporation
Indiana and Michigan Power Company
ATTN: Mr. John E. Dolan
Executive Vice President
Engineering and Construction
2 Broadway
New York, New York 10004

Docket No. 50-315

Gentlemen:

Circular No. 76-06 dated November 22, 1976, contained errors and should be replaced with the enclosed circular dated November 26, 1976.

Sincerely,

G. Fiorelli for

James G. Keppler
Regional Director

Enclosure:
IE Circular No. 76-06

cc w/encl:
R. W. Jurgensen,
Plant Superintendent
Central Files
IE Files
PDR
Local PDR
ELD
Ronald Callen, Michigan Public Service Commission
David Dismore Comey, Citizens for Better Environment

q/D

November 26, 1976
IE Circular No. 76-06

STRESS CORROSION CRACKS IN STAGNANT, LOW PRESSURE STAINLESS PIPING CONTAINING BORIC ACID SOLUTION AT PWR's

DESCRIPTION OF CIRCUMSTANCES:

During the period November 7, 1974 to November 1, 1975, several incidents of through-wall cracking have occurred in the 10-inch, schedule 10 type 304 stainless steel piping of the Reactor Building Spray and Decay Heat Removal Systems at Arkansas Nuclear Plant No. 1.

On October 7, 1976, Virginia Electric and Power also reported through-wall cracking in the 10-inch schedule 40 type 304 stainless discharge piping of the "A" recirculation spray heat exchanger at Surry Unit No. 2. A recent inspection of Unit 1 Containment Recirculation Spray Piping revealed cracking similar to Unit 2.

On October 8, 1976, another incident of similar cracking in 8-inch schedule 10 type 304 stainless piping of the Safety Injection Pump Suction Line at the Ginna facility was reported by the licensee.

Information received on the metallurgical analysis conducted to date indicates that the failures were the result of intergranular stress corrosion cracking that initiated on the inside of the piping. A commonality of factors observed associated with the corrosion mechanism were:

1. The cracks were adjacent to and propagated along weld zones of the thin-walled low pressure piping, not part of the reactor coolant system.

2. Cracking occurred in piping containing relatively stagnant boric acid solution not required for normal operating conditions.

3. Analysis of surface products at this time indicate a chloride ion interaction with oxide formation in the relatively stagnant boric acid solution as the probable corrodant, with the state of stress probably due to welding and/or fabrication.

The source of the chloride ion is not definitely known. However, at ANO-1 the chlorides and sulfide level observed in the surface tarnish film near welds is believed to have been introduced into the piping during testing of the sodium thiosulfate discharge valves, or valve leakage. Similarly, at Ginna the chlorides and potential oxygen

availability were assumed to have been present since original construction of the borated water storage tank which is vented to atmosphere. Corrosion attack at Surry is attributed to in-leakage of chlorides through recirculation spray heat exchange tubing, allowing buildup of contaminated water in an otherwise normally dry spray piping.

ACTION TO BE TAKEN BY LICENSEE:

1. Provide a description of your program for assuring continued integrity of those safety-related piping systems which are not frequently flushed, or which contain nonflowing liquids. This program should include consideration of hydrostatic testing in accordance with ASME Code Section XI rules (1974 Edition) for all active systems required for safety injection and containment spray, including their recirculation modes, from source of water supply up to the second isolation valve of the primary system. Similar tests should be considered for other safety-related piping systems.

2. Your program should also consider volumetric examination of a representative number of circumferential pipe welds by non-destructive examination techniques. Such examinations should be performed generally in accordance with Appendix I of Section XI of the ASME Code, except that the examined area should cover a distance of approximately six (6) times the pipe wall thickness (but not less than 2 inches and need not exceed 8 inches) on each side of the weld. Supplementary examination techniques, such as radiography, should be used where necessary for evaluation or confirmation of ultrasonic indications resulting from such examination.

3. A report describing your program and schedule for these inspections should be submitted within 30 days after receipt of this Circular.

4. The NRC Regional Office should be informed within 24 hours, of any adverse findings resulting during nondestructive evaluation of the accessible piping welds identified above.

5. A summary report of the examinations and evaluation of results should be submitted within 60 days from the date of completion of proposed testing and examinations.

This summary report should also include a brief description of plant conditions, operating procedures or other activities which provide assurance that the effluent chemistry will maintain low levels of potential corrodants in such relatively stagnant regions within the piping.

Your responses should be submitted to the Director of this office, with a copy to the NRC Office of Inspection and Enforcement, Division of Reactor Inspection Programs, Washington, D.C. 20555.

Approval of NRC requirements for reports concerning possible generic problems has been obtained under 44 U.S.C 3152 from the U.S. General Accounting Office. (GAO Approval B-180255 (R0062), expires 7/31/77.)