

313 & B2

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Docket No. 50-313

FEB 16 1972

Mr. J. D. Phillips
Vice President and Chief Engineer
Arkansas Power & Light Company
Sixth and Pine Streets
Pine Bluff, Arkansas 71601

Dear Mr. Phillips:

As you know, an event occurred at a foreign pressurized water power reactor in which an unusual corrosion mechanism occurred when prolonged leakage of borated reactor coolant onto the reactor vessel head was undetected. Subsequent tests have indicated that this corrosion potential might exist under certain conditions when borated fluid has prolonged contact with carbon steel.

To preclude additional experiences of this type, an appropriate program of inservice inspection should be implemented to detect such effects at an early stage. The ASME Code Committee for Inservice Inspection is considering revision of the ASME Code for Inservice Inspection of Nuclear Reactors. However, as an interim measure, we believe that the inspection program described in the enclosure should be incorporated into your inservice inspection program.

Please advise us within thirty days concerning your adoption of the provisions of the enclosure.

Sincerely,

Original Signed by
R. C. DeYoung

R. C. DeYoung, Assistant Director
for Pressurized Water Reactors
Division of Reactor Licensing

Enclosure:
PWR Inservice Inspection Program

cc w/encl: See attached

OFFICE ▶	DRL: PWR-3 x7415 <i>JMMcGough</i>	DRL: PWR-3 KRG	DRL: AD/PWRs <i>RCDeYoung</i>			
SURNAME ▶	JMMcGough: esp	KRGoller	RCDeYoung	8004229	940	LB
DATE ▶	2/15/72	2/15/72	2/15/72			

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Mr. J. D. Phillips

- 2 -

FEB 16 1972

cc w/encl:

Mr. Horace Jewell
House, Holms, & Jewell
1550 Tower Building
Little Rock, Arkansas 72201

Mr. Roy B. Snapp
1725 K Street, N. W.
Washington, D. C. 20006

OFFICE ▶						
SURNAME ▶						
DATE ▶						

Recommended PWR Inservice Inspection Program
for Detection of Effects of Reactor Coolant Leakage

A. Inspection Requirements

- (1) Prior to reactor startup following each refueling outage, all pressure-retaining components of the reactor coolant pressure boundary shall be visually examined for evidence of reactor coolant leakage while the system is under a test pressure not less than the nominal system operating pressure at rated power.

This examination (which need not require removal of insulation) shall be performed by inspecting (a) the exposed surfaces and joints of insulations, and (b) the floor areas (or equipment) directly underneath these components.

At locations where reactor coolant leakage is normally expected and collected (e.g., valve stems, etc.), the examination shall verify that the leakage collection system is operative and leaktight.

- (2) During the conduct of the examinations of (1) above, particular attention shall be given to the insulated areas of components constructed of ferritic steels to detect evidence of boric acid residues resulting from reactor coolant leakage which might have accumulated during the service period preceding the refueling outage.

- (3) The visual examinations of (1) and (2) above shall be conducted in conformance with the procedures of Article IS-211 of Section XI of the ASME Boiler and Pressure Vessel Code.

B. Corrective Measures

- (1) The source of any reactor coolant leakage detected by the examinations of A(1) above shall be located by the removal of insulation where necessary and the following corrective measures applied:
 - (a) Normally expected leakage from component parts (e.g., valve stems) shall be minimized by appropriate repairs and maintenance procedures. Where such leakage may reach the surface of ferritic components of the reactor coolant pressure boundary, the leakage shall be suitably channeled for collection and disposal.
 - (b) Leakage from through-wall flaws in the pressure-retaining membrane of a component shall be eliminated, either by corrective repairs or by component replacement. Such repairs shall conform with the requirements of Article IS-400 of Section XI of the ASME Boiler and Pressure Vessel Code.
- (2) In the event boric acid residues are detected by the examinations of A(2) above, insulation from ferritic steel components shall be removed to the extent necessary for examination of the component

surfaces wetted by reactor coolant leakage to detect evidence of corrosion.

The following corrective measures shall be applied:

- (a) An evaluation of the effect of any corroded area upon the structural integrity of the component shall be performed in accordance with the provisions of Article IS-311 of Section XI Code.
- (b) Repairs of corroded areas, if necessary, shall be performed in accordance with the procedures of Article IS-400 of Section XI Code.