



ARKANSAS POWER & LIGHT COMPANY

November 19, 1984

1CAN118410

Director of Nuclear Reactor Regulation
ATTN: Mr. J. F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
ANO-1 Reactor Coolant Pump Inservice
Inspection Relief Request

Gentlemen:

This letter requests relief from requirements of the ANO-1 Inservice Inspection (ISI) Program relative to examinations of the reactor coolant pump (RCP) casing. The first inspection of an RCP casing at ANO-1 is being conducted during the current refueling outage.

ANO-1 is currently nearing the end of the first 10 year ISI interval. The ISI program, required by 10 CFR 50.55a (g) following the guidance of the ASME Boiler and Pressure Vessel Code Section XI, 1974 (Summer 1975 Addenda), specifies performance of a volumetric examination of the pump casing welds of one RCP during the inspection period. As discussed in previous letters: December 15, 1978, (1CAN127803) and March 2, 1982, (1CNA038202) and November 12, 1982, (1CAN118203) such an examination is impractical for the RCPs installed at ANO-1 using standard examination techniques. Ultrasonic (UT) examination cannot be used due to the material of construction of the RCP casings, which absorbs UT signals. Standard radiography techniques are also impractical since pump disassembly is required to insert the radiography source resulting in unacceptable personnel radiation exposure. AP&L estimates are that pump disassembly to allow such an examination would result in approximately 290 man-Rems of exposure to maintenance and inspection personnel.

Due to the difficulty involved in the use of standard inspection techniques AP&L chose to attempt this examination using the MINAC system developed by EPRI. This system uses a linear accelerator to pass a collimated beam through both sides of the casing thus precluding the need for pump disassembly. Although AP&L recognized this would be the first industry

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experience with the use of the MINAC system on a Byron-Jackson pump, based on AP&L's confidence in the performance of the system and desire to comply with code requirements, AP&L chose not to pursue relief request relative to this item. Following receipt of the MINAC and removal of the RCP insulation in preparation for the examination, it was discovered that portions of the RCP casing weld will not be accessible for inspection. This is primarily due to the configuration of the casing circumferential weld (see attached Figure 1). Due to interferences and the amount of intervening material, the vertical portion of the weld cannot be examined using the MINAC system.

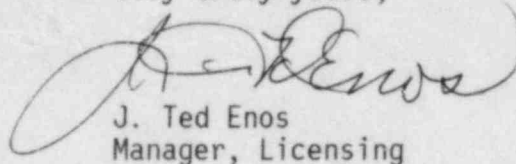
AP&L is currently proceeding with the scheduled inspection and expects to be able to examine approximately ninety-five percent of the pump casing weld volume. However, since this will not completely meet the code requirements, relief is requested in accordance with 10 CFR 50.55a (g). Also included is a related relief request from the requirement for visual examination of the pump casing internal surface. Although the impracticality of pump disassembly has been the subject of previous correspondence, this correspondence concentrated on the volumetric examination of the casing welds. AP&L has investigated alternate inspection techniques such as fiberoptics, etc., but has concluded that no means other than the partial replication exam obtainable with the MINAC system is practical.

The purpose of the visual inspection is to assess the general condition of the component/surface to be examined; including such conditions as scratches, wear, cracks, corrosion or erosion on the surfaces; misalignment or movement of the component or evidence of leaking. The RCPs at ANO-1 are supplied with vibration monitoring equipment and reactor coolant flowrate is continuously monitored. These and other indicators of pump performance have shown no anomalies or degradation indicative of pump internal damage or wear. Based on this knowledge AP&L concluded that the limited additional information to be obtained from a visual examination does not justify the extremely high radiation exposure involved. Consequently a request for relief from the visual examination is included in this submittal. NRC is requested to consider that AP&L's planned examination will provide data significantly beyond that obtained at similar installations at other nuclear power stations. The attached Table 1 shows the specific code sections and requirements from which relief is requested for both the volumetric and visual examinations.

The current 10 year ISI period ends on December 19, 1984. The ISI program for the next 10 year period was submitted by letter dated August 27, 1984. Per a verbal request from NRC staff, AP&L is in the process of consolidating relief requests applicable to the new ISI program. Relief requests for the subject pump casing inspections for the second 10 year period will be included in that letter.

Although the first 10 year interval ends on December 19, 1984, paragraph IWA-2400 of the code includes provisions for delaying inspections up to one year beyond this date. Based on this provision AP&L feels that formal approval of this request is not necessary prior to restart following the current outage. However, since significant preparation and an outage of several weeks would be required to conduct an examination requiring pump disassembly, AP&L requests NRC's prompt review of this matter. Based on the above, AP&L requests that relief from the subject examinations be granted.

Very truly yours,



J. Ted Enos
Manager, Licensing

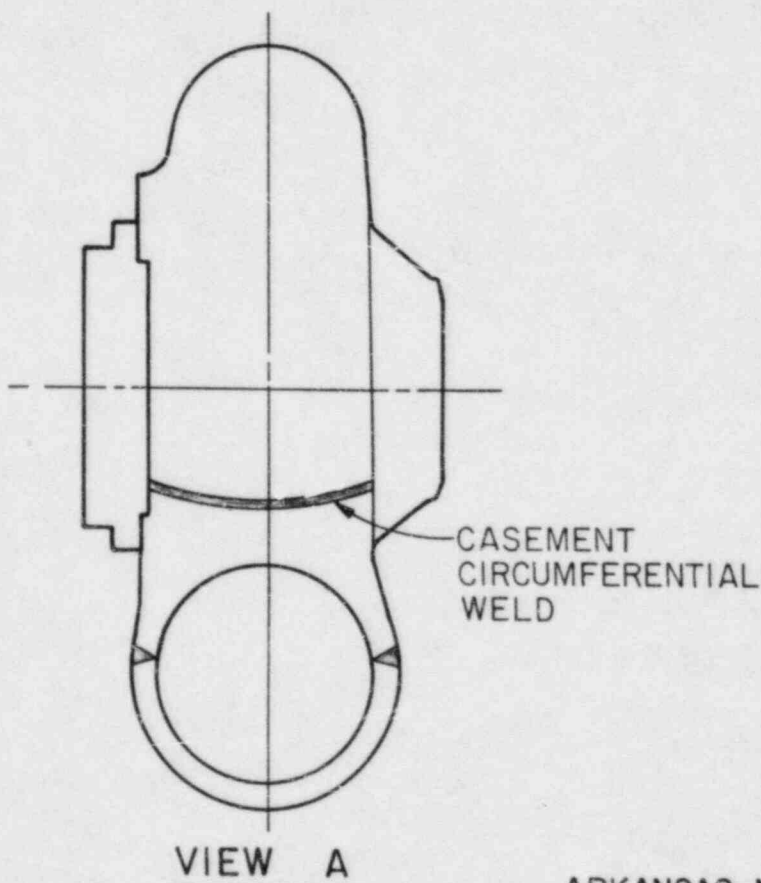
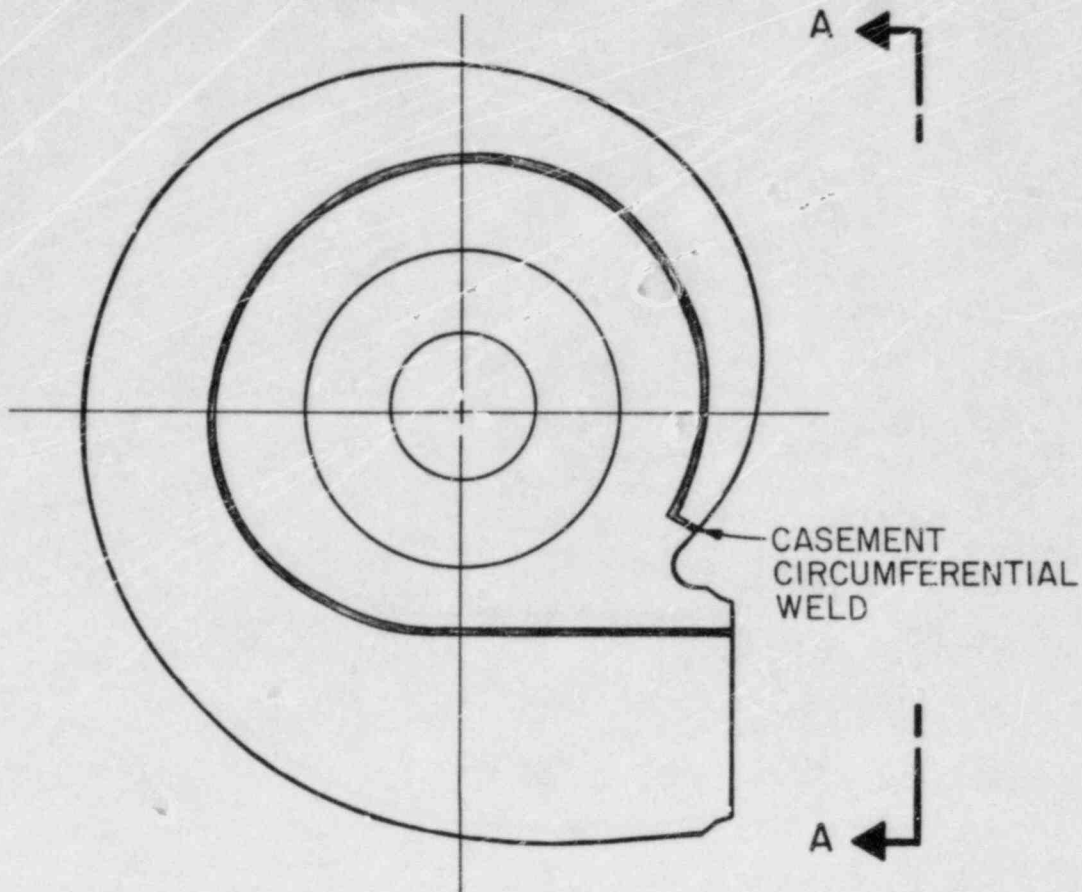
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Attachment

TABLE 1
CLASS 1 COMPONENTS

IWB-2600 ITEM NO.	IWB-2500 ITEM NO.	SYSTEM OR COMPONENT	AREA TO BE EXAMINED	REQUIRED METHOD	LICENSEE PROPOSED ALTERNATIVE EXAMINATION
B.5.6	B-L-1	Reactor Coolant Pump Pressure Boundry	Pump casing weld including weld metal and the base metal for one wall thickness beyond edge of weld	Volumetric: 100% of the pressure retaining weld in at least one pump in the 120 month inspection interval	Volumetric: approximately 95% of the pressure retaining weld in at least one pump in the 120 month inspection interval
B.5.7	B-L-2	Reactor Coolant Pump Pressure Boundry	Pump casing internal pressure boundry surfaces	Visual	Partial surface replication obtainable from casing weld volumetric examination

FIGURE 1



ARKANSAS NUCLEAR ONE
REACTOR COOLANT PUMP
UNIT 1