



ARKANSAS POWER & LIGHT COMPANY  
POST OFFICE BOX 551 LITTLE ROCK, ARKANSAS 72203 (501) 371-4000

November 12, 1982

1CAN118203

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

SUBJECT: Arkansas Nuclear One - Unit 1  
Docket No. 50-313  
License No. DPR-51  
Inservice Inspection (ISI)  
Relief Requests

Gentlemen:

This letter consolidates our responses to your letters dated February 23, 1982, (1CNA028205) and March 2, 1982, (1CNA038202). The stated purpose of your February 23, 1982, letter was to ensure that the ISI relief request information that the NRC is supplying its contractors for review is current and reflects the latest requirements for Arkansas Nuclear One - Unit 1 (ANO-1). The stated purpose of your March 2, 1982, letter was to solicit additional information related to the ISI program for ANO-1. It was felt that a consolidated response would be a more effective way to present the information requested and keep the overall ISI program in perspective.

THE FOLLOWING RESPONSES ARE SPECIFIC TO YOUR FEBRUARY 23, 1982, LETTER:

Item 1. Previous ISI Submittals

You listed five (5) previous submittals on our ISI program and stated that any earlier submittals would be considered obsolete. Accordingly, AP&L was asked to determine if there were any additional previous submittals that NRC should be reviewing. We concur that there are no earlier submittals that the NRC should be reviewing in order to bring current our ISI relief requests. The five (5) letters referenced in your February 23, 1982, letter and this present document (1CAN118203) will update all our requests for ISI relief to this point in time.

A047

8211160263 821112  
PDR ADOCK 05000313  
G PDR

Item 2. Inspection Interval for ANO-1

You indicated that, although the proposed inspection interval for ANO-1 is April 19, 1978 to August 19, 1981, the ISI regulations would allow for an inspection interval of April 19, 1978 to December 19, 1984. In keeping with the provisions of the regulations governing ISI, we concur with the ANO-1 inspection interval being April 19, 1978 to December 19, 1984. Accordingly, we also concur with the ISI review being conducted against the 1974 edition of the ASME Boiler & Pressure Vessel Code, Section XI, up to and including the Summer 1975 Addenda.

Item 3. Additional Requests for ISI Relief

AP&L was also asked to submit any additional requests for ISI relief that the NRC should be considering. Our additional requests and related information are as follows:

Control Rod Drive Mechanism (CRDM) Welds

Discussion - Some of the welds on the CRDM's are not accessible as a result of the shroud covering. This means that AP&L would have to either remove the shroud to perform the required examinations or request relief. Deferral of the examinations to the end of the inspection interval is permitted by the Code; therefore, we believe it will be feasible to perform the CRDM examinations as required by the Code. However, it was felt appropriate at this time to state our intent to defer these examinations for documentation purposes.

Additional Relief Requests on Class I Components

- (1) AP&L requests relief from the requirement to examine the clad patch areas of the reactor vessel, pressurizer, and steam generators as required by the 1974 Edition of Section XI (Items B1.13, B1.14, B2.9 and B3.8, Examination Categories B-I-1 and B-I-2).

Basis - Four reactor vessel closure head patches have been examined visually and with liquid penetrant. In addition, one steam generator clad patch has been visually examined. No evidence of clad degradation has been found. The accessible areas of the reactor vessel interior will be visually examined. This will cover a significant amount of cladding in critical areas of the primary pressure boundary to provide assurance that the general condition of the cladding has not deteriorated.

Proposed Alternate Examination - Visually inspect the accessible areas of the internal pressure boundary surfaces of the reactor vessel. This is consistent with the Summer 1978 Addenda to Section XI, 1977 Edition.

- (2) AP&L requests relief from the requirement to do a volumetric examination of the reactor vessel support skirt weld as required by the 1974 Edition of Section XI (Item B1.12, Examination Category B-H).

Basis - The reactor vessel support skirt-to-vessel weld is impractical to examine volumetrically considering access for examination equipment, the necessity of insulation removal, personnel exposure to a 150-200 mR general area radiation field in the range of 1R on contact with insulation, and the amount of time required to obtain acceptable results. With insulation removed, close proximity radiation readings are expected to be considerably higher. This weld is not considered part of the Section XI, Class 1 (IWB) boundary under the rules of the 1980 Edition and therefore would be exempt from any examination requirements (See Figures 1 & 2).

Proposed Alternate Examination - None.

- (3) AP&L requests to use Article 4 of Section V as referred to by Section XI of the 1977 Edition through Summer 1978 Addenda for ultrasonic examination of the reactor vessel, pressurizer, and steam generators in lieu of Appendix I of the 1974 Edition of Section XI.

Basis - An improved reactor vessel inspection program is being prepared for ANO-1 which is based on USNRC Regulatory Guide 1.150. This Guide refers to Article 4 of Section V, 1977 Edition through Summer 1978 Addenda for ultrasonic examination methods. Article 4 of Section V is equivalent to Appendix I and would provide an inspection program for the major components that is compatible and consistent with future Code-required ultrasonic examinations.

Proposed Alternate Examination - Article 4 of Section V, 1977 Edition, including Addenda through Summer 1978 will be used to establish the ultrasonic examination methods for the referenced components.

- (4) AP&L requests relief from the surface examination requirements of the reactor vessel core flood nozzle-to-safe end and safe end-to-pipe welds as required by the 1974 Edition of Section XI (Items B1.6 and B4.1, Examination Category B-F).

Basis - The preparation includes removal of the refueling canal seal plate, shielding bricks and supports in the nozzle area, and insulation. Scaffolding would also have to be erected. Due to the elevation and proximity to the reactor vessel cavity, temporary shielding is not considered practical. The subject welds will be examined ultrasonically (full-volume) from the ID surface. The 1977 Edition of Section XI, IWB-3514.3 states, "Where indications on the outer surface of piping as detected by the surface examination method during an inservice examination exceed the allowable standards, the indication may be examined by the volumetric method. The acceptance of these indications shall be governed by the allowable indication standards for the volumetric examination method...".

Proposed Alternate Examination - Welds will be ultrasonically examined from the inside surface.

- (5) AP&L requests to use the requirements of the 1977 Edition through Summer 1978 Addenda for examination of branch connection welds (Items B4.6 and B4.7, Examination Category B-J).

Basis - Because of weld and nozzle configurations for branch connections, complete volumetric examination required by the 1974 Edition of Section XI cannot be accomplished. This impracticality was recognized and revisions to the examination requirements were incorporated in the 1977 Edition, Summer 1978 Addenda. The examination requirements of the Summer 1978 Addenda provide adequate assurance that pipe branch connection welds and base metal remain structurally sound.

Proposed Alternate Examination - The examination methods and examination areas for all Class 1 piping branch connection welds will be chosen from Table IWB-2500-1 of the 1977 Edition of ASME Section XI with Addenda through the Summer 1978.

Proposed Alternate Examination - None.

#### Class 2 Components

- (6) AP&L requests relief from volumetric examination of Class 2 piping welds in pipes with nominal wall thickness 0.5 inch and less (Items C2.1, C2.2, and C2.3, Examination Categories C-F and C-G).

Basis - Reliability for detection and characterization of flaws in thin-wall piping using the procedures of the 1975 Summer Addenda is poor. This is mainly due to resolution problems inherent with the ultrasonic technique, weld joint configurations, and material properties in the case of austenitic welds. In some cases, the Code required calibration reflector is over 50% of the pipe wall.

The 1977 and later Editions of Section XI (including Addenda) require a surface examination of Class 1 piping weldments with less than 4 inches nominal pipe diameter and of Class 2 piping weldments 0.5 inch and less in thickness. Non-volumetric examination is required for these welds.

A surface examination (magnetic particle or liquid penetrant) provides better sensitivity for detecting and sizing surface initiating flaws in this thickness range.

Proposed Alternate Examination - A surface examination will be performed on those welds with thicknesses 0.5 inch and less.

- (7) AP&L requests to perform a surface examination in lieu of a volumetric examination where welds are inaccessible due to location of reinforcing collars (Item C2.3, Examination Category C-G).

Basis - The attachment of the reinforcement collar to nozzle penetrations makes the full penetration nozzle weld inaccessible for volumetric inspection.

Proposed Alternate Examination - A surface examination will be performed on the reinforcement collar welds. Only the reactor vessel will be hydro-tested.

Item 4. Continuing Review of ISI Relief Requests

Although this submittal, along with the five letters listed in your February 23, 1982, letter, represents the best information we have compiled at this point in time, we are continuing to review our ISI program. Based upon the results of our review, we may supplement this letter with additional data at a later date so that the NRC can provide any review contractors the most current information available for our facility.

THE FOLLOWING IS SPECIFIC TO YOUR MARCH 2, 1982, LETTER

Your verbatim requests for additional information are followed by our responses (Ref. 2 refers to AP&L's letter (ICAN127803) dated December 15, 1978):

1. General

"Under the change in regulation 10CFR50.55a effective November 1, 1979, your ISI program when finally approved, will cover the last 80 months of your current 10-year inspection interval, i.e., from April 19, 1978 to December 19, 1984. Does this result in any changes you wish to make in your relief requests? Do you require other ISI relief?"

AP&L Response

AP&L wishes to make no changes to our previous relief requests other than those contained in this letter. Additional ISI relief requests are included herein under Item 3 in this letter.

2. Extent of Volumetric Examinations (Question 1, Ref. 2)

"In this question you were asked whether full volumetric examinations can be performed in accordance with code requirements for all Class 1 and 2 systems. Your response suggested that the plant has some partially inaccessible welds for which relief requests have not been prepared. For example, the use of Article I-5121 to record limited examination is discussed and the suggestion is made that "a supplemental... surface examination could be performed". Formal relief requests should be submitted on welds for which complete compliance with code requirements is not possible. The fraction of the weld which is inaccessible should be estimated as well as the total fraction of inaccessible welds or weld length in a given code item. As appropriate, a definite commitment should be made to perform any supplemental, alternative examinations."

AP&L Response

Included in our above response to your February 23, 1982, letter are all relief requests AP&L wishes to make at this time on inaccessible welds. In all cases, the total weld should be considered as "inaccessible" for the reasons noted. Our commitments to perform any necessary supplemental, alternative examinations were included under the headings, "Proposed Alternate Examination."

3. Exemption due to Paragraph IWC-1220 of Section XI (Question 6, Ref. 2)

"In your response you identified Class 2E systems on your P&ID's as being exempted from examination because of paragraph IWC-1220. The NRC does not accept the "chemistry control" provision of the S-75 addenda as a basis for exempting systems for inspection. You should develop an ISI program for the ECC, RHR, and CHR (containment heat removal) systems that complies with the intent of the S-79 addenda, in which the "chemistry control" provision has been deleted. A commitment to such a program with any necessary relief requests for reasons other than chemistry control, should be provide in response to this inquiry."

AP&L Response

The ISI program for ANO-1, which is presently committed to the 1974 edition of the ASME Boiler and Pressure Vessel Code, Section XI, up to and including the Summer 1975 Addenda, was established and put into effect prior to the acceptance of the Summer 1979 Addenda. Therefore, it is AP&L's position that the exemption from examination based on IWC-1220 is valid, that this exemption is allowable, and that it does not require NRC approval. This situation is analogous to the less than 4 inch Class 2 piping exemption.

AP&L will, however, pursue the development of an ISI program for the Emergency Core Cooling, Decay Heat Removal, and Containment Cooling Systems during the next ISI program upgrade as required by 10CFR50.55a.

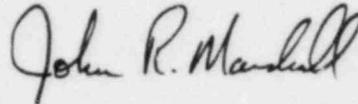
4. Item B5.6, Volumetric Examination of Pump Casing Welds, and Others (Ref. 2)

"Your response to Question 2 indicates "that relief request on this item is to follow at a later date". Possible relief requests are also pending on: (a) Question 6 - pressure testing of Class 2E systems, (b) Question 7 - pressure testing of service water system, and (c) Question 9 - supplementary information (resulting from March 1, 1979 outage) re. HPI and core flood line welds. Please provide as much of the missing information as possible."

AP&L Response

Except for those requests explicitly made or referenced in this letter, we are withdrawing our previous relief requests where the development of additional information was pending. Should the need arise for ISI relief at a future date, we will advise NRC with a specific request for relief at that time.

Sincerely,



John R. Marshall  
Manager, Licensing

JRM:DET:sc

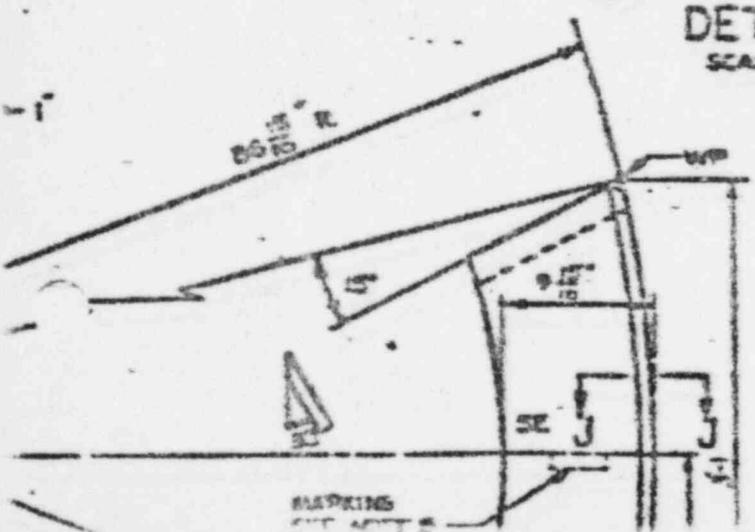
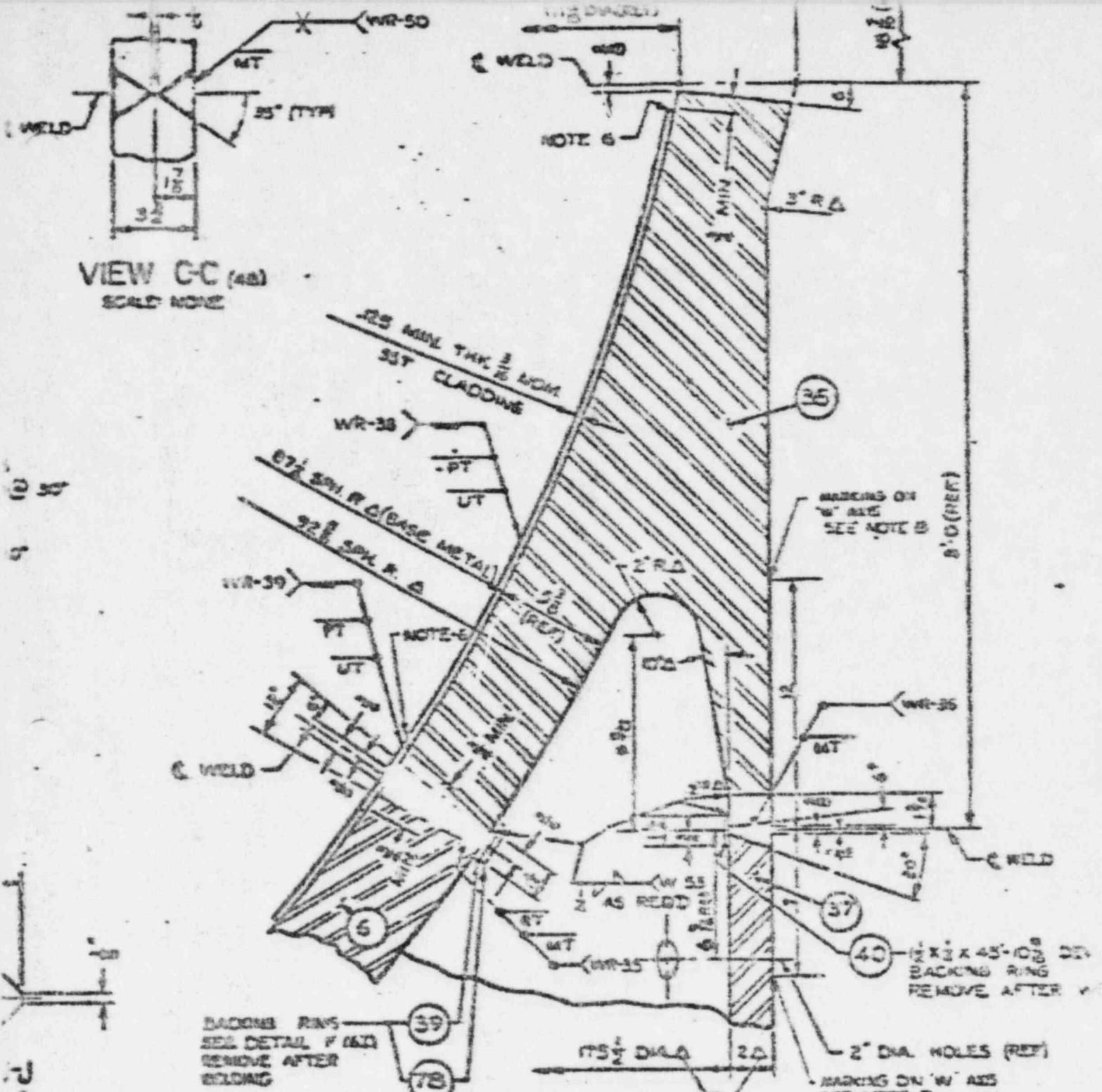
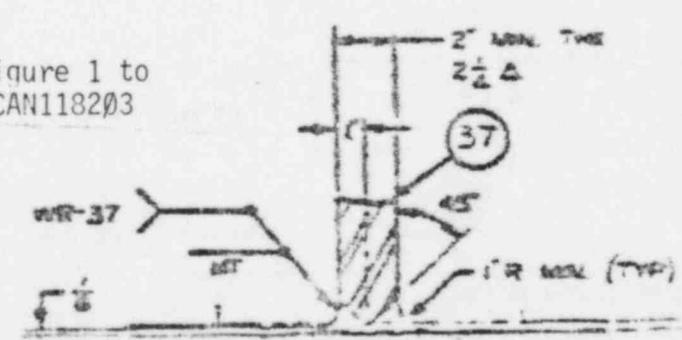
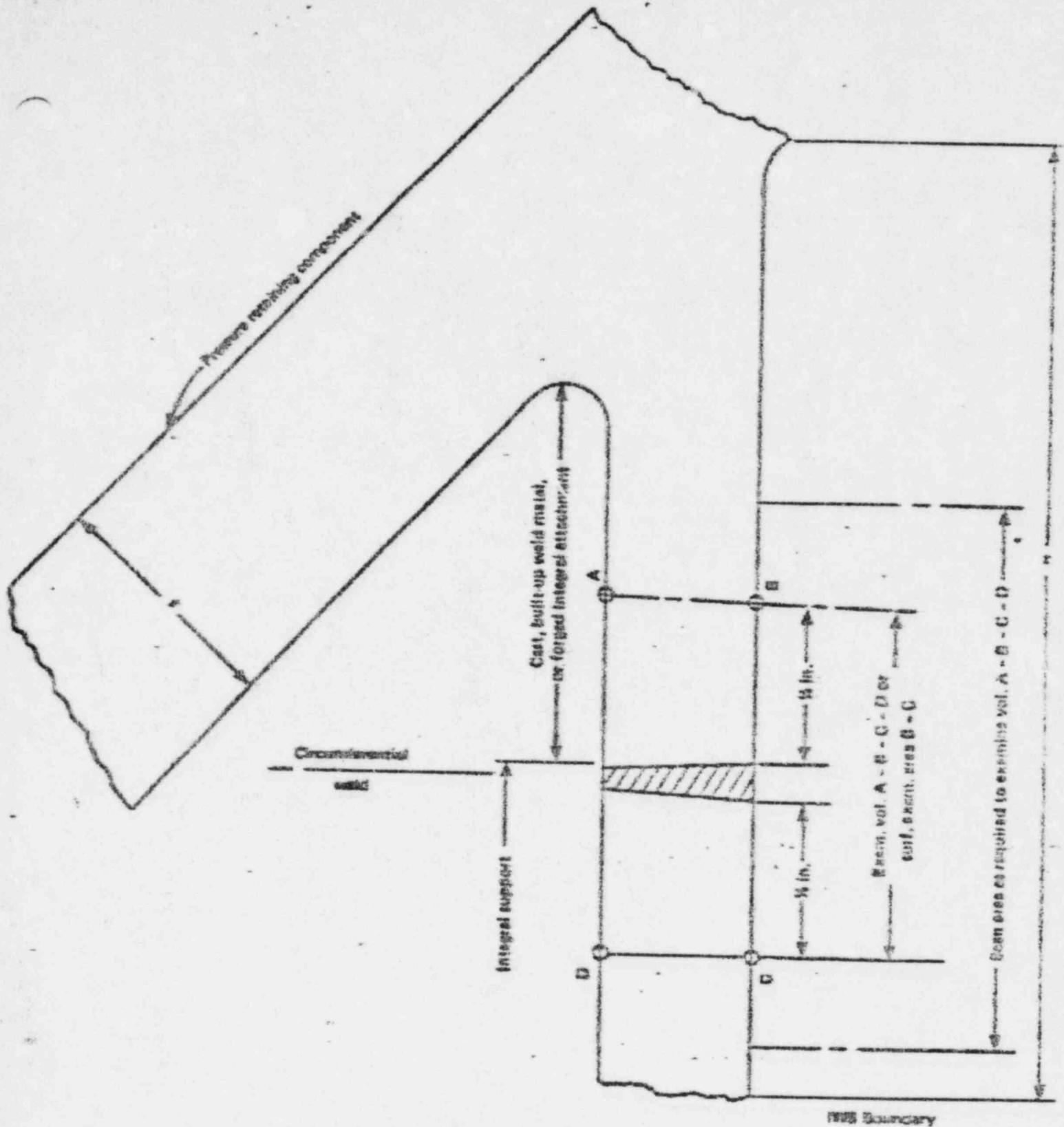


Figure 1 to  
1CAN118203





NOTE: A volumetric examination from one side (B - C) of the circumferential weld may be performed in place of the surface method.

FIG. IWB-2500-14 SUPPORT CIRCUMFERENTIAL WELD JOINT  
Figure 2 to 1CAN118203