INSERVICE INSPECTION PLAN
FOR THE FIRST TEN-YEAR INTERVAL
AT
BEAVER VALLEY POWER STATION UNIT #2

ALTERNATIVE REQUEST BV2-RV-AUG-1, REV. 1

SUBJECT: Reactor Vessel Lower Circumferential Weld (2RCS-REV21-C-4)

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Beaver Valley Power Station Unit No. 2

RELIEF REQUEST NO. BV2-RV-AUG-1, Rev. 1

COMPONENT

Reactor Vessel Lower Head Circumferential Weld (2RCS-REV21-C-4)

DRAWING NO.

10080-ISI-E-1A

AUGMENTED REQUIREMENT

10CFR50.55a(g)(6)(ii)(A) requires that examination requirements for reactor vessel shell welds specified in Item B1.10 of Examination Category B-A in Table IWB-2500-1 of subsection IWB of the 1989 Edition of Section XI be implemented as part of the current inspection interval. A volumetric examination is required for Item B1.10 welds.

BASIS OF RELIEF

In accordance with 10CFR50.55a(a)(3)(ii), an alternative to the requirement is proposed on the basis that compliance with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The lower head to shell weld (2RCS-REV21-C-4) examination is limited due to four core support lugs.

This weld was examined using automated techniques during the 2R06 refueling outage. Over eighty-nine percent (89%) of the required volume was examined. The four lugs are welded to the inside surface of the reactor vessel just above weld 2RCS-REV21-C-4. Access to the outside diameter of this weld is precluded by the neutron shield tank. Supplemental scan angles were also considered. It was determined that use of 45° and 60° shear waves, with a 70° refracted longitudinal angle for the near surface and clad interface provided the maximum examination coverage and efficiency of transducer movement.

10CFR50.55a(g)(6)(ii)(A) defines "essentially 100%", for the purposes of the augmented examination, as more than 90 percent of the examination volume of each weld, where the reduction in coverage is due to interference by another component, or part geometry. To obtain the last 1% of the required volume would necessitate removal of one of the support lugs. Removal of a support lug, for this purpose, is considered a hardship. A majority of the required volume was covered (89%), and this amount of coverage provides an adequate level of quality and safety.

PROPOSED ALTERNATIVE TO THE RULE

The alternative to the rule is to perform the examination to the maximum extent possible. This examination is supplemented by the visual examination performed on the interior of the vessel. The four support lugs are included in this examination. Therefore, the UT examination coupled with the visual examination of the support lugs and the surrounding areas provides an adequate measure of assurance of the integrity of this weld.