FENOC
FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077-0004

Lew W. Myers
Senior Vice President

724-682-5234
Fax: 724-643-8069

February 6, 2001
L-01-016

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit No. 1 and No. 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
ISI (Inservice Inspection) Program Relief Request

In accordance with 10 CFR 50.55a(g)(5)(iii), this submittal requests NRC review and approval of a revised relief request applicable to the Ten-Year ISI Program for BVPS Unit 1.

Relief Request 1-TYP-3-B5.70-1, Revision 1 is attached for your review. This request involves a limited volumetric examination in lieu of 100% volumetric examination for Steam Generator Nozzle Safe End-to-Pipe welds.

Revision 0 of this request was submitted in 1997 along with the BV-1 ISI 3rd Ten Year Interval update, and was approved by the NRC on December 29, 1998. The NRC granted relief based on approximately 70% volumetric coverage, in conjunction with 100% Code-required surface examination. However, ultrasonic examinations performed during the current Inspection Interval have covered less than 70% of the required volume. The required examinations cannot be performed as written. The enclosed relief request explains the reasons that the examinations are not possible. Therefore, a revision to the previously approved relief request is necessary. The NRC response to this submittal is requested prior to August 1, 2001, which is the end of the First Period of the Third Interval for BVPS Unit 1.

Additionally, the withdrawal of four previously approved relief requests is requested. These relief requests are no longer valid due to NRC rulemaking regarding expedited implementation of ASME XI, Appendix VIII. The four requests are:

1-TYP-3-APP-I-1, Rev. 0	UT examiner renewal qualification for bolting
1-TYP-3-UT-1, Rev. 0	Alternative UT Examination Techniques
2-TYP-2-APP-I-1, Rev. 0	UT examiner renewal qualification for bolting
2-TYP-2-UT-1, Rev. 0	Alternative UT Examination Techniques

A047

If you have any questions regarding this submittal, please contact Mr. Thomas S. Cosgrove, Manager, Regulatory Affairs at 724-682-5203.

Sincerely,

Lew W. Myers

c: Mr. L. J. Burkhart, Project Manager
Mr. D. M. Kern, Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator

Beaver Valley Power Station Unit No. 1

RELIEF REQUEST NO. 1-TYP-3-B5.70-1, Rev. 1

COMPONENT

Steam Generator Nozzle Safe End to Pipe Welds:

DLW-LOOP1-2-F-04	DLW-LOOP1-3-F-05
DLW-LOOP2-2-F-16	DLW-LOOP2-3-F-17
DLW-LOOP3-2-F-28	DLW-LOOP3-3-F-29

DRAWING NO.

ISI-L-001A, ISI-L-002A, ISI-L-003A

ASME CODE (1989 Edition) / REGULATORY REQUIREMENTS

Item No. B5.70 (IWB-2500-1, Category B-F) requires a surface and a volumetric examination. 10 CFR 50.55a(b)(2)(xvi)(B) states that, "Examinations performed from one side of a ferritic or stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to two sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 50.55a(b)(2)(xv)(A)".

RELIEF REQUESTED

In accordance with 10 CFR 50.55a(g)(5)(iii), relief is requested from the examination coverage and qualification demonstration requirements for austenitic piping welds with single side access specified in 50.55a(b)(2)(xvi)(B) on the basis that compliance is impractical. The examinations covered by this relief will be performed in the Third Inspection Interval at BV-1.

BASIS OF RELIEF

The Steam Generator nozzle to safe end welds are austenitic welds that connect the nozzles to loop piping elbows. The as-cast surface of the nozzle precludes examination from the nozzle side of the weld. Ultrasonic examinations can be performed on the surface of the weld. The pipe side of the weld, which is a cast elbow, is machined for a distance of approximately 3 inches from the surface edge of the weld. This distance does not provide adequate space to allow complete interrogation of the required volume.

The regulation, 50.55a(b)(2)(xv)(A), requires that if access is available, the weld must be scanned in each of the four directions (parallel and perpendicular to the weld) where required. Coverage of single side exams on ferritic piping may be credited where examination from both sides is not possible. However, for austenitic piping, a procedure must be qualified with specimen flaws on the inaccessible side of the weld. There are currently no qualified single side examination procedures that demonstrate equivalency to two sided examination procedures on austenitic piping welds. Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations

common to US nuclear applications. Thus, complying with the Code and regulatory requirements for single side examination of austenitic piping welds is impractical. These examinations are further limited due to the inherent coarse grain structure of the cast stainless (ASTM A351 GR CF8A) elbows.

A dual element, 45° refracted longitudinal search unit was used for the UT examinations. Supplemental scan angles were considered to improve examination coverage. However, none were considered viable for this application due to the coarse-grained material and scan surface limitations present.

The surface examination can be performed on 100% of the required surface. Ultrasonic examinations performed during the current (3rd) Inspection Interval on two of the welds noted above covered 52% of the required volume. The current credited examination coverage is lower than previous examinations due to the limitations documented on the most recent examination reports and the current method used to calculate coverage. The remaining four nozzle safe end to pipe welds listed above are scheduled for examination later in this Interval. Similar coverage limitations are expected.

ALTERNATIVE EXAMINATION

The alternative to the examination requirements will be to perform the complete surface examination and to perform the ultrasonic examination to the maximum extent practical from the accessible side of the weld. The percentage of the examination limitation will be noted on the examination reports and in the outage summary report.

NOTE: Revision 0 of this Relief Request estimated the expected UT coverage (approximately 70%) based on examinations performed during the 2nd Inspection Interval. The current revision of this request (Rev 1) includes the actual examination coverage obtained on two of the safe-end welds during the current inspection interval (Interval 3). The NRC Safety Evaluation, dated 12/29/98, approved Revision 0 of this request, but required submittal of a new request for relief if the examinations resulted in less volumetric coverage than stated.