FENOC
FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
Route 168
P.O. Box 4
Shippingport, PA 15077-0004

Mark B. Bezilla
Site Vice President

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

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L-02-063

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

Subject: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Inservice Inspection Program, Proposed Revision 1I

Attached for NRC review and approval is proposed Revision 1I to the Beaver Valley Power Station Unit 1 (BVPS-1) Inservice Testing (IST) Program. This revision incorporates a new relief request, Pump Relief Request No. 6 (PRR6), which is being submitted for NRC review and approval in accordance with 10 CFR 50.55a(a)(3)(i).

The BVPS-1 Boric Acid Transfer Pumps [1CH-P-2A and 2B] are currently tested on a quarterly frequency through a mini-flow recirculation line without measuring flow, and on a refueling frequency through a full-flow recirculation line while all required parameters are measured. This testing is in accordance with Position 9 of Generic Letter 89-04 and is documented in the current Pump Refueling Outage Justification No. 1 (PROJ1).

PRR6 requests that as an alternative to the testing performed, the full-flow recirculation test be performed while on-line just prior to a refueling outage. Full-flow testing at this frequency will assist in our desire to minimize refueling outage durations and maximize work management, while not impacting the level of quality and safety of the Boric Acid Transfer Pumps.

Relief is needed because the ASME XI Code does not recognize testing on-line at any frequency other than quarterly. PRR6 provides the basis for why this alternative testing is acceptable. NRC approval of PRR6 is requested by February 8, 2003, in order to incorporate this planned testing prior to the BVPS-1 Fifteenth Refueling Outage currently scheduled to begin on March 8, 2003.

If you have any questions concerning this matter, please contact Mr. Larry R. Freeland, Manager, Regulatory Affairs/Corrective Action at 724-682-5284.

Sincerely,

Mark B. Bezilla

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Enclosure

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

BEAVER VALLEY POWER STATION

Unit 1

Inservice Testing (IST) Program For Pumps And Valves

Proposed Revision 11

Preparer Joann N. West	Date: 4-1-02
IQR/OSC Meeting #	Date: 4/1/02
Owner Approval RGW	Date: 4/1/02
Approval Authority	Date: 4-3-02

PUMP RELIEF REQUEST _6

Pump Asset No(s):	1CH-P-2A 1CH-P-2B
System:	7 – Chemical and Volume Control
Function:	To supply borated water from the Boric Acid Tanks to the suction of the Charging HHSI pump for injection into the RCS for emergency boration.
Test Requirement:	Per OM-6, Paragraph 5.2, "Test Procedure" and Table 2, "Inservice Test Parameters," flow rate shall be determined and recorded.
Basis for Relief:	In accordance with 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternatives would provide an acceptable level of quality and safety. Testing the Boric Acid Transfer pumps using the emergency boration flow path is impractical during power operation because it would inject water with higher concentration of boric acid into the RCS which would result in a reactivity transient and subsequent reactor shutdown. Therefore, the code-required quarterly testing is performed using an alternate test loop as shown on the attached figure. During normal plant operations, the pumps are tested quarterly through [RO-1CH-ORBA-1(2)], the restricting orifices in the minimum flow fixed resistance recirculation lines. However, there are no installed flow instruments in these recirculation lines. Because of the restricting orifices, the flow is assumed to be fixed and at its reference value. Delta-P and vibration are then measured and compared to the acceptance criteria. Position 9 of GL 89-04 states that "In cases where flow can only be established through a non-instrumented minimum flow path during quarterly pump testing and a path exists at cold shutdowns or refueling outages to perform a test of the pump under full or substantial flow conditions, the staff has determined that the increased interval is an acceptable alternative to the Code requirements, provided that pump differential pressure, flow rate, and bearing vibration measurements are taken during this testing and that quarterly testing also measuring at least pump differential pressure and vibration is continued." Therefore, in accordance with Position 9 of the GL 89-04, the pumps have also been tested through their full flow recirculation flow paths through [HCV-1CH-110(105)], at a refueling frequency. For the full-flow recirc test, the flow is measured using a portable ultrasonic flow meter that has been "wet-flow" calibrated to within the ±2% accuracy required by ASME. In order to install the flow meters, however, the insulation on the piping must be removed and the heat trace elements must be moved away from where the transducers and tracks will be installed. Moving the heat trace elements places stresses on them, which increases the probability of failure of the heat trace elements. The heat tracing on the boric acid piping is needed to support system operability. Therefore, it is also impractical to test the pumps at a cold shutdown frequency.

PUMP RELIEF REQUEST _6

A review of past test results has shown that this combination of quarterly and refueling frequency testing is capable of assessing pump performance and detecting degradation.

The use of the portable ultrasonic flow meter and full-flow recirc flow path was considered for the quarterly test. It was determined, however, that use of the full-flow recirc line was impractical for quarterly testing. Testing quarterly using the temporary ultrasonic flow meter would lead to the increased probability of failure of the heat trace elements and to increased dose for the laborers who remove/re-install the insulation and the technicians who install the flow meters. In addition, additional calibrated flow instrumentation would have to be purchased to ensure the availability of the equipment. Permanently installing the flow meters would require a design change to the plant and the purchase of additional flow instrumentation. Performing the full-flow test quarterly and during cold shutdowns would not enhance our ability to assess the operability of the pumps enough to justify the increased cost or a system design change.

In addition, testing during refueling outages diverts manpower from other refueling tasks. These tests must be scheduled at a time in the outage when the Boric Acid Tanks are not required to be part of the Tech Spec boration flow path and must be coordinated with power supply outages. Even though the actual performance of the these tests may be completed in a relatively short time, the set-up and restoration time is approximately 8 – 10 hours for each pump. Removing the tests from the outage schedule would allow a greater focus on other safety related tasks without impacting the level of quality and safety of the Boric Acid Transfer Pumps. In addition, a PRA risk evaluation has determined that there is no increase in risk for the performance of this test, whether on-line or during refueling outages. Therefore, it is requested to perform the full-flow test on a refueling frequency while on-line, typically in the weeks just prior to the refueling outage. Overall, proper monitoring of pump performance will be maintained via quarterly testing and full flow testing on a refueling frequency.

Alternate Test:

In accordance with Position 9 of GL 89-04, test quarterly through a fixed-resistance minimum flow recirculation line: assuming flow to be constant and measuring delta-P in 1OST-7.1(2), "Boric Acid Transfer Pump Operational Tests," and test at a refueling frequency while on-line in the weeks prior to a refueling outage or during refueling outages at "full-flow" through a larger recirculation line, using a portable ultrasonic flow meter in 1OST-7.13(14), Boric Acid Transfer Pump Full-flow Tests.

Separate vibration reference and acceptance criteria values will be used for the different test conditions of the recirc and full-flow tests.

References:

OM-6, Paragraph 5.2 and Table 2.
Generic Letter 89-04, Position 9.
NUREG-1482, Paragraph 3.1.1.

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