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February 1, 2002
L-02-011

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

Subject: Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
Inservice Testing Program, Proposed Revision 2G – Addendum 1

On January 4, 2002 a proposed Revision 2G to the Beaver Valley Power Station Unit 2 (BVPS-2) Inservice Testing (IST) Program was submitted for NRC review and approval. This revision incorporates a new relief request, Valve Relief Request No. 3 (VRR3), which was submitted in accordance with 10 CFR 50.55a(f)(5)(iii).

As a result of our telephone conversations with members of your staff on January 8, and January 25, 2002, this proposed revision is being amended. Attached is Addendum 1 to Proposed Revision 2G which incorporates a revision to relief request VRR3.

VRR3 requests relief from testing the Recirculation Spray (RSS) Heat Exchanger Service Water (SWS) Supply Isolation Valves [2SWS*MOV103A and B] and the SWS Supply Header Isolation Valves [2SWS*MOV106A and B] on a quarterly frequency while on-line. The valves are currently required to be tested at each refueling outage and are cycled during the SWS Full Flow Tests as noted in Valve Refueling Outage Justification No's. 46 and 47 (VROJ46 and VROJ47). It has been determined that testing can be done on-line during certain times of the year when SWS cooling load demands are low; therefore, relief is being requested to test these valves at a refueling outage frequency while on-line (in the weeks just prior to the refueling outage) or during the refueling outage. In addition, testing will be performed during cold shutdowns of sufficient duration.

Relief is needed because the ASME XI Code does not recognize testing on-line at any frequency other than quarterly. VRR3 provides the basis for why testing on-line each quarter is not practical. Testing on-line has already been performed prior to 2R09. Therefore, subsequent quarterly testing of these valves will be required per the ASME XI Code unless relief is granted per above. In order to obtain relief from the requirement

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to test these valves quarterly following their testing in January 2002, NRC approval of VRR3 is requested by May 1, 2002, as identifed in our intial submittal.

If you have any questions regarding this submittal, please contact Mr. John J. Maracek, Supervisor, Regulatory Affairs at 724-682-5232.

Sincerely,

Lew W. Myers

Attachments

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 2

Inservice Testing (IST) Program For Pumps And Valves

Proposed Revision 2G-Addendum 1

Preparer	*Original Signed by* David T. Jones	Date: 1/28/02
IQR/OSC Meeting #	*Original Signed by* Joann H. West	Date: 1/29/02
Owner Approval	*Original Signed by* J. L. Freels	Date: 1/29/02
Approval Authority	*Original Signed by* P. P. Sena / Dave Held	Date: 1/29/02

(PROPOSED REVISION 2G-Addendum 1)

VALVE RELIEF REQUEST 3

Valve Mark No(s): 2SWS*MOV103A
2SWS*MOV103B
2SWS*MOV106A
2SWS*MOV106B

Category: B **Class:** 3

System: 30 - Service Water

Function: The Recirculation Spray (RSS) Heat Exchanger Service Water (SWS) Supply Isolation Valves [2SWS*MOV103A and B] must open to supply SWS cooling water to the RSS Heat Exchangers during a CIB. They must re-close in the long term post-accident following a CIB and with the residual heat removal (RHR) system placed into service, to provide SWS cooling for the Component Cooling Water (CCP) Heat Exchangers in order to cool the RHR Heat Exchangers and bring the plant to cold shutdown conditions.

The SWS Supply Header Isolation Valves [2SWS*MOV106A and B] must close on receipt of a CIB signal to ensure sufficient SWS cooling flow to the Recirculation Spray Heat Exchangers. They must re-open in the long term post-accident following a CIB to provide SWS cooling for the Component Cooling Water (CCP) Heat Exchangers in order to cool the Residual Heat Removal (RHR) Heat Exchangers and bring the plant to cold shutdown conditions.

Test Requirement: Per OM-10, Paragraph 4.2.1.1, "Exercising Test Frequency," active Category B valves shall be tested nominally every 3 months.

Basis for Relief: In accordance with 10CFR50.55a(f)(5)(iii), relief is requested on the basis that compliance with the code requirements is impractical for BVPS-2.

[2SWS* MOV103A and B] are normally closed during plant operation to isolate SWS flow to the RSS Heat Exchangers which are maintained in a dry lay-up condition. Their safety positions are open to supply DBA flow to the RSS Heat Exchangers following a CIB, and closed to ensure adequate SWS cooling for RHR cool down of the plant to cold shutdown conditions. [2SWS*MOV106A and B] are normally open during plant operation to support SWS operation. Their safety position is closed to ensure sufficient SWS supply to the Recirculation Spray Heat Exchangers, and open to support RHR operation for cool down of the plant to cold shutdown conditions.

<u>During Normal Plant Operation:</u>

[2SWS*MOV103A and B] cannot be cycled open and closed during normal plant operation without directing service water (Ohio River water) flow to the RSS Heat Exchangers and/or connecting SWS piping. The piping and heat exchangers are normally maintained in a dry lay-up condition in order to maintain them in an operationally ready state. Plant operating experience has shown that the introduction of service water deposits Asiatic clams, other marine life, river mud and silt into the heat exchangers and/or connecting piping, and would unnecessarily degrade the operational readiness of the system.

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In addition, opening [2SWS*MOV103A or B] by themselves, cannot be performed during plant operation unless [2SWS*MOV106A or B] or the RSS Heat Exchanger Inlet Isolation Valves [2SWS*MOV104A-D] are closed because the SWS cannot simultaneously support normal plant operations and full flow to the RSS Heat Exchangers. If testing was conducted with the RSS Heat Exchanger Inlet Isolation Valves [2SWS*MOV104A-D] shut, draining of the connecting SWS piping, which is of significant diameter and length, would lead to increased maintenance and radiological exposure. If testing was conducted with [2SWS*MOV104A-D] open, additional draining and cleaning of the RSS Heat Exchangers (in addition to the piping) would also lead to increased maintenance, radiological exposure and possibly a plant shutdown if cleaning of the RSS Heat Exchangers could not be accomplished within the Technical Specification required 72 hour LCO action time.

Therefore, exercising these valves quarterly is considered to be impractical during normal operation. Per OM-10, Paragraph 4.2.1.2(c), "If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns."

During normal plant operation, both SWS subsystems (trains) are required to be in-service supplying safety related equipment per Technical Specification 3.7.4.1. Closing [2SWS*MOV106A (B)] during plant operation without also directing flow to the RSS Heat Exchangers by opening [2SWS*MOV103A (B)], would require the SWS pump operating on the SWS train being tested to be shutdown (in order to prevent damaging the pump by operating at less than minimum flow). Shutting down the SWS pump operating on the SWS train being tested would result in the following:

(1) Loss of the redundant SWS subsystem due to no flow to the following safety related cooling loads on that train. This is because the SWS subsystems cannot be cross-connected at these cooling loads in order to maintain train separation as required by GDC 44.

- Emergency Diesel Generator Coolers
- Charging Pump Coolers
- Control Room cooling
- Safeguards Area cooling
- Rod Control Area cooling (not normally aligned)
- Motor Control Center Room cooling
- PASS cooling (B Train only)

This would also require entry into the 72 hour Technical Specification 3.7.4.1 LCO action time.

(2) Maintenance Rule out-of-service time would be accumulated for the EDG and Charging Pump operating on that train until the SWS header being tested is restored to operable status.

(3) Partial draining of the SWS header being tested would occur due to gravity draining to the outfall. It is estimated that it would take approximately four hours to restore the header to a filled and vented condition.

(4) The removal of the above equipment from service would result in high PRA risk which has been evaluated to exceed current limits for performing such an activity without first obtaining management authorization.

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Pre-test alignment of the SWS subsystems would be required to enable as much cooling flow as possible to the station loads placed on the SWS header in service, if [2SWS*MOV106A (B)] were to be closed and the SWS pump shutdown (without also directing flow to the RSS Heat Exchangers). This would involve extra-ordinary time consuming valve line-ups which are not desirable during normal plant operation. These valve line-ups are estimated to take more than one shift (eight hours) per train to perform, both before and after the test.

Since both SWS subsystems must be maintained operable during normal operation, [2SWS*MOV103A(B)] must be opened with flow to the RSS Heat Exchangers when also closing [2SWS*MOV106A(B)]. Opening [2SWS*MOV103A and B] has been shown to be impractical during normal operation, therefore, testing of [2SWS*MOV106A and B] is also considered to be impractical during normal operation. Per OM-10, Paragraph 4.2.1.2(c), "If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns."

During Cold Shutdown:

Testing of these valves is possible during cold shutdowns when one train of SWS can be isolated, because both trains of SWS are no longer required by Technical Specifications. However, this can be a burden during some cold shutdowns. Although it is not required by Technical Specification 3.7.4.1 to have both SWS subsystems (trains) in service during cold shutdown, it is desired to maintain two trains of SWS in operation in order to maintain cooling to the opposite train cooling loads. This would include cooling to the Emergency Diesel Generator for electric power availability, Charging Pump for boration flowpath & RCS inventory flowpath, and the Residual Heat Removal (RHR) System cooling via Primary Component Cooling (CCP). Both trains of RHR are used during cooldown of the plant to cold shutdown and are required to be operable during a cold shutdown per Technical Specifications 3.4.1.3 when all three Reactor Coolant Loops are inoperable or not in service.

Testing [2SWS*MOV103A and B] and [2SWS*MOV106A and B] during cold shutdowns would also involve shutting down the SWS pump operating on the SWS train being tested. Testing [2SWS*MOV 106A or B] would result in partial draining of the SWS header being tested due to gravity draining to the outfall. It is estimated that it would take approximately four hours to restore the header to a filled and vented condition. In addition, re-alignment of the SWS subsystems to enable testing of [2SWS*MOV106A and B] while maintaining two SWS subsystems in operation during cold shutdown would require extra-ordinary time consuming valve line-ups which are not desirable during cold shutdowns of short duration. These valve line-ups are estimated to take more than one shift (eight hours) per train to perform, both before and after the test, and would divert necessary resources from other outage work. The entire testing evolution could increase the outage duration if performed during cold shutdowns of short duration. NUREG-1482, Section 3.1.1.1, "IST Cold Shutdown Testing," states that plant startup need not be delayed to complete inservice testing during cold shutdown.

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Therefore, full-stroke exercising [2SWS*MOV103A and B] and [2SWS*MOV106A and B] in both directions will be performed during cold shutdowns of sufficient duration and at least during refueling outages if not tested within the previous 92 days.

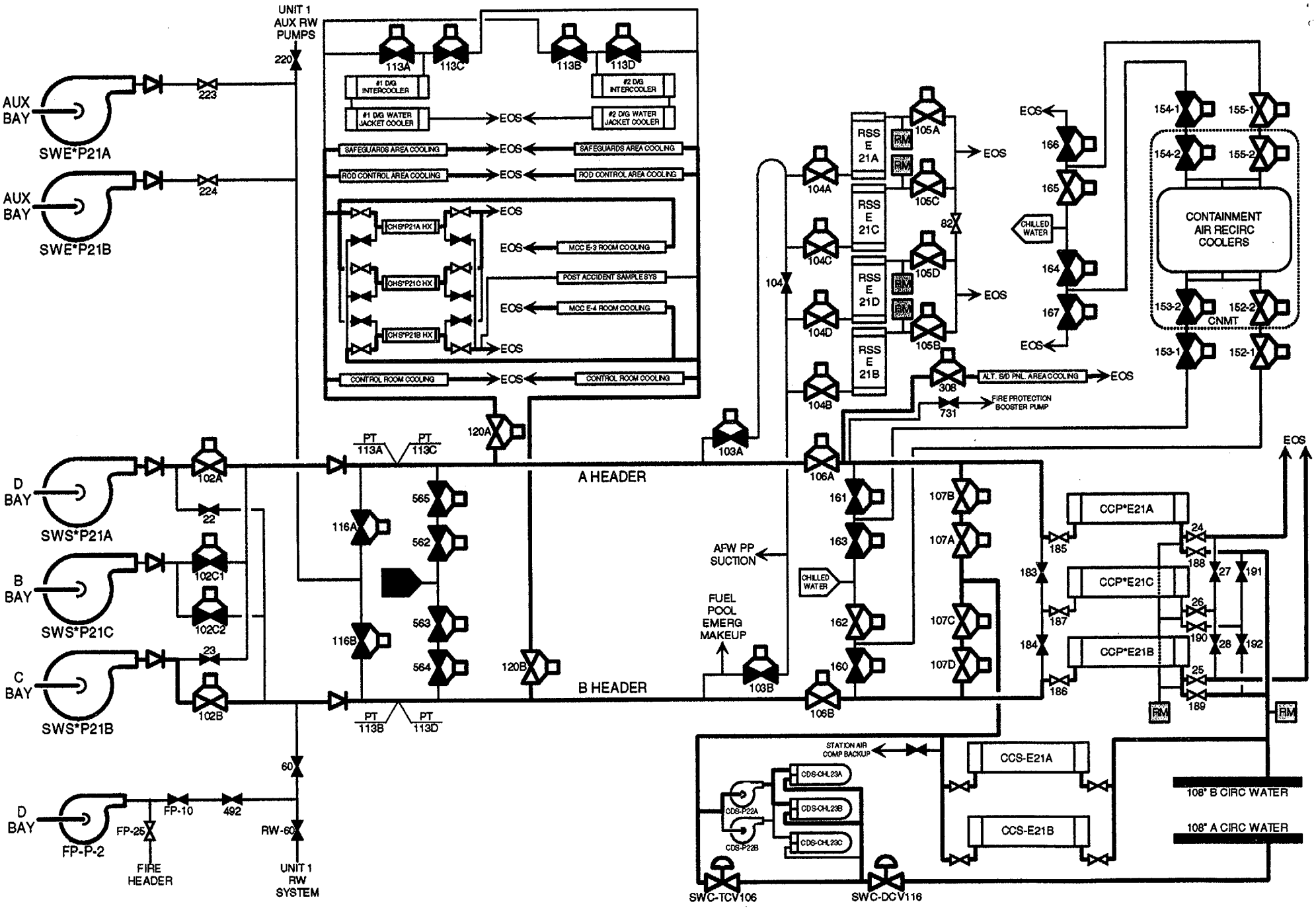
During Refueling Outages:

Previously, [2SWS*MOV103A and B] and [2SWS*MOV106A and B] have been full-stroke exercised and timed open and closed during refueling outages during performance of the SWS Full Flow Tests (2OST-30.13A and B) by placing SWS flow through the RSS Heat Exchangers. In order to remove the impact on refueling outages of performing the SWS Full Flow Tests, relief is requested to perform this testing on-line, just prior to the refueling outage. Following the testing on-line, the RSS Heat Exchangers will be drained to remove most of the mud, silt, Asiatic clams and other marine life flushed into the heat exchangers. Actual cleaning of the heat exchangers will occur during the refueling outage as part of the GL 89-13 Program. Therefore, performing this test in the weeks just prior to the refueling outage will minimize the impact of the test on the station, while ensuring that the heat exchangers are maintained operationally ready.

Testing prior to a refueling outage may not always be possible during certain times of the year when SWS cooling demand is high. Closing [2SWS*MOV106A and B] would interrupt flow of cooling water to the inservice Primary (CCP) and Secondary (CCS) Component Cooling Water and Chiller Unit Heat Exchangers in addition to other cooling loads and could result in undesirable thermal transients, operational concerns (stability problems) and a potential plant trip if at power. Therefore, testing may still have to be performed during the refueling outage versus on-line in the weeks just prior to the refueling outage. This testing has been reviewed from a risk perspective and is considered to be acceptable when appropriate environmental conditions exist.

Alternate Test: Full-stroke exercised and timed open and closed at a refueling outage frequency while on-line (in the weeks just prior to the refueling outage) or during the refueling outage, if not tested within the previous 92 days, per 2OST-30.13A and 2OST-30.13B (SWS Full Flow Tests). Full-stroke exercised and timed open and closed during cold shutdowns of sufficient duration per 2OST-1.10 (Cold Shutdown Valve Exercise Test).

References: OM-10, Paragraphs 4.2.1.1 and 4.2.1.2(c).
NUREG-1482, Section 3.1.1.1.
Technical Specifications 3.7.4.1 and 3.4.1.3



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