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January 25, 1991

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Request for Temporary Waiver of Compliance

Gentlemen:

The purpose of this letter is to request NRC approval of a request for a temporary waiver of compliance in meeting the Beaver Valley Unit No. 1 Technical Specifications. Specifically, surveillance requirement 4.6.1.6.1.b requires removal of containment liner weld test channels if a test channel vent plug is found missing.

On January 22, 1991, we discovered missing vent plugs in the Unit No. 1 containment. These vent plugs are associated with test channels on the containment liner floor which is under approximately two feet of reinforced concrete. Removal of the test channels is considered impractical for determining the adequacy of the liner welds. We are proposing an alternative solution to test channel removal.

The inspections and tests performed on the liner welds (ie: Type A Testing, sampling of contents of vent lines/test channels) have provided assurance that the missing vent plugs have not resulted in accelerated corrosion of the liner weld surface areas. We are developing a plan of assessing corrosion rates applicable to the liner welds. The need for reassessing corrosion rates was recognized during the Unit No. 2 second refueling outage when an identical problem existed. Resolution of the Unit No. 2 concern has been temporarily accomplished with an emergency Technical Specification Change. We propose a similar interim solution for Unit No. 1 and permanent solution through NRC approval of our proposed Technical Specification Changes submitted on September 28, 1990.

This request for a temporary waiver of compliance provides the basis for asserting that the liner welds are capable of performing their intended function without following the Technical Specification surveillance requirement of removing the test channels. Additionally compensatory actions are proposed and completed. We have installed stainless steel vent plugs in each missing plug location. This establishes a redundant pressure barrier to the containment liner welds.

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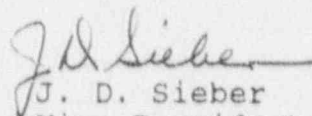
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An emergency Technical Specification Change will be submitted by February 8, 1991, to provide an alternative surveillance requirement. That proposed change will insert the Standard Technical Specification wording and be consistent with Amendment No. 34 the NRC has approved for Unit No. 2.

Unit No. 1 is scheduled to enter Mode 4 on January 25, 1991. NRC approval is required before this can be achieved. The contents of this request have been discussed with members of the NRC staff during a conference call on January 24, 1991. This has also been reviewed by the station Onsite Safety Committee.

If you have any questions regarding this submittal, please call me or members of my staff.

Sincerely,


J. D. Sieber
Vice President
Nuclear Group

cc: Mr. J. Beall, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. A. W. DeAgazio, Project Manager
Mr. R. Saunders (VEPCO)

ENCLOSURE

Beaver Valley Power Station - Unit No. 1

Evaluation Supporting a Temporary Waiver of Compliance
(RE: Containment Liner Weld test Channel Vent Plugs)

1. Discuss the requirements for which a waiver is requested:

This waiver addresses the Beaver Valley Unit No. 1 Technical Specification Limiting Condition of Operation (LCO) 3.6.1.6 "Containment Structural Integrity". The LCO defines containment structural integrity being satisfied through compliance with surveillance requirement 4.6.1.6.1. This surveillance in part states that if a containment liner test channel vent plug is found removed, the corrective action is to remove the test channel and apply a protective coating to the liner in that area.

On January 22, 1991, while performing a tour of containment, we observed missing vent plugs from vent lines which were connected to test channels installed on the floor of the liner. This liner is carbon steel and the floor of the liner is covered with reinforced concrete of a nominal two foot thickness. To comply with LCO 3.6.1.6 it would be necessary to remove a significant portion of the containment basement floor, remove the test channels, coat the liner welds and return the floor to its normal arrangement. This is considered an unacceptable solution for demonstrating the containment structural integrity. Resolution of the structural integrity is necessary before Unit No. 1 can enter Mode 4 which is scheduled to occur Friday afternoon, January 25, 1991.

We request permission to operate with an alternative solution to the corrective action specified in surveillance requirement 4.6.1.6.1.b. This action consists of installing stainless steel vent plugs in all missing locations. The request would remain in effect for the length of time required to process an emergency Technical Specification Change to revise the surveillance requirement in a manner similar to that approved by the NRC for Unit No. 2 in Technical Specification Amendment No. 34. That amendment approved an alternate surveillance requirement consistent with the Standard Technical Specification for demonstrating containment structural integrity.

2. Discuss the circumstances surrounding the situation including the need for prompt action, and why the situation could not have been avoided:

Surveillance requirement 4.6.1.6.1 is normally performed in support of conducting Type A containment leakage rate tests. When preparing to perform this test on Unit No. 2 during the second refueling outage, it was determined that the inspections conducted in support of the surveillance requirement did not include the vent plugs located on the containment basement floor. This resulted in requesting an emergency Technical Specification Change on October 9, 1990. As a result of that experience, we intended to perform a similar inspection for Unit No. 1 during the upcoming eighth refueling outage, scheduled to begin in April 1991.

Unit No. 1 was operating at the time the Unit No. 2 inspection was performed. It was unclear as to whether the floor test channel vent plugs had been verified to exist in Unit No. 1 during previous inspections in support of Type A tests. There was no recollection of this verification and procedures do not specifically call out verifying vent plugs associated with the test channels located in the floor. Technical Specification Surveillance 4.6.1.6.b infers inspections of the containment liner cylindrical walls in that if a vent plug is found missing, the test channel is to be removed. The test channels are visible on the liner walls and their existence is obvious. Surveillance requirement 4.6.1.6.1.c addresses inspections of the containment dome.

As a result of the Unit No. 2 inspection during the second refueling outage, we were concerned that we had not verified the existence of the vent plugs on the floor test channel vents and were preparing to inspect this area during the next Unit No. 1 refueling outage.

On January 21, 1991, Unit No. 1 prepared to shutdown due to an unrelated problem. During this shutdown, containment entries were made since the plant was being cooled to Mode 5 conditions and containment was being returned to atmospheric conditions. A test engineer was assigned to perform specific containment integrity checks. While in containment and being knowledgeable of the Unit No. 2 vent plug concern and the Unit No. 1 planned inspection during the next refueling outage the test engineer decided to perform a limited survey and determined a number of vent plugs were missing.

It is our belief the test channels are in good condition (Ref. Item 4). We intend to implement a compensatory action to further enhance containment integrity. Additionally, we intend to develop a plan to assess long term corrosion affects on the liner welds. This is intended to support the proposed Technical Specifications which were submitted on September 28, 1990.

The schedule for returning to power operation includes entering Mode 4 on Friday, January 25, 1991 and Mode 1 operation is anticipated to occur early Sunday morning. Any delay in returning to power operation beyond Monday, January 28, 1991, has the potential to push back the start date for the eighth refueling outage. This in turn may affect our projected restart date of June 14, 1991. This restart schedule has been selected to provide additional capacity to support the projected summer peak loads. The above forms the basis for the need for prompt action.

3. Discuss compensatory actions (if any):

We will replace the missing vent plugs with stainless steel plugs prior to entering Operational Mode 4. This action will provide a redundant barrier to the containment liner welds and further ensure that the containment will continue to provide a leak-tight barrier against the uncontrolled release of radioactive material to the environment.

4. Provide a preliminary evaluation of the safety significance and potential consequences of the proposed request:

The inspection of the containment floor test channel vent plugs resulted in identifying 38 missing carbon steel vent plugs. These are categorized as follows:

- 15 missing plugs located on the containment floor.
- 12 missing plugs located on vent lines attached to containment columns at a 2 foot distance above the containment floor.
- 11 vent plugs failed when disturbed for inspection purposes.

For each floor location, an effort was made to collect a sample of the contents (if any) of the test channel. In all but two cases samples of dirt, sand, and other materials were collected by forcing a capillary tube into the vent line. In some cases it is believed the capillary tube was extended fully into the test channel and no moisture was collected (it is believed these were dry). The samples will be sent out for analysis and the results will be available in approximately two weeks.

The sampling of the remaining two vent lines also resulted in several drops of moisture being collected. Those two vent lines were part of the sample of 11 which had vent plugs disturbed during the inspection. An effort was made to analyze these samples. The quantity was insufficient to provide conclusive results. The pH of the samples was neutral, however, dilution may have made the results inconclusive.

The 12 vent lines located on columns could not be sampled due to configuration. A 90° fitting is located at the vent opening which does not permit insertion of a sampling tool. However, since these lines are elevated above the floor it is unlikely corrosive materials could get into the test channels.

From the above sampling, there is no indication that a corrosive environment exists within the test channels beyond that originally assumed. Additionally, since each floor vent line is either totally or partially plugged with dirt there is no opportunity for reoxygenation of the test channel in a sufficient manner to promote accelerated corrosion. The Unit No. 2 vent line inspection also resulted in identifying dirt and debris left over from the construction of the containment. It is believed the same can be said for the Unit No. 1 test channel vent lines coming from the floor.

The test channels are believed to be in good condition on the basis of a lack of conclusive information to prove otherwise. Preliminary assessments have resulted in the conclusion that the liner welds are still capable of performing their intended function. The compensatory actions further enhance the ability of the liner to properly function through the addition of a redundant barrier (ie: carbon steel test channel, stainless steel vent tube and new stainless steel vent plugs).

The proposed request would allow the liner test channels to remain in place. The long term Technical Specification corrective action is to remove the surveillance requirement which directs removal of the test channel. This will be further discussed in support of the permanent change submitted on September 28, 1990. Additionally, we successfully completed a Type A test in the fall of 1989 during the Unit No. 1 seventh refueling outage. This test provides added assurance that the liner is capable of performing its function.

On this basis: 1) successful Type A test, 2) redundant barrier, 3) no evidence of accelerated corrosion - we characterize this request as not increasing the potential consequences of any postulated accident.

5. Discuss justification for the duration of the request:

This Temporary Waiver of Compliance needs to remain in effect until an Emergency Technical Specification Change can be approved by the NRC. The proposed Emergency Technical Specification Change will allow an alternative to the present surveillance requirement which does not contain specific details on the required actions pertaining to test channels. In addition, a footnote will be added which limits the duration for which the alternate surveillance is applicable.

The test channels which we found to have missing vent plugs are located under approximately two feet of reinforced concrete. This factor makes complying with the surveillance requirement of removing the test channel an extreme hardship. Therefore, the requested duration of this Temporary Waiver supports the planned restart without meeting the current surveillance requirement 4.6.1.6.1 until a Technical Specification Change can be approved by the NRC.

We will submit an Emergency Technical Specification Change Request by February 8, 1991.

6. Provide a basis for the conclusion that the request does not involve a significant hazards consideration:

There are no indications from our current evaluation that significant corrosion of the containment liner welds has occurred. To further ensure that the containment will continue to provide a leak-tight barrier against the uncontrolled release of radioactive material to the environment, we have installed stainless steel plugs in place of the missing vent plugs in the containment liner test channels. This will provide an additional redundant barrier to ensure the leak-tightness of the containment vessel. We have taken steps through sampling and re-installing missing vent plugs to ensure that the containment steel liner will continue to provide a leak-tight barrier.

Therefore, based on the above, this request does not involve a significant hazards consideration.

7. The basis for the conclusion that the request does not involve irreversible environmental consequences:

The requested change does not involve irreversible environmental consequences based on the conclusion that the liner welds are not degraded. There are no indications from the current sampling of the test channels that significant degradation of the containment liner welds has occurred. In addition, a redundant barrier in the form of a plugged test channel has been established to ensure that the leak-tightness of the containment vessel will continue to be maintained. The ability to provide a leak-tight barrier against the uncontrolled release of radioactive material to the environment remains unchanged. Therefore, based on the above, this change does not involve irreversible environmental consequences.