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Washington Public Power Supply System
Box 1223 Elma, Washington 98541 (206) 482-4428

Docket Numbers 50-508 and 50-509

April 15, 1982
G03-82-389

U. S. Nuclear Regulatory Commission, Region V
Office of Inspection and Enforcement
1450 Maria Lane, Suite 260
Walnut Creek, California 94596-5368

Attention: Mr. T. W. Bishop
Chief, Reactor Construction Projects Branch

Subject: NRC INSPECTION AT WNP-3/5
IE REPORT NO. 50-508, 509/81-14
NONCOMPLIANCE (50-508, 509/81-14/01)

References:
1. G03-81-2866, dated December 23, 1981, Mr. R. S. Leddick to Mr. B. H. Faulkenberry, NRC Inspection at WNP-3/5.
2. NRC Letter, dated February 22, 1982, Mr. B. H. Faulkenberry to Mr. R. S. Leddick, same subject.

To complete the NRC evaluation of the corrective actions reported in Reference 1, your staff determined that additional information was required. As a result, Reference 2 outlined NRC questions that had arisen and directed the Supply System to provide a response.

The Supply System approved response to NRC questions concerning the corrective actions taken for the subject violation (Failure to assure containment penetrations, Nos. 23, 24 & 44, are tested in accordance with Code requirements) is as follows:

NRC Concern #1

Please explain how a 50 PSIG pressure decay test of the containment guard pipes can be conducted in accordance with NC-6129 without damaging the attached secondary bellows. Specification No. 3240-54, Paragraph 8.0liii indicates that the bellows assembly has been designed for a 5 PSI differential pressure. Please explain also how the bellows will be restrained to maintain the test pressure for the requisite time period.

Response to #1

The NRC has incorrectly stated the test pressure as being 50 psig. A pressure decay test for the guard pipe welds of these penetrations will be performed at 62.5 psig based on a design pressure of 50 psig. The

82-38

Response to #1 (Continued)

design pressure of the bellows is 5 psig. To test the guard pipe welds at 62.5 psig, the bellows must be protected from overpressurization. This will be accomplished by attaching a shroud over the bellows assembly. This shroud will have a connection to it allowing it to be pressurized to 62.5 psig. A test apparatus will be constructed which will permit both the inside and the outside of the bellows to be simultaneously pressurized thus minimizing the Δp across the bellow's plies to an acceptably low value. Control and measuring equipment will be provided to independently control the internal and external pressure of the bellow's plies. Ebasco will provide technical review to assure that Contractor 224's procedure satisfactorily meets these requirements.

NRC Concern #2

Please explain why DCN-MN-128, dated June 10, 1981, specifies a design pressure of 200 PSIG for the penetration No. 44 process pipe whereas your response indicates that the line list has always specified 150 PSIG and the appropriate drawing was changed by a field change request on December 12, 1980. Our concern is directed toward the fact that certain design documents apparently still specify 200 PSIG, which would indicate inadequate implementation of your design control system.

Response to #2

To verify the correct design, including pressure, it is necessary to utilize the latest controlled reference drawing duly considering all outstanding (posted) design change documents. This is in accordance with the established Ebasco design control program. As previously explained in Reference 1, the design pressure for line 2CH3-514SA/BR has always appeared as 150 psig in the line list. Drawing G-1300 sheet 1 revision 5 dated May 5, 1980 was revised by FCR-MN-153 dated December 12, 1980 from 200 psig to 150 psig so as to specify the correct design pressure as specified in the line list. DCN-MN-128, dated July 17, 1981, was also written against G-1300 sheet 1 revision 5. This DCN was issued to revise the design pressures of the guard pipes for penetrations 23, 24, and 44. Although DCN-MN-128 was issued subsequent to FCR-MN-153, it does not show the change in design pressure of FCR-MN-153 because FCR-MN-153 had not been incorporated into the design drawing at the time DCN-MN-128 was issued. Both the FCR and the DCN are in the process of being incorporated into the design drawing at the same time in revision 6. The only valid design change information on DCN-MN-128, or any change document, is that which is circled as either being revised, added, or deleted.

NRC Concern #3

In your response, under actions taken to prevent recurrence, you state that blockouts have been established and will be maintained for the guard pipe penetrations until successful completion of the 62.5 PSIG pneumatic tests. However, based on the following information, we question whether problems currently exist in the areas of design and procedure review and contractor interface coordination which, if not addressed and corrected, could result in the occurrence of similar items of noncompliance.

a. The civil contractor, without concurrence of mechanical engineering, was released to place concrete inside the containment, including encasement of field weld No. 4. It was not realized by the civil contractor that this blockout was intended to remain open.

b. A DCN was issued on June 15, 1981, which stated that the inside containment guard pipe welds would be tested during the combined ILRT and overpressure test of the containment. This DCN did not recognize that the ILRT would not satisfy construction code requirements.

c. Testing requirements were apparently not considered in the design of the penetrations in question, in that 5 PSIG bellows were installed that cannot be isolated for conduct of the 62.5 PSIG pressure tests.

d. The DCN of June 10, 1981, specifies a design pressure of 200 PSIG for the penetration No. 44 process pipe, yet you state the design pressure should be 150 PSIG.

e. Contractor procedures were reviewed and approved which specified pneumatic versus the required hydrostatic tests.

f. There was no direction provided to the 251 contractor, by specification change or DCN allowing the use of the Winter, 1978 addenda provisions of NC-6129 for pressure decay testing nor does the 251 contractor's Certificate of Authorization extend to his code addenda.

In consideration of the above, please inform us whether our concerns are valid and if so, what corrective measures you have taken to prevent recurrence of similar items of noncompliance.

Response to #3

Based on the information listed in item 3 of Reference 2, Ebasco Engineering does not agree that the NRC's concerns are valid with regard to design, procedure review and contractor interface coordination. Ebasco's position is based on the following:

3.1 Items 3a and 3e are isolated occurrences.

When disciplines other than civil are affected by a concrete pour, those disciplines are required to sign off on the concrete pour card prior to the operation being performed. Since July 1981, there have been no other cases identified where the testing of mechanical components was impacted by civil activities.

As stated in Reference 1, the procedure requiring the use of a pneumatic pressure test where a hydrostatic test was required by ASME Code was incorrectly approved by Engineering. However, this cannot be expected to occur again as it was an isolated Engineering error on a procedure for testing three of approximately one hundred penetrations, the remainder of which are of different design which will be pressure tested in a different manner than penetrations 23, 24, and 44.

3.2 With regard to item 3b, DCN-MN-128 did not establish that the combined ILRT and Overpressure Tests will satisfy construction code requirements for these penetrations. It merely recognized that the guard pipe welds were part of the containment vessel pressure boundary and as such would be qualified using the ILRT as well as the ASME Code required internal pressure test. DCN-MN-128 did not, and could not, modify the use of the mandatory ASME Code test. To clarify Ebasco's design intent, DCN-MN-167 was issued deleting all mention of the combined ILRT and Overpressure Test as this information is not required by the contractor to perform his ASME pressure testing. It must be emphasized with regard to the type of pressure testing specified, that both DCNs were issued to clarify these requirements. They did not change the scope of penetration testing required, whether done by Ebasco in the case of the ILRT, or the contractor in the case of the ASME test.

3.3 With regard to item 3c, testing requirements were considered in the design of these penetrations. As explained above, an Engineer's approved test procedure will be used during penetra-

3.3 (Continued)

tion testing to properly protect the bellows. These penetrations have been designed, and will be tested, in full compliance with the ASME Code.

3.4 The clarification provided herein for item 3d, and the description of the corrective action for item 3f in Reference 1, should alleviate any concern for these items.

Summary

It must be emphasized that while difficulties have been encountered during the installation of these three penetrations, no pressure testing has been performed which is in violation of Ebasco procedures or applicable industry codes and standards. These difficulties are neither extraordinary in degree nor indicative of a failure in Ebasco's program to effectively control design and contractor interface. It must be recognized that these installation problems are attributable to the unique design requirement of the Type IV and IVA penetrations. Their design and construction differs considerably from all other containment mechanical penetrations in that the service of these penetrations requires them to be located at an elevation below the bottom of the Reactor Building Annulus. They are therefore completely embedded in concrete necessitating the use of a pipe within a pipe design. Therefore, the difficulties which have arisen in testing penetrations 23, 24, and 44 will be limited to these penetrations.

In consideration of the above, the corrective action Engineering has taken in Reference 1 will prevent recurrence of similar items of concern.

Should you have any questions or desire further information, please contact me directly.

R. S. Leddick, 760
Program Director, WNP-3

DRC/st

cc: J. Adams - NESCO
D. Smithpeter - BPA
Ebasco - New York
WNP-3/5 Files - Richland