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G03-82-679
July 2, 1982

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, 509/81-14/01
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.
 - 3) G03-82-389, dated April 15, 1982, Mr. R. S. Leddick to Mr. T. W. Bishop, same subject.

Reference 1) provided your office with a report of corrective actions taken for the subject violation (Failure to assure containment penetration Ncs. 23, 24 & 44 were tested in accordance with Code requirements). Your staff's review of these corrective actions revealed additional questions which required a Supply System response and were outlined in Reference 2). Accordingly, a Supply System response to the NRC concerns was provided by Reference 3).

It has been determined that additional clarification of the Supply System response (Reference 3) to NRC concern #3 (identified in Reference 2) is required. Paragraphs 3.1 and 3.3 of the response are amended as follows:

NRC Concern #3 (Identified in Reference 2)

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.

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- 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 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 this 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.

Original Response to NRC Concern #3 (Reported in Reference 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 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 penetration testing to properly protect the bellows. These penetrations have been designed, and will be tested, in full compliance with 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 concerns 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.

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Additional Clarification to Paragraph 3.1 above

In response to NRC item 3a, the encasement of field weld No. 4 was a unique situation wherein the penetration sleeve was installed by a mechanical contractor and the shield wall blockout was poured by a civil contractor. Ebasco Engineering has reviewed this matter and determined that there are no similar site construction activities where the installation and testing of a mechanical component would be compromised by the installation work of a civil contractor. This conclusion is based on the nature of civil construction contracts at WNP-3/5. To this date Ebasco has organized the civil contracts so that those contractors who are primarily responsible for the erection of walls and floors also have the responsibility for installation of mechanical and electrical embedments (e.g., penetration sleeves, plates and conduits) that will be installed in the structures. Therefore, additional contractor interface coordination (by Ebasco) for the installation of such mechanical or electrical embedments in civil concrete structures has not been needed to preclude similar recurrences. In the future, as appropriate, when another contractor is responsible for installing mechanical or electrical embedments, that contractor will be required to sign a preplacement checklist form indicating that this work, to be embedded, is complete and acceptable. The civil contractor will be required by procedural hold points to obtain the other contractor signature on the checklist for other disciplines affected prior to concrete placement.

With regard to NRC item 3e, the improper Ebasco procedure review that allowed approval of a pneumatic test in lieu of the required hydrostatic test is considered an isolated occurrence. However, to assure that similar oversights do not occur in the future, the responsible site engineers involved in procedure review were cautioned and have received training on the requirements of ASME Section III, Article NX-6000. This training was completed in June 1982.

Additional Clarification to Paragraph 3.3 above

With regard to NRC item 3c, Ebasco's New York office is presently performing additional investigations to assure adequacy of penetration design review. This also includes an analysis of the testability of the penetrations to reconcile different design pressures between component parts of the penetrations. Results of these investigations will be provided to your office by July 30, 1982.

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


R. S. Leddick
Program Director, WNP-3

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