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May 14, 1985

NUCLEAR LICENSING & SAFETY DEPARTMENT

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
File: 0260/15180
Containment and Drywell
Penetrations
AECM-85/0137

This letter documents information provided to your staff by telephone on May 2, 1985 addressing recent containment and drywell mechanical penetration configuration engineering reviews and inspections at Grand Gulf Nuclear Station (GGNS) Unit 1.

Attachment 1 provides a description and the results of the engineering reviews conducted and the results of the inspections on the penetration configurations identified to be in question as a result of engineering reviews. Attachment 1 also addresses the results of MP&L's analysis of the applicability of these configurations to the Facility Technical Specifications and a discussion of administrative actions being taken.

In summary, MP&L has determined that neither containment nor drywell integrity had been breached and that no changes need be made to the Facility Technical Specifications. However, as a matter of prudence and good operating practice, MP&L is developing additional administrative controls for appropriate containment and drywell mechanical penetrations to provide additional assurance that these devices are maintained in the proper position or condition.

Please contact my office if additional information is desired.

Yours truly,

L. F. Dale
Director

JOE/WJH/SHH:rw
Attachment

cc: (See Next Page)

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GRAND GULF UNIT 1
CONTAINMENT AND DRYWELL PENETRATION
CONFIGURATION REVIEWS

On April 18, 1985, during the performance of a routine inspection tour in the Grand Gulf plant, an instrument port blind flange located on the drywell purge compressor line between the drywell wall and the drywell isolation valve was observed. This flange is not included on Technical Specification Table 3.6.4-1. Because of this observation, extensive engineering reviews and inspections were conducted to determine if all penetration closure devices required to be closed during accident conditions had been identified and that containment or drywell integrity had not been breached.

The MP&L Nuclear Plant Engineering (NPE) group initiated the detailed engineering review of penetrations. Two complete and separate reviews were conducted on containment and drywell penetrations. One review was conducted by NPE and one by the Architect Engineer, Bechtel Power Corporation. The scope of these reviews included all containment and drywell penetrations except electrical penetrations. They included detailed review of all affected piping and instrumentation diagrams. Where concerns were identified associated drawings, such as instrumentation details, were reviewed.

Using information developed from the engineering reviews, personnel from the Plant Staff performed inspections of all accessible penetration assemblies in question to verify closure of these assemblies. In addition, a selected random sample of penetration assemblies which had not been identified in the engineering reviews to be of concern were inspected. No problems or discrepancies were found during any of these inspections. The engineering reviews were complete on April 22, 1985; inspection efforts were conducted in parallel on all accessible assemblies. Final inspections were completed during a scheduled shutdown commencing April 25, 1985.

The detailed engineering reviews identified five (5) categories of penetration associated items not included in Technical Specification Table 3.6.4-1 which required further evaluation to determine the applicability of the technical specifications to these items:

1. Instrument ports for flow points (F/P) on each of two (2) drywell purge compressor lines (total of two (2) instrument ports).
2. Process system pressure points (P/P) on containment and drywell penetrations (two (2) P/P's on the Chilled Water System and two (2) on the Instrument Air System).
3. Containment boundary guard pipe inspection ports (eleven (11) guard pipes with two (2) inspection ports each for a total of twenty-two (22) inspection ports).
4. Containment boundary guard pipe inspection port plate P/P (one (1) per inspection port for a total of twenty-two (22) P/P's).

5. Drywell boundary guard pipe bellows assembly with either four (4) P/P or two (2) P/P and two 1/4" pipe nipples with capped ends per assembly (eleven (11) bellows for a total of forty-four (44) test points).

The function, technical specification surveillance requirements, and proposed disposition for each of the five (5) categories is discussed below:

1. Category 1 items consist of a 1.5" inside diameter instrument port on each of two (2) drywell purge compressor lines. These instrument ports are closed (by a flange and gasket bolted to the port) during normal plant operation and are opened for use as flow measuring points during refueling interval surveillance tests on the drywell purge compressors. The review of penetration configurations at GGNS Unit 1 found that these two (2) instrument ports are the only such devices located within a penetration isolation boundary. The refueling interval surveillance procedure (which tests drywell purge compressor flow) requires double verification that the instrument ports are closed and secured upon test completion.

These two (2) instrument ports do not belong in Technical Specification Table 3.6.4-1 because they are not typical blind flanges which seal off an entire process line and are not similar to other items that are traditionally listed in the table. It should be noted that the drywell isolation valves for the drywell purge compressor process lines are in Technical Specification Table 3.6.4-1. The instrument ports themselves are opened only for surveillance testing at refueling intervals. The double verification to insure that the instrument ports are closed upon completion of the surveillance on purge compressor flow provides a high level of assurance that the ports are closed. However, to further assure closure of these ports, MP&L has added them to surveillance procedures in order to check them in the same manner and at the same frequency as prescribed by Technical Specification Surveillance Requirement 4.6.2.1. This is appropriate as these instrument ports are similar to items which are required to be surveilled in this manner by the ** footnote to specification 4.6.2.1.a.

In summary, MP&L believes that present administrative controls are sufficient to verify closure of these two (2) instrument ports and that no technical specification changes are required.

2. Category 2 items are process system pressure points (P/P's) with three (3) located on containment penetrations associated with the Chilled Water and Instrument Air Systems and one (1) on a drywell penetration for Instrument Air. These P/P's are used for initial system flow balancing and are not used afterward during normal plant operation. These P/P lines each consist of a single 0.25" inside diameter tube with a manually operated root valve which is normally closed. The root valves on these P/P lines are (and have been) listed in the System Operating Instruction valve lineups which are performed periodically.

MP&L believes that the P/P root valves are not required to be listed in Technical Specification Table 3.6.4-1 since they do not fit the criteria

used for items in the table. These P/P lines are smaller in diameter than lines (such as test connections) which have valves listed in Table 3.6.4-1. These smaller diameter lines represent a much smaller leakage path than other lines listed in Table 3.6.4-1. MP&L has evaluated and determined that these P/P lines are not required to be surveilled by Technical Specification 4.6.1.1.b or 4.6.2.1.a since these lines are of small diameter and do not meet the criteria specified in 4.6.1.1.b or 4.6.2.1.a for inclusion. However, the manually operated root valve on each P/P line has been added to plant surveillance procedures to provide further assurance that this potential release path is closed.

3. Category 3 items are containment boundary guard pipe inspection ports with an inner and outer plate used for closure of the port. These inspection plates are approximately 5" by 7" and are elliptical in shape. These ports were installed for inservice inspection of welds on the process piping once each inspection interval. The ISI program implementing procedures will require the associated penetration be tested in accordance with Technical Specification Surveillance Requirement 4.6.1.1. These penetrations are presently periodically tested pursuant to 10CFR50, Appendix J using procedures which comply with Technical Specification Surveillance Requirement 4.6.1.1. These inspection ports are covered adequately by present technical specifications and no changes are required.

4. Category 4 items are containment boundary guard pipe inspection port plate pressure points. These P/P lines are used to test the gasket assembly on the inspection port plates. Each P/P consists of a single 0.25" inside diameter tubing with a manually operated root valve which is normally closed in series with a downstream fitting which caps the end of the line.

These P/P connections do not provide a potential direct flow path from the containment atmosphere. The inspection ports have a dual plate arrangement and the P/P lines are used to pressurize the area between the plates in order to ensure proper gasket sealing. The inner plate provides the containment penetration barrier and since these P/P lines do not penetrate the inner plate and therefore are not a part of the penetration isolation boundary, they are not required to be in the technical specifications.

5. Category 5 items are drywell boundary guard pipe bellows pressure points and pipe nipples. These P/P lines are used to test the integrity of the bellows assembly. Each P/P consists of a single 0.25" inside diameter tubing with a manually operated root valve which is normally closed in series with a downstream fitting (3/8" tube plug) which caps the end of the line. The 1/4" pipe nipples (which may also be used to test the guard pipe bellows assembly) are .307" inside diameter and are capped at the end. The penetration bellows assembly is a double wall arrangement with P/P connections and pipe nipples provided for use in pressurizing the space between the bellows walls to check for leakage. The P/P lines and pipe nipples do not provide a potential direct flow path from the drywell atmosphere and are not a part of the penetration isolation boundary; therefore, these lines are not required to be in the technical specifications.

As discussed above and based on reviews of the GGNS surveillance program, MP&L has added a number of penetration barrier related items to appropriate surveillance procedures. MP&L is also preparing an administratively controlled list of drywell and containment penetration barriers which includes isolation valves, appurtenances and other potential release paths associated with each drywell and containment penetration. This list will be used to provide assurance that surveillance procedures, system valve line-ups, and associated procedural changes involving drywell and containment isolation are complete and accurate. Plant procedures presently in place cover 10 CFR 50 Appendix J testing for all primary containment penetration boundaries.