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 BUTLER, W.R. Project Directorate I-2

SUBJECT: Forwards application for Amend 88 to License NPF-22, adding containment isolation valves to Table 3.6.3-1.

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Director of Nuclear Reactor Regulation
Attention: Dr. W.R. Butler, Project Director
Project Directorate I-2
Division of Reactor Projects
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENT NO. 88 TO
LICENSE NO. NPF-22: ADDITION OF
NEW CRM SAMPLE LINES
PLA-3447 FILES A17-2/R41-2

Docket No. 50-388

Dear Dr. Butler:

The purpose of this letter is to propose changes to the Susquehanna SES Unit 2 Technical Specifications in order to add several new containment isolation valves to Table 3.6.3-1 "Primary Containment Isolation Valves". These valves are being added in support of upcoming modifications which will separate the Containment Radiation Monitors (CRM's) from the Hydrogen/Oxygen Analyzers and Post Accident Sampling System (all three systems currently share common containment penetrations).

BACKGROUND

The existing CRM panels share sample lines with the H2/O2 analyzers and the PASS system (see Figure 1). These latter two systems are required to be available post accident, and therefore the CRM panels have been subjected to meeting containment leakage criteria in a post accident environment. Ensuring leak tightness of the sample pumps has resulted in persistent operational and maintenance problems. A modification is therefore proposed that separates the CRM panels from the post accident systems by giving them dedicated sample lines with redundant containment isolation valves (see Figure 1).

This modification is the first in a series of modifications that will replace the existing CRM system, and will be performed in the upcoming Unit 2 fourth refueling and inspection outage. New CRM panels are scheduled to be added to the system later, and in the interim, the old panels in the existing configuration (Figure 1) will be relied upon to supply CRM data. The new sample lines,

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which will be installed in existing unused penetrations, will be capped until the new panels are installed.

DESCRIPTION OF CHANGES

As shown on the attached mark-up, the new containment isolation valves are proposed to be added to the Automatic Isolation Valves section of Technical Specification Table 3.6.3-1, "Primary Containment Isolation Valves" with a footnote in the "Isolation Signal(s)" column for each valve that states:

"Solenoid valves not capable of being opened due to the absence of permanently installed electrical power."

The isolation signals and deletion of the footnote will be proposed later in support of the installation of the new CRM panels, whereupon the new sample lines will be activated.

SAFETY ANALYSES

o Detailed Design Description

The existing CRM panels share sample lines with the H₂/O₂ analyzers. Two new CRM panels and a wetwell sample rack will be installed by future modifications. These new panels and rack will have their own dedicated sample lines with redundant containment isolation valves which will be designed to close on process signals which will be provided in a future modification.

All new sample lines installed in this modification will have manual 1" full port valves provided on them to facilitate LLRT testing and isolation for system maintenance.

The piping is designed to Seismic Category I requirements, up to the first anchor point past the "Q" boundary at the outboard end of the second containment isolation valve. The design meets the requirements of ASME Section III 1971 ed. through winter 1972 addenda and all pipe supports are designed in accordance with ANSI B31.1 (1973 edition). The design meets all the requirements of Section 3.2 of the SSES FSAR, including the requirements of Table 3.2-3.

Two sample lines will be routed inside containment to obtain atmosphere samples. Each of the new CRM panels (to be installed later) will draw a sample from its own line, which will be 1" HCB class piping. Each CRM panel will have a sample return line to the containment of the same pipe size and class as the sample piping. Each sample and return line will have two containment isolation valves installed outboard of the containment penetration. The valves will be 1" Class 1E process solenoid valves arranged in conformance with detail "q" of Figure 6.2-44g of the FSAR.

The sample and return lines for the rack used to take grab samples of the wetwell atmosphere (to be installed later) will be designed to the same standards and configurations as the CRM sample lines.

- o Leak Rate Testing

10CFR50 Appendix J Type B tests will be performed on each containment penetration affected by the proposed modification. The results will be added to the results of the last Type A test and compared to the allowable limits as required by regulations. Initial and periodic Type C tests of the new containment isolation valves will be performed in accordance with the Technical Specifications.

- o Penetration NDE

Section 3.8.2 of the SSES FSAR governs ASME class MC steel components of the containment. The entire length of any penetration sleeve is considered an MC component and, as such, is designed in accordance with Subsection NE of the ASME Boiler & Pressure Vessel Code, Section III. Applicable reference codes for the penetrations are: Regulatory Guide 1.57, ASME Boiler and Pressure Vessel Code (1971 with addenda through Winter 1972).

Pressure retaining welds will be examined in accordance with Article NE-5000 of Section III of the ASME code, and will comply with Regulatory Guide 1.19. The penetrations will be pneumatically tested to 1.15 times the design accident pressure in accordance with NE-6000. Piping will be tested as required by the ASME code to which it is designed.

o **Conclusion**

The modification associated with the proposed Technical Specification change meets all applicable design requirements as specified above.

The proposed Technical Specification change identifies the addition of non-powered automatic containment isolation valves. The design of the solenoid valves is such that inadvertent opening is impossible without the application of electrical power. The penetrations are further isolable by manual block valves located inboard of the inboard isolation valve. This will permit the future installation of electrical power and associated valve testing without jeopardizing primary containment integrity in any operating condition.

Based on the above information, the proposed change will not adversely impact the safe operation of Susquehanna SES.

NO SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed changes do not:

- I. Involve a significant increase in the probability or consequence of an accident previously evaluated.

This modification installs piping into penetrations similar or identical to designs already in place in the plant. It is designed to requirements enveloping all design basis accidents and malfunctions for the SSES containment. While in an absolute sense, the addition of any amount of additional equipment can be said to increase the probability of occurrence of an accident, the addition of this equipment does not increase the probability of an accident by an amount greater than the uncertainty in the original accident probability analyses and thus no significant licensing-basis change in probability can be said to have occurred due to this modification.

There is no specific condition of this modification or its location on containment that would affect any accident analysis evaluated in the FSAR and the small size (1") line is represented by numerous other cases in the containment design that have been thoroughly evaluated previously.



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The Technical Specification change itself simply lists the new isolation valves. No change in operational requirements are proposed for the new valves.

Based on the above, no significant increase in the probability or consequences of an accident previously evaluated will occur due to the proposed change.

- II. Create the possibility of a new or different kind of accident from any accident previously evaluated.

As discussed in I above, nothing in the design of this modification is different from existing Susquehanna containment design or design practice. No features of the design or the locations for installation have been identified by any design criterion that would indicate the existence of any mechanism for creation of an accident or malfunction of a different type than previously analyzed in the FSAR.

- III. Involve a significant reduction in a margin of safety.

As specified in I above, the new design will meet all applicable design standards and is therefore consistent with the established margin of safety that is defined by containment integrity requirements.

The Technical Specifications directly affected by this modification, 3.6.1.1 "Primary Containment Integrity," 3.6.1.2 "Primary Containment Leakage," and 3.6.3 "Primary Containment Isolation Valves," will be satisfied by having the isolation valves meet all applicable surveillance requirements. Meeting these requirements will show that the modification has no significant adverse impact on any margin of safety.

IMPLEMENTATION

The modification associated with this proposed change is currently scheduled to be performed during the Unit 2 fourth refueling and inspection outage. This outage is currently scheduled to begin on March 9, 1991 and end as early as May 10, 1991. In order to avoid performing this modification "at risk" PP&L requests that your approval be provided prior to the outage start date, with the condition that the amendment becomes effective upon startup after the outage.



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Any questions on this submittal should be directed to Mr. R. Sgarro
at (215) 770-7916.

Very truly yours,



H. W. Keiser

Attachments

cc: NRC Document Control Desk (original)
NRC Region I
Mr. M.C. Thadani, NRC Project Manager
Mr. G.S. Barber, NRC Senior Resident Inspector
Mr. T.M. Gerusky, PA DER

EFFECT OF CRM PROJECT
ON ONE DIVISION OF
CONTAINMENT ATMOSPHERE CONTROL

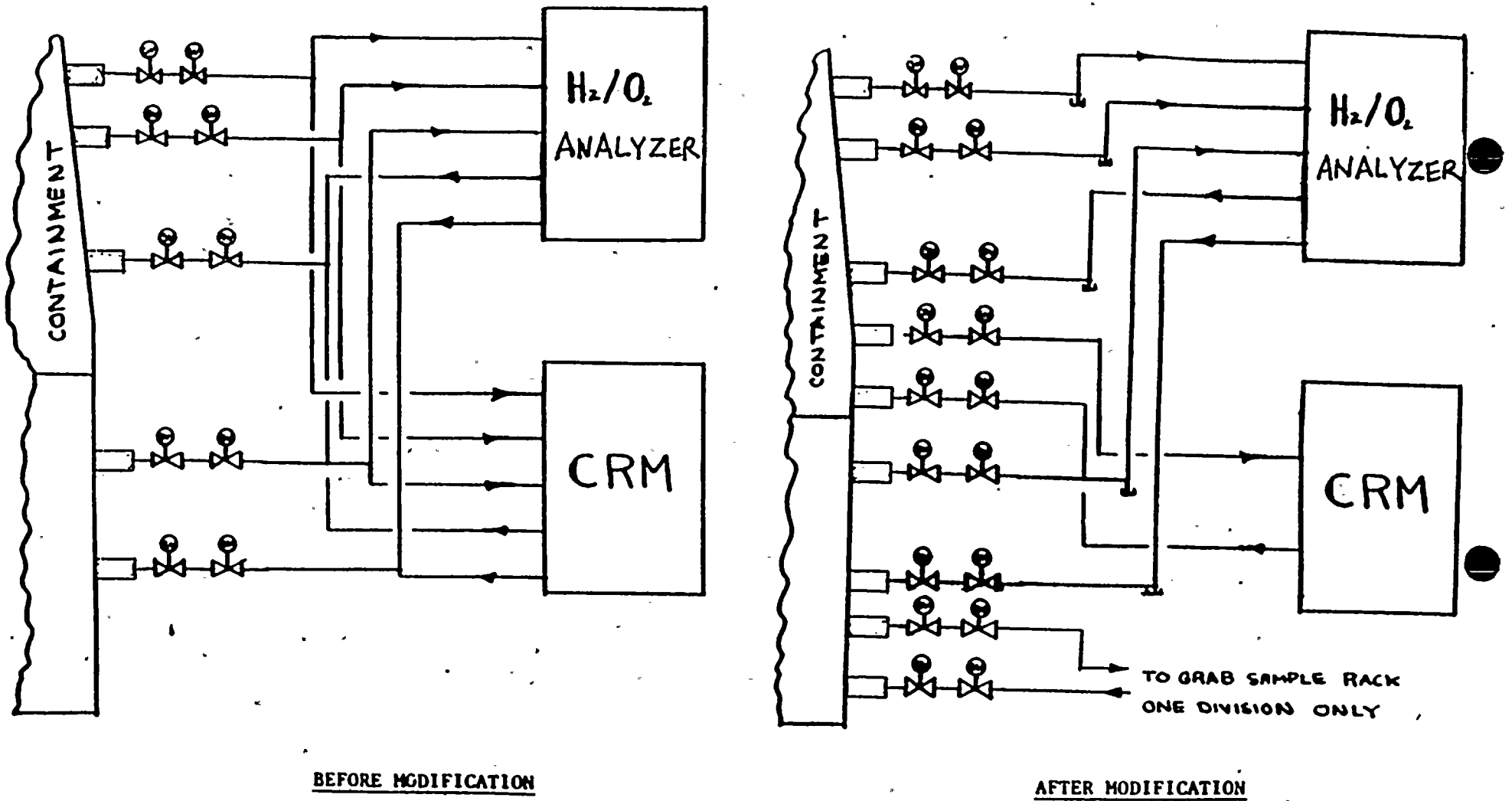


FIGURE 1

