UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

August 11, 2004

MEMORANDUM TO: Michael Hay, Senior Resident Inspector
Waterford 3 Steam Electric Station

Geoffery Miller, Resident Inspector
Grand Gulf Nuclear Power Plant

FROM: Arthur T. Howell III, Director **/RA/ CSMarschall for**
Division of Reactor Projects

SUBJECT: SPECIAL INSPECTION CHARTER TO EVALUATE PALO VERDE UNITS 1, 2, AND 3 VOIDED CONDITION DISCOVERED IN THE POST-LOCA RECIRCULATION PIPING FROM THE CONTAINMENT SUMP

In response to the discovery that during a Recirculation Actuation Signal (RAS) the trapped volume of air between the containment sump suction line isolation valves and the downstream check valve could enter the operating high pressure safety injection (HPSI) and containment spray (CS) pumps, a Special Inspection Team is being chartered. You are hereby designated as the Special Inspection Team members. Mike Hay is designated as the team leader.

A. Basis

On July 29, 2004, Palo Verde Nuclear Generating Station identified (CRDR 2726509) a pocket of air trapped between the containment sump inboard isolation motor operated valve and the containment sump check valve. This trapped air, if forced into the HPSI or CS pump suction, could result in degradation of the pumps and/or lead to a water hammer event. Technical Specifications 3.5.3 and 3.6.6 require both trains of HPSI and CS to be operable during power operations in Modes 1 through 3.

This Special Inspection Team is chartered to compare the as-found conditions to the licensing basis for the containment sump suction, determine if there are generic safety implications associated with voiding the suction piping, and review the licensee's compensatory measures following discovery of the condition.

B. Scope

The team is expected to address the following:

1. Develop a complete sequence of events related to the discovery of the voided condition and follow-up actions taken by the licensee.

2. Compare operating experience involving air voiding of emergency core cooling system suction piping to actions implemented at Palo Verde. Determine if there

are any generic issues related to the design and operating practices that resulted in the voiding of the containment sump suction piping. Promptly communicate any potential generic issues to regional management.

3. Review the licensee's determination of the cause of design deficiencies and operating practices that allowed the voiding condition to exist. Independently verify key assumptions and facts. Determine if the licensee's root cause analysis and corrective actions have addressed the extent of condition for air voiding of safety systems.

4. Determine if the Technical Specifications were met for the air voided condition and following the implementation of compensatory measures.

5. Determine if the supporting analyses for the licensee's compensatory measures were made in accordance with 10 CFR 50.59.

6. Review the calculations the licensee used to evaluate the voided condition. Assess the key factors associated with the total volume of trapped air, the expected flow rates of the HPSI and CS pumps, the size and orientation of the sump suction piping, and the impact on pump operability.

7. Collect data necessary to support a risk analysis. Specifically obtain information associated with the degree to which the HPSI and CS pumps were affected, the ability to recover failed pumps, and the dominant accident sequences.

C. Guidance

Inspection Procedure 93812, "Special Inspection," provides additional guidance to be used by the Special Inspection Team. Your duties will be as described in Inspection Procedure 93812. The inspection should emphasize fact-finding in its review of the circumstances surrounding the event. It is not the responsibility of the team to examine the regulatory process. Safety concerns identified that are not directly related to the event should be reported to the Region IV office for appropriate action.

The Team will report to the site, conduct an entrance, and begin inspection no later than August 23, 2004. The inspection will include a review of the licensees calculations associated with the transportability of the air pocket. This is not expected to be completed until following the team's initial visit. While on site, you will provide daily status briefings to Region IV management, who will coordinate with the Office of Nuclear Reactor Regulation, to ensure that all other parties are kept informed. A report documenting the results of the inspection should be issued within 30 days of the completion of the inspection.

This Charter may be modified should the team develop significant new information that warrants review. Should you have any questions concerning this Charter, contact me at (817) 860-8248.

cc via E-mail:
B. Mallett
T. Gwynn
M. Fields
C. Marschall
D. Chamberlain
J. Clark
V. Dricks
W. Maier
N. Salgado
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C. Paulk
J. Shea
R. Laura

ADAMS: √ Yes ☐ No Initials: __TWP__
√ Publicly Available ☐ Non-Publicly Available ☐ Sensitive √ Non-Sensitive

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TWPruett	ATHowell			
/RA/	**CSMarschall for**			
8/10/04	8/11/04			

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