

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

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SUBJECT: Special Rept 2-SR-89-009:on 891219,reactor vessel water level sys inoperable for more than 7 days.

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Arizona Public Service Company

PALO VERDE NUCLEAR GENERATING STATION  
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192-00683-JML/TRB/RKR

August 9, 1990

JAMES M. LEVINE  
VICE PRESIDENT  
NUCLEAR PRODUCTION

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
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Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 2  
Docket No. STN 50-529 (License No. NPF-51)  
Special Report 2-SR-89-009  
File: 90-020-404

Attached please find Supplement 1 to Special Report 2-SR-89-009 prepared and submitted pursuant to Technical Specifications 3.3.3.6 ACTION 31 and 6.9.2. This report discusses the inoperability of one channel of the Reactor Vessel Water Level System and updates the schedule for returning the system to OPERABLE status.

If you have any questions, please contact T. R. Bradish, Compliance Manager at (602) 393-2521.

Very truly yours,

*Hemant* for J.M.L.

JML/TRB/RKR/dmn

Attachment

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PALO VERDE NUCLEAR GENERATING STATION

Reactor Vessel Water Level System Inoperable for Greater Than 7 Days

License No. NPF-51

Docket No. STN 50-529

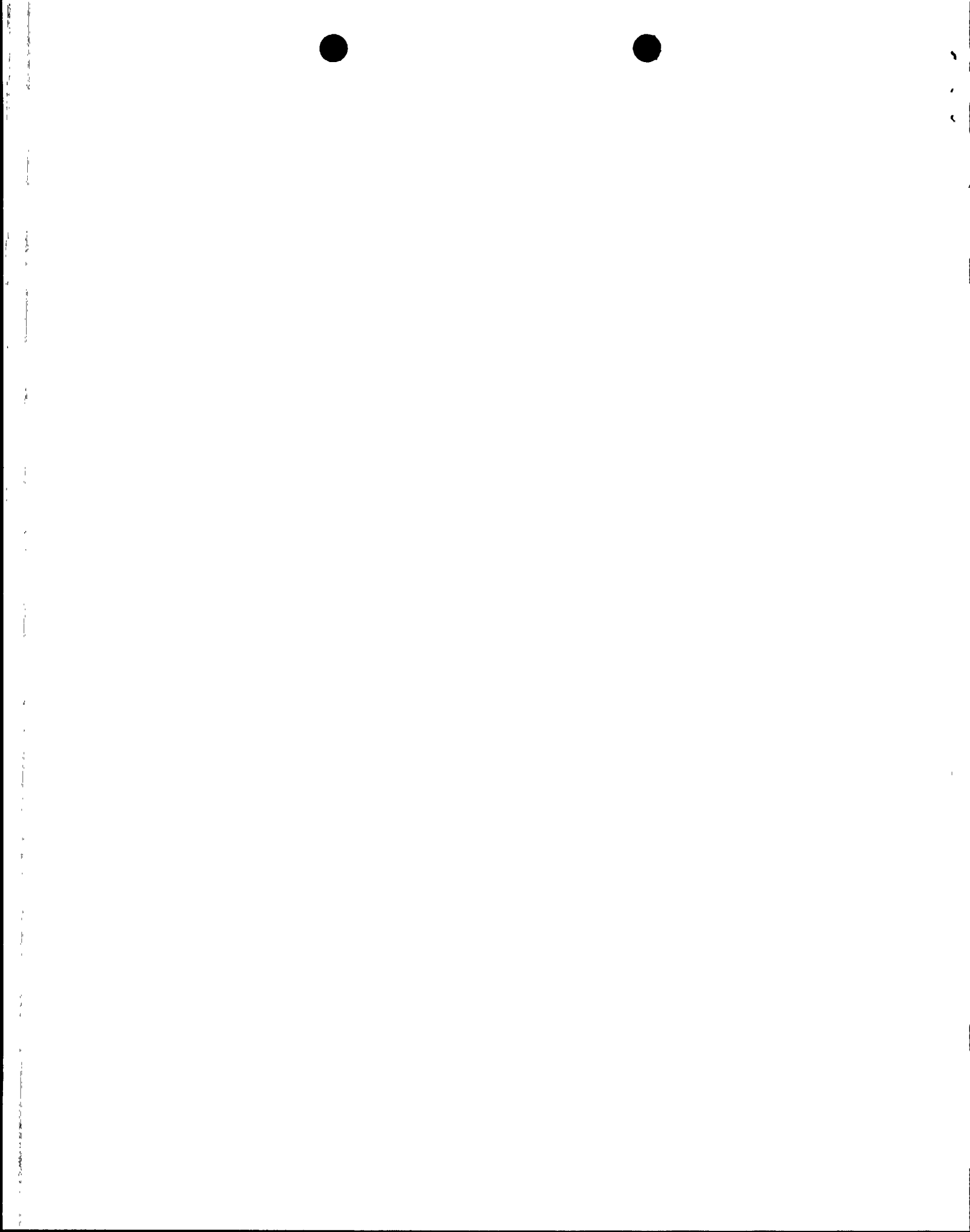
Special Report No. 2-SR-89-009-01

Pursuant to Post Accident Monitoring Instrumentation Technical Specification 3.3.3.6 Table 3.3-10, ACTION 31 and 6.9.2, this submittal provides the required Special Report for the inoperability of one channel of the Reactor Vessel Water Level System (RVWLS) for a period of greater than seven (7) days. At approximately 0915 MST on December 12, 1989, RVWLS Channel "A" was declared inoperable. The seven (7) day limit for returning the channel of RVWLS to an operable status was exceeded at approximately 0915 MST on December 19, 1989.

RVWLS consists of two channels ("A" and "B"). Each channel uses eight (8) heated junction thermocouples (HJTC) to generate the signals for eight (8) indicated levels. There are four (4) HJTC's in the reactor vessel head region and four HJTC's in the reactor vessel outlet plenum. For each channel to be operable, two or more of the upper four sensors and two or more of the lower four sensors must be functional. HJTC output signals are processed to provide indication of reactor vessel water level. RVWLS indication is displayed on the Quality Safety Parameter Display System (QSPDS).

At approximately 0915 MST on December 12, 1989, Palo Verde Unit 2 was in Mode 1 (POWER OPERATION) at approximately 100 percent power when QSPDS Channel "A" could not be calibrated in accordance with an approved procedure and was declared inoperable. As a result of QSPDS Channel "A" inoperability, RVWLS Channel "A" indication was not available and consequently was inoperable. An approved work authorization document was initiated to determine the cause of the QSPDS inoperability and to perform the necessary rework to return QSPDS Channel "A" to service. During troubleshooting to determine the cause of the QSPDS malfunction, it was determined that the Channel "A" modem was not operating properly and had drifted out of tolerance. The QSPDS Channel "A" modem was replaced and calibrated in accordance with an approved work authorization document. QSPDS Channel "A" was returned to operable status at approximately 2228 MST on December 26, 1989. QSPDS was inoperable for approximately 14 days, 13 hours and 13 minutes.

At approximately 1410 MST on December 15, 1989, a trouble alarm was received for the power supply to Channel "A" HJTC's number 5, 6, 7, and 8. An approved work authorization document was initiated to determine the cause of the RVWLS Channel "A" power supply trouble alarm. The troubleshooting determined that there was a ground in the heater for Channel "A" HJTC number 6. The power supply trouble alarm cleared when the breaker to the heater was opened, isolating the ground from the power supply. The heaters for HJTC's number 5, 7, and 8 are also powered through this breaker. Therefore Channel "A" lower



HJTC's number 5, 6, 7, and 8 were not functional. As a result, RVWLS Channel "A" was also inoperable because more than two (2) lower sensors (4 total) were inoperable in RVWLS Channel "A".

Unit 2 shutdown for the scheduled refueling outage on February 23, 1990. Troubleshooting during the Unit 2 refueling outage determined the ground on the heater for HJTC number 6 was internal to the HJTC and could not be repaired. A temporary modification was installed which separated the heater for HJTC number 6 from the power supply for channel "A" HJTC's number 5, 7, and 8 allowing the heaters for HJTC's 5, 7, and 8 to be energized.

Testing was performed on the HJTC's after they were reinstalled during the refueling outage. The testing determined that the heaters for channel "A" HJTC's 5 and 8 were also inoperable. Therefore, channel "A" lower HJTC's number 5, 6, and 8 were not functional. As a result, RVWLS channel "A" was still inoperable. At that time there were no spare HJTCs available to replace the channel "A" HJTC. Spare HJTCs had been ordered prior to this event when the remaining spare HJTCs were used in Unit 1. The delivery date for the spare HJTCs is November 1990. The delivery schedule, including expediting the delivery date, did not support replacement of the HJTC during the Unit 2 refueling outage. The Unit 2 refueling outage ended on July 19, 1990. TS 3.3.3.6 ACTIONS 31 and 32 allow continued operation with one or more channels of RVWLS inoperable if repairs are not feasible without shutting down. TS 3.3.3.6 also allows MODE changes with RVWLS inoperable. Therefore, RVWLS channel "A" will be returned to OPERABLE status during the next Unit 2 refueling outage. An approved procedure is also available to Control Room personnel for monitoring reactor vessel inventory with RVLMS inoperable.

