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SUBJECT: LER 89-006-01:on 890510,reactor protection sys actuation.
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Arizona Public Service Company

PALO VERDE NUCLEAR GENERATING STATION
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

192-00518-JGH/TDS/JEM
September 12, 1989

U. S. Nuclear Regulatory Commission
NRC Document Control Desk
Washington, D.C. 20555

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529 (License NPF-51)
Licensee Event Report 89-006-01
File: 89-020-404

Attached please find Supplement Number 1 to Licensee Event Report (LER) No. 89-006-00 prepared and submitted pursuant to the requirements of 10CFR 50.73. In accordance with 10CFR 50.73(d), we are herewith forwarding a copy of this report to the Regional Administrator of the Region V Office.

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

Very truly yours,

J. G. Haynes
Vice President
Nuclear Production

JGH/TDS/JEM/kj

Attachment

cc: W. F. Conway (all w/a)
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IE22
1/1

NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Palo Verde Unit 2	0 5 0 0 0 5 2 9	1 OF 0 5

TITLE (4)
Reactor Protection System Actuation

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
									N/A	0 5 0 0 0
0 5	1 0	8 9	8 9	— 0 0 6	— 0 1	0 9	1 2	8 9	N/A	0 5 0 0 0

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Timothy D. Shriver, Compliance Manager	6 0 2 3 9 3 - 2 5 2 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At approximately 1109 MST on May 10, 1989, Palo Verde Unit 2 was in Mode 5 (COLD SHUTDOWN) with the Reactor Coolant System (RCS) temperature at approximately 137 degrees F and pressurizer pressure at approximately 130 psia when an automatic actuation of the Reactor Protection System (RPS) occurred.

In accordance with approved procedures the Low Steam Generator Pressure and Low RCS Flow initiation trip relays were being energized with a temporary electrical power supply to perform Control Element Assembly testing. These trips are not required to be operable in Mode 5 and were reset with the temporary power supply. The Reactor Trip Switchgear Breakers were shut when a Computer Technician plugged in a test cart into the same wall receptacle that was supplying temporary power to the relays. Plugging in the test cart caused a dip in the voltage sufficient to deenergize the initiation relays and initiate an RPS actuation opening the Reactor Trip Switchgear Breakers.

As corrective action, the computer test cart was unplugged and all outlets from the common lighting panel in the control room were yellow caution tagged with instructions to contact the Shift Supervisor before using the receptacles.

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

At approximately 1109 MST on May 10, 1989, Palo Verde Unit 2 was in Mode 5 (COLD SHUTDOWN) with the Reactor Coolant System (RCS)(AB) temperature at approximately 137 degrees F and pressurizer (PZR)(AB) pressure at approximately 130 psia. Shutdown Cooling System (CP) Train "B" was in operation and no Reactor Coolant Pumps (P)(AB) were operating. Reactor Trip Switchgear Breakers (BKR)(AA) were shut for Control Element Assembly (CEA)(ROD)(AA) testing.

B. Reportable Event Description (Including Dates and Approximate Times of Major Occurrences):

Event Classification: An event that resulted in the automatic actuation of the Reactor Protection System (RPS)(JC).

At approximately 1109 MST on May 10, 1989, a Computer Technician (utility, non-licensed) plugged a test cart into an electrical receptacle (RCP)(EC) which caused a voltage dip to temporary power supplies (JX) for RPS initiation relays (RLY)(JC) and resulted in a reactor trip. The Technician was performing a test of the Emergency Response Facility Data Acquisition Display System (ERFDADS) in accordance with an approved procedure. When the technician plugged the test cart into the receptacle, the additional load caused a momentary dip in the receptacle voltage.

Prior to the event, preparations had been made to perform CEA testing. The testing requires that all RPS trips are reset and the Reactor Trip Switchgear Breakers are closed. Under the plant conditions (Mode 5) at that time, Low RCS Flow (JC) trips are normally tripped and Low Steam Generator Pressure trips are near the trip setpoint. These trips are not required to be operable in Mode 5. In accordance with an approved work control document both trips were supplied temporary power to ensure the trips would remain reset. An evaluation has determined that adequate margin to the Low Steam Generator Pressure trips does exist and supplying temporary power to the Low Steam Generator Pressure trips is not required.

The source of the temporary electrical power to the initiation relays was a dual receptacle outlet box (OBX)(EC). The technician plugged the ERFDADS test cart into the same receptacle and caused a dip in voltage to the temporary power supplies for the initiation relays. This dip in the voltage tripped the initiation relays

(RLY)(JC) of all four channels of Low Steam Generator Pressure and Low RCS Flow trips actuating the RPS and opening all four Reactor Trip Switchgear Breakers. The trip signals then reset immediately. All CEA's were fully inserted before the RPS actuation occurred. The Assistant Shift Supervisor (utility, licensed) then verified that there were no changes in Shutdown Cooling System flow, RCS temperature and pressure, and pressurizer level. The Assistant Shift Supervisor then went to check the temporary power supply and identified the Computer Technician's test cart plugged into the same receptacle outlet box. There were no operator errors that contributed to the event.

All equipment that was required to actuate actuated as designed and no other actuations occurred or were required.

C. Status of structures, systems, or components that were inoperable at the start of the event that contributed to the event:

Not applicable - no structures, systems, or components were inoperable at the start of the event that contributed to the event.

D. Cause of each component or system failure, if known:

Not applicable - no component or system failures were involved.

E. Failure mode, mechanism, and effect of each failed component, if known:

Not applicable - no failed components were involved.

F. For failures of components with multiple functions, list of systems or secondary functions that were also affected:

Not applicable - no failed components were involved.

G. For failures that rendered a train of a safety system inoperable, estimated time elapsed from the discovery of the failure until the train was returned to service:

Not applicable - no failures were involved.

H. Method of discovery of each component or system failure or procedural error:

Not applicable - no component or system failures or procedural errors were involved.

I. Cause of Event:

The cause of the RPS actuation was a dip in the voltage to the temporary power supply. When the computer technician went to perform the ERFDADS test he had all the test equipment switched on and plugged into a power strip. The closest outlet to the work station was the same outlet being used for the RPS temporary power supplies. When the computer technician plugged in and energized the power strip a load of approximately 8.3 amperes was placed on the electrical circuit causing the momentary dip in voltage.

J. Safety System Response:

Automatic actuation of the RPS occurred opening the Reactor Trip Switchgear Breakers. No other safety systems responded and none were necessary.

K. Failed Component Information:

Not applicable - no failed components were involved.

II. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THIS EVENT:

There were no safety consequences or implications of this event since the reactor was shutdown and in Mode 5 (COLD SHUTDOWN). There was no threat to the health and safety of the public.

III. CORRECTIVE ACTIONS:

A. Immediate:

The ERFDADS test cart was unplugged. Also as interim corrective action, all outlets from the common lighting panel in the control room were tagged with yellow caution tags with instructions not to use the receptacle without contacting the Shift Supervisor during the outage in Unit 2. Caution tags have also been installed on the receptacles for the circuit in Units 1 and 3 for the current outage.

B. Action to Prevent Recurrence:

As a short term corrective action, an Instruction Change Request (ICR) has been submitted to add a procedural step to procedure 36MT-9SB03 (PPS Bistable Input Simulation). The addition would be to have a caution tag clearance hung on all outlets powered from the same lighting panel as that used for 36MT-9SB03. The tags will provide a precaution to notify the Shift Supervisor before use. This ICR is expected to be implemented by December 10, 1989. In

the interim, caution tags have been hung in Units 1 and 3 which are or will be in an operational mode susceptible to this event.

As a long term corrective action, an Engineering Evaluation Request (EER) has been submitted to power receptacles placed in Plant Protection System (PPS) cabinets (CAB)(JC), that are used for simulating parameters, with a reliable source of power. This would eliminate extension cords to local outlets. This evaluation is expected to be complete by December 10, 1989.

Additionally an ICR was submitted to add a caution or note to the ERFDADS task alerting performers not to energize all test equipment used for this test at once. This ICR is expected to be implemented by December 10, 1989.

IV. PREVIOUS SIMILAR EVENTS:

No previous similar events have been reported.