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FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
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SUBJECT: LER 89-009-00:on 890816,Tech Spec violation occurred due to personnel error.

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Arizona Public Service Company

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

192-00521-JGH/TDS/SBJ
September 15, 1989

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528 (License No. NPF-41)
Licensee Event Report 89-009-00
File: 89-013-00

Attached please find Licensee Event Report (LER) No. 89-009-00 prepared and submitted pursuant to 10CFR 50.73. In accordance with 10CFR 50.73(d), we are herewith forwarding a copy of the LER 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,

for
J. G. Haynes
Vice President
Nuclear Production

JGH/TDS/SBJ/kj

Attachment

cc: W. F. Conway (all w/a)
D. B. Karner
E. E. Van Brunt, Jr.
J. B. Martin
T. J. Polich
M. J. Davis
A. C. Gehr
INPO Records Center

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 1	0 5 0 0 0 5 2 8	1 OF 0 6

TITLE (4)

Technical Specification Violation Due to Personnel Error

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 8	1 6	8 9	8 9	— 0 0 9	— 0 0	0 9	1 5	8 9	N/A	0 5 0 0 0

OPERATING MODE (9)	6	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)	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)	X 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)

On August 16, 1989 at approximately 0232,a QC inspector entered the Unit 1 steam generator #2 hot leg bowl without position control over the activities being provided by a radiation protection qualified individual as required by technical specification 6.12.1.c The QC inspector had been in the steam generator for approximately one minute and was existing the steam generator when radiation protection personnel discovered the QC inspector had entered the steam generator. The QC inspector recieved less than 400 mrem whole body dose and met all radiation entry permit requirements.

The cause of this event was cognitive personnel error by the QC inspector (contractor, non-licensed). The QC inspector failed to use formal communication protocol to verify that RP was permitting entry into the steam generator. A contributing factor was the RP technicians allowed the QC inspector and platform worker to access the platform without RP being on the communication lines.

Steam generator entries were stopped until radiation protection modified the pre-job briefing on communications and implemented a policy of maintaining RP on the communication headset any time personnel were on the SG platform. Mockup training for steam generator work will be modified to reinforce communications protocol. The radiological outage work package for steam generator entry will be revised to require RP on the communication headset any time personnel are on the SG platform.

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

On August 16, 1989 Palo Verde Unit 1 was in a refueling outage with the core (AC) off-loaded and reactor coolant system (AB) drained for steam generator (SG)(AB) work.

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

Event Classification: Condition prohibited by the Plant's Technical Specifications.

At approximately 0232 MST on August 16, 1989 a Quality Control (QC) inspector (contractor, non-licensed) entered the Palo Verde Unit 1 number 2 steam generator (SG)(AB) without positive control over the activities being provided by a radiation protection qualified individual as required by Technical Specification 6.12. The QC inspector had entered the steam generator to perform a cleanliness inspection prior to removal of the steam generator nozzle (NZL) dams. The QC inspector had been in the steam generator for approximately one minute and was exiting the steam generator when radiation protection personnel (contractor, non-licensed) discovered the QC inspector had entered the steam generator without continuous radiation protection monitoring. The QC inspector met all of the other requirements of the Radiation Exposure Permit. The QC inspector did not exceed his dose limit or stay time.

Technical Specification 6.12.1 states; "In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR Part 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Exposure Permit (REP)*. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.

b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this

monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.

c. A radiation protection qualified individual (i.e., qualified in radiation protection procedures) with a high radiation dose rate monitoring device who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Radiation Protection Supervisor or his designated alternate in the REP."

Technical Specification 6.12.2 states in part: "....In lieu of the stay time specification of the REP, direct or remote (such as use of closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive control over the activities in the area."

Prior to the event, on the evening of August 15, 1989 preparations were being made to remove the nozzle dams from the number 2 steam generator. A QC inspector was to inspect the steam generator for cleanliness prior to removal of the nozzle dams. Two qualified radiation protection (RP) technicians (contractor, non-licensed) were responsible for providing positive control over the cleanliness inspection and nozzle dam removal. A platform worker (contractor, non-licensed) was also assigned to assist with the job. Personnel (contractor, non-licensed) outside containment were also monitoring the steam generator work via the communication system.

The outside Radiation Protection technician informed the QC inspector and platform worker that entry to the generator would only be allowed if everyone had communications by headset. The QC inspector, platform worker, and inside Radiation Protection technician were then sent into the bay to hookup to air and communications lines. The outside RP technician verified communications with the QC inspector. The platform worker had to connect to another communication line before the outside RP technician could verify communications. The outside RP technician then went off the communication system to assist the nozzle dam pullers with the donning of their protective clothing.

The platform worker staged the ladder to the generator and made sure the lights were working. The QC inspector followed the platform worker on to the platform. Meanwhile, the inside RP technician was in the process of looking for an operable headset.

The QC inspector then stated, via the communication system, that he was ready to enter the steam generator. An affirmative response was heard on the communication system. The QC inspector believed that one of the two RP technicians had given him permission to enter the steam generator. The QC inspector then entered the steam generator and began his inspection.

At first, no one realized an RP technician was not monitoring the entry. The platform worker and the QC inspector were conversing during the evolution. The personnel outside containment questioned if RP was monitoring the entry, realized that RP was not monitoring the entry, and requested that the platform worker get the QC inspector out. By this time, the QC inspector was done with the inspection and had started out of the steam generator. At this time, the inside RP technician found a working headset and proceeded to the manway to assist the QC inspector out of the generator. The outside RP technician came back on the headset at the monitoring desk near the end of the entry and realized the entry had occurred. The outside RP technician instructed both the QC inspector and the platform worker to leave the manway area and wait in a low dose area of the bay.

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

Not applicable - there were no structures, components, or systems that were inoperable that contributed to this event.

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

Not applicable - there were no component or system failure.

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

Not applicable - there were no component or system failures.

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

Not applicable - there were no component or system failures.

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 - there were no component or system failures.

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

The unmonitored entry of the Quality Control inspector into the steam generator was discovered by personnel monitoring the work.

I. Cause of Event:

The cause of this event was cognitive personnel error the QC inspector (contractor, non-licensed). The QC inspector failed to use formal communication protocol to verify that RP was permitting entry into the steam generator. A contributing factor was the RP technicians allowed the QC inspector and platform worker to access the platform without RP being on the communication lines. There were no unusual characteristics of the work location which contributed to the event other than those discussed in Section I.B. There were no procedural errors which contributed to the event.

J. Safety System Response:

There were no safety system responses.

K. Failed Component Information:

Not applicable - there were no failed components.

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

There were no safety consequences or implications resulting from this event as this event had no impact on the safe operation of the plant or the health and safety of the public.

The entry into the steam generator without Radiation Protection monitoring did not result in any 10 CFR exposure limits being exceeded. The general area dose rate in the steam generator bowl were 3 to 15 Rem. The QC inspector was in the steam generator approximately one minute and recieved less than 400 mrem whole body exposure. This exposure was within PVNGS administrative limits.

III. CORRECTIVE ACTIONS:

A. Immediate:

As immediate corrective action, the involved Quality Control inspector was escorted from the Radiologically Controlled Area and his dosimetry was processed. All steam generator work was stopped.

Radiation Protection established a policy to always have a Radiation Protection technician on the communications system anytime there are personnel in position to make entries into the steam generator. A protocol for identification of speaking individuals was implemented and incorporated into the radiological pre-job briefing.

B. Action to Prevent Recurrence:

Mockup training for steam generator work will be modified to include reinforcement of communications protocol during practice evolutions. This is expected to be completed by November 15, 1989.

The radiological outage work package for steam generator setup and coverage will be revised to include use of pre-job briefings on communications protocol as well as the requirement to maintain a Radiation protection technician on the headset communciations system anytime personnel are in position for steam generator entry. This is expected to be completed by November 15, 1989.

IV. PREVIOUS SIMILAR EVENTS:

Previous similar events were reported in LER's 528/87-017, 528/89-011, and 530/89-005. These LER's involved violation of radiation entry permit requirements that resulted in a violation of techncial specification 6.12. The cause of the previous events were cognitive personnel error. Cognitive personnel errors are primarily the result of mental lapses and are not normally correctable with revised procedures or additional training. Therefore, the corrective actions for the previous events would not have prevented this event.

V. ADDITIONAL INFORMATION

The investigation into this event is continuing. If any additional information becomes available that significantly changes the readers perception of the event or the corrective action, a supplemental report will be submitted.