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SUBJECT: LER 88-008-00:on 880319,increased radiation level discovered during fuel insp caused ESF actuation.

W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Standardized plant. 05000529

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INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	AEOD/DOA	1	1	AEOD/DSP/NAS	1	1
	AEOD/DSP/ROAB	2	2	AEOD/DSP/TPAB	1	1
	ARM/DCTS/DAB	1	1	DEDRO	1	1
	NRR/DEST/ADS 7E	1	0	NRR/DEST/CEB 8H	1	1
	NRR/DEST/ESB 8D	1	1	NRR/DEST/ICSB 7	1	1
	NRR/DEST/MEB 9H	1	1	NRR/DEST/MTB 9H	1	1
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	~~NRR/DRIS/SIB 9A~~	1	1	NRR/PMAS/ILRB12	1	1
	REG FILE 02	1	1	RES TELFORD,J	1	1
	~~RES/DE/EIB~~	1	1	RES/DRPS DIR	1	1
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EXTERNAL:	EG&G GROH,M	4	4	FORD BLDG HOY,A	1	1
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NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

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)

Increased Radiation Level During Fuel Inspection Causes ESF 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 3	1 9	8 8	8 8	0 0 8	0 0		0 4	0 7	8 8	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)	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
Timothy D. Shriver, Compliance Manager	AREA CODE 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 March 19, 1988 at approximately 2029 MST, Palo Verde Unit 2 was in Mode 6 (REFUELING) when a Balance of Plant Engineered Safety Feature (BOP ESF) (JE) actuation occurred on the Fuel Building Essential Ventilation System (FBEVS) (VG) Train "A". This also resulted in the designed cross-trip actuation of FBEVS Train "B" and the Control Room Essential Filtration System (VI) Trains "A" and "B". There were no other ESF actuations and none were necessary. As a result of the BOP ESF actuations, the Essential Chilled Water System (KM) Trains "A" and "B" actuated. All equipment operated per design.

The BOP ESF actuations occurred as a result of radiation levels increasing above the "Alarm/Trip" setpoint for the Fuel Building (ND) Fuel Pool Area Radiation Monitor (RU-31) (IL) (RI). The radiation level increases were a result of fuel inspection activities in the area of RU-31. There were no procedural deficiencies or personnel errors involved.

As corrective action, the setpoint for RU-31 was raised and personnel working in the area were instructed to utilize caution in the area of RU-31.

There have been no previous similar events.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Palo Verde Unit 2	0 5 0 0 0 5 2 9	8 8	— 0 0 8	— 0 0	0 2 OF 0 5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

I. Description of What Occurred

A. Initial Conditions:

On March 19, 1988, Palo Verde Unit 2 was in Mode 6 (REFUELING) at approximately 80°F. The reactor core (AC) was being off-loaded to the spent fuel pool (DB) in order to support fuel leakage examinations being conducted by contractor, non-licensed personnel. The fuel examinations were being conducted utilizing an approved Ultrasonic Testing methodology. During the ultrasonic testing, it is periodically necessary to replace the test probe to ensure optimum efficiency. In order to replace the test probe, it is necessary to raise the test assembly out of the spent fuel pool to gain access to the components being replaced.

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

Event Classification: Automatic Actuation of an Engineered Safety Feature (ESF).

On March 19, 1988 at approximately 2029 MST, a Train "A" Fuel Building Essential Ventilation System Actuation Signal (FBEVAS) was initiated on the Balance of Plant Engineered Safety Features Actuation System (BOP ESFAS) (JE). The Train "A" FBEVAS was initiated by the Fuel Pool Area Radiation Monitor (RU-31) (IL) (RI). The Train "A" FBEVAS resulted in the designed cross-trips of Train "B" FBEVAS and Train "A" and "B" Control Room Essential Filtration Actuation Signals (CREFAS). The BOP ESF actuation signals resulted in actuations of the Fuel Building Essential Ventilation System (VG) Trains "A" and "B", the Control Room Essential Filtration System (VI) Trains "A" and "B", and the Essential Chilled Water System (KM) Trains "A" and "B". All equipment operated per design.

The BOP ESF actuations were identified by control room personnel (utility, licensed) as a result of main control board (MCBD) annunciations (ANN). After determining the cause of the event, control room personnel returned all actuated equipment to the normal configuration for the plant conditions by approximately 2137 MST.

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

None

D. Cause of each component or system failure or personnel error:

There were no component or system failures or personnel errors.

E. Failure mode, mechanism, and effect of each failed components:

Not applicable - no component failures involved.

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

Not applicable - no failed components involved.

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

Not applicable - no failures involved.

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

Not applicable - no procedural errors or failures involved.

I. Cause of Event:

The BOP ESF actuations described herein occurred as a result of a valid signal from the Fuel Building (ND) Fuel Pool Area Radiation Monitor (RU-31) (IL) (RI). RU-31 is located on a wall overlooking the fuel pool where it is intended to monitor for a release of activity due to a fuel handling accident in the fuel building. Pursuant to Technical Specification 3.3.3.1, RU-31 is required to have an "Alarm/Trip" setpoint of less than or equal to 15 mR/hr. During the event described herein, the "Alarm/Trip" setpoint was conservatively set at 5 mR/hr. As described in item I.A above, fuel inspection activities were in progress in the Fuel Building. At approximately 2029 MST on March 19, 1988, the fuel inspection device was being removed from the refueling pool to replace the fuel test probe. As the fuel inspection device was raised out of the fuel pool, the general area radiation levels in the vicinity of RU-31 increased beyond the "Alarm/Trip" setpoint resulting in the ESF actuations described herein. The radiation levels increased to approximately 10 mR/hr in the vicinity of RU-31. A review of this event has determined that there were no personnel errors or procedural errors involved. There were no unusual characteristics of the work location which contributed to the event. Operator (utility, licensed) actions were appropriate in assessing this event and determining that the BOP ESF actuations described herein were not as a result of a fuel handling accident.

J. Safety system responses:

March 19, 1988 approximately 2029 MST:

° Fuel Building Essential Ventilation System (VG) - this system is provided to reduce the release of radioactive materials into the environment in the event of radioactive contamination of the spent fuel area during a fuel handling accident. An "A" Train FBEVAS is initiated as a result of the radiation levels in the vicinity of the fuel pool area increasing above the "Alarm/Trip" setpoint for RU-31. A "B" Train FBEVAS is initiated as a result of a high airborne activity signal from the Fuel Building Ventilation Exhaust Monitor (RU-145) (IL) (RI). RU-145 monitors the effluent from the fuel building normal exhaust duct (VG) (DUCT). Per design, an actuation signal in either channel results in a cross-trip of the other train.

° Control Room Essential Filtration System (VI) Trains "A" and "B" - this system is provided to ensure that untreated outside air does not enter the control room (NA). A CREFAS was automatically actuated as a result of the FBEVAS.

° Essential Chilled Water System (KM) Trains "A" and "B" - this system is provided to supply chilled water to essential heating, ventilating, and air-conditioning (HVAC) systems in the control building (NA), auxiliary building (NF) and main steam support structure. This system was automatically actuated as a result of the CREFAS.

K. Failed component information:

Not applicable - no failed components involved.

II. Assessment of the safety consequences and implications of the event:

There were no safety consequences or implications resulting from this event. All components operated per design as a result of the radiation levels being above the "Alarm/Trip" setpoint values established for RU-31. It was determined that the increased radiation levels were not a result of a fuel handling accident.

III. Corrective Actions

A. Immediate:

The personnel (contract, non-licensed) involved with the fuel inspection activities lowered the fuel inspection equipment back into the pool, moved the fuel inspection equipment to a remote location, and replaced the fuel testing probe away from RU-31.

B. Action to Prevent Recurrence:

The "Alarm/Trip" setpoint was adjusted to 10 mR/hr and the personnel responsible for the fuel inspection activities were instructed to utilize caution when removing the test equipment from the refueling pool.

IV. Previous similar events:

None - there have been previous ESF actuations, however, none involved a similar sequence of events and root cause.

V. Additional Information

No specific error caused the event. A combination of the conservative setpoint and a normal, approved work evolution caused the actuation. As discussed above, additional precautions will be taken to minimize the probability of recurrence.

Arizona Nuclear Power Project
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

192-00364-JGH/TDS/DAJ
April 7, 1988

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 No. NPF-51)
Licensee Event Report 88-008-00
File: 88-020-404

Attached please find Licensee Event Report (LER) No. 88-008-00 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,

J. G. Haynes

J. G. Haynes
Vice President
Nuclear Production

JGH/TDS/DAJ/kj

Attachment

cc: O. M. DeMichele (all w/a)
E. E. Van Brunt, Jr.
J. B. Martin
T. J. Polich
E. A. Licitra
A. C. Gehr
INPO Records Center

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