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 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
 STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530
 AUTH. NAME AUTHOR AFFILIATION
 ECKLUND, B.S. Arizona Public Service Co. (formerly Arizona Nuclear Power
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: Monthly operating repts for Feb 1994 for Palo Verde Nuclear
 Generating Station units 1, 2, & 3. W/940314 ltr.

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Arizona Public Service Company

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

417-00202-BSE
March 14, 1994

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

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Monthly Operating Reports for February 1994
File: 94-024-404; 94-056-026

Enclosed are the Monthly Operating Reports for February 1994, prepared and submitted pursuant to Specification 6.9.1.6 of Appendix A (Technical Specifications) to the PVNGS Units 1, 2, and 3 Operating Licenses. By copy of this letter, Arizona Public Service Company is also forwarding the Monthly Operating Reports to the Regional Administrator, NRC Region V.

If you have any questions, please contact me at (602) 340-4068.

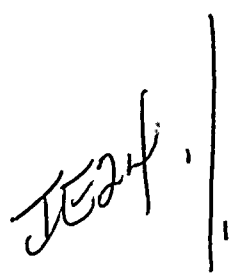
Sincerely,



BSE/gez
Enclosures

cc: K. E. Perkins (all w/enclosures)
A. H. Gutterman
NRC Senior Resident Inspector
INPO Records Center
Utility Data Institute

9403150320 940228
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NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-528
 UNIT NAME PVNGS-1
 DATE 03/08/94
 COMPLETED BY B. S. Ecklund
 TELEPHONE (602) 340-4068

OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 1
2. Reporting Period: February 1994
3. Licensed Thermal Power (MWt): 3800
4. Nameplate Rating (Gross MWe): 1403
5. Design Electrical Rating (Net MWe): 1270
6. Maximum Dependable Capacity (Gross MWe): 1303
7. Maximum Dependable Capacity (Net MWe): 1221
8. If Changes Occur In Capacity Ratings (Item Numbers 3 Through 7)
 Since Last Report, Give Reasons: N/A
9. Power Level to Which Restricted, If Any (Net MWe): None
10. Reasons For Restrictions, If Any: N/A

	Unit 1 Generating Statistics	This Month	Yr. to Date	Cumulative
11.	Hours in Reporting Period	672	1,416	70,896
12.	Hours Reactor was Critical	672.0	1,416.0	43,373.4
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator was On-Line	672.0	1,416.0	42,415.9
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,170,013	4,572,303	153,602,851
17.	Gross Electrical Energy Generated (MWH)	765,300	1,611,800	53,266,400
18.	Net Electrical Energy Generated (MWH)	716,976	1,510,634	49,968,995
19.	Unit Service Factor (%)	100.0%	100.0%	59.8%
20.	Unit Availability Factor (%)	100.0%	100.0%	59.8%
21.	Unit Capacity Factor (Using MDC Net)	87.4%	87.4%	57.7%
22.	Unit Capacity Factor (Using DER Net)	84.0%	84.0%	55.5%
23.	Unit Forced Outage Rate (%)	0.0%	0.0%	15.3%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date and Duration of Each): N/A
-
25. If Shutdown At End of Report Period, Estimated Date of Start-up: N/A

	Forecast	Achieved
INITIAL CRITICALITY	<u>05/85</u>	<u>05/25/85</u>
INITIAL ELECTRICITY	<u>06/85</u>	<u>06/10/85</u>
COMMERCIAL OPERATION	<u>11/85</u>	<u>01/28/86</u>

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-528
UNIT NAME PVNGS-1
DATE 03/08/94
COMPLETED BY B. S. Ecklund
TELEPHONE (602) 340-4068

MONTH: February 1994

DAY	AVERAGE DAILY POWER LEVEL
1	<u>1070</u>
2	<u>1069</u>
3	<u>1070</u>
4	<u>1073</u>
5	<u>1072</u>
6	<u>1073</u>
7	<u>1072</u>
8	<u>1070</u>
9	<u>1072</u>
10	<u>1072</u>
11	<u>1071</u>
12	<u>1072</u>
13	<u>1072</u>
14	<u>1072</u>
15	<u>1072</u>
16	<u>1071</u>

DAY	AVERAGE DAILY POWER LEVEL
17	<u>1068</u>
18	<u>1071</u>
19	<u>1072</u>
20	<u>1072</u>
21	<u>1072</u>
22	<u>1072</u>
23	<u>1073</u>
24	<u>1072</u>
25	<u>1072</u>
26	<u>1071</u>
27	<u>1070</u>
28	<u>1076</u>
29	<u> </u>
30	<u> </u>
31	<u> </u>

REFUELING INFORMATION

DOCKET NO.	<u>50-528</u>
UNIT NAME	<u>PVNGS-1</u>
DATE	<u>03/08/94</u>
COMPLETED BY	<u>B. S. Ecklund</u>
TELEPHONE	<u>(602) 340-4068</u>

1. Scheduled date for next refueling shutdown.

The 5th refueling outage is tentatively scheduled for 03/13/95.

2. Scheduled date for restart following refueling.

06/01/95.

3. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment?

No.

4. Scheduled date for submitting proposed licensing action and supporting information.

N/A.

5. Important Licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, and new operating procedures.

N/A.

6. The number of fuel assemblies.

- a) In the core. 241
b) In the spent fuel storage pool. 368

7. Licensed spent fuel storage capacity. 1329

Intended change in spent fuel storage capacity. None

8. Projected date of last refueling that can be discharged to spent fuel storage pool assuming present capacity.

2005 (18 Month reloads and full core discharge capability).

SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO. 50-528
UNIT NAME PVNGS-1
DATE 03/08/94
COMPLETED BY B. S. Ecklund
TELEPHONE (602) 340-4068

February 1994

02/01	0000	Unit began the month in Mode 1, 85% RX power.
02/28	1228	Commenced power increase to 86% at the direction of the Plant Manager.
02/28	1305	Stabilized RX power at 86%.
02/28	2400	Unit ended the month in Mode 1, 86% RX power.

SHUTDOWNS AND POWER REDUCTIONS
February 1994

DOCKET NO 50-528
UNIT NAME PVNGS-1
DATE 03/08/94
COMPLETED BY B. S. Ecklund.
TELEPHONE (602)340-4068

No.	Date	Type ¹	Outage Duration Hours	Reason ²	Method of Shutting Down Reactor ³	LER No.	System Code ⁴	Component Code ⁵	Cause and Corrective Action to Prevent Occurrence
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No reactor shutdowns or significant power reductions occurred during the month of February 1994

¹F-Forced
S-Scheduled

²Reason:
A-Equipment Failure(Explain)
B-Maintenance or Test
C-Refueling
D-Regulatory Restriction
E-Operator Training & License
Examination
F-Administrative
G-Operational Error
H-Other (Explain)

³Method:
1-Manual
2-Manual Scram
3-Automatic Scram
4-Continuation from Previous Month
5-Reduction of 20% or Greater in the
Past 24 Hours
9-Other-(Explain)

⁴Exhibit F - Instructions for Preparation
of the Data Entry Sheets for Licensee
Event Report (LER) File (NUREG0161)

⁵Exhibit H-Same Source

NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-529
 UNIT NAME PVNGS-2
 DATE 03/08/94
 COMPLETED BY B. S. Ecklund
 TELEPHONE (602) 340-4068

OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 2
2. Reporting Period: February 1994
3. Licensed Thermal Power (MWt): 3800
4. Nameplate Rating (Gross MWe): 1403
5. Design Electrical Rating (Net MWe): 1270
6. Maximum Dependable Capacity (Gross MWe): 1303
7. Maximum Dependable Capacity (Net MWe): 1221
8. If Changes Occur In Capacity Ratings (Item Numbers 3 Through 7)
 Since Last Report, Give Reasons: N/A
9. Power Level to Which Restricted, If Any (Net MWe): None
10. Reasons For Restrictions, If Any: N/A

	Unit 2 Generating Statistics	This Month	Yr. to Date	Cumulative
11.	Hours in Reporting Period	672	1,416	65,280
12.	Hours Reactor was Critical	0.0	168.6	44,717.1
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator was On-Line	0.0	168.6	43,848.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	0	534,792	160,369,037
17.	Gross Electrical Energy Generated (MWH)	0	186,900	55,849,870
18.	Net Electrical Energy Generated (MWH)	0	169,052	52,289,086
19.	Unit Service Factor (%)	0.0%	11.9%	67.2%
20.	Unit Availability Factor (%)	0.0%	11.9%	67.2%
21.	Unit Capacity Factor (Using MDC Net)	0.0%	9.8%	65.6%
22.	Unit Capacity Factor (Using DER Net)	0.0%	9.4%	63.1%
23.	Unit Forced Outage Rate (%)	0.0%	0.0%	6.1%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date and Duration of Each): N/A

25. If Shutdown At End of Report Period, Estimated Date of Start-up: 03/25/94

	Forecast	Achieved
INITIAL CRITICALITY	<u>03/85</u>	<u>04/18/85</u>
INITIAL ELECTRICITY	<u>06/86</u>	<u>05/20/85</u>
COMMERCIAL OPERATION	<u>11/86</u>	<u>09/19/86</u>

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-529
UNIT NAME PVNGS-2
DATE 03/08/94
COMPLETED BY B. S. Ecklund
TELEPHONE (602) 340-4068

MONTH: February 1994

DAY AVERAGE DAILY POWER LEVEL

1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0

DAY AVERAGE DAILY POWER LEVEL

17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	
30	
31	

REFUELING INFORMATION

DOCKET NO.	<u>50-529</u>
UNIT NAME	<u>PVNGS-2</u>
DATE	<u>03/08/94</u>
COMPLETED BY	<u>B. S. Ecklund</u>
TELEPHONE	<u>(602) 340-4068</u>

1. Scheduled date for next refueling shutdown.

The 5th refueling outage is tentatively scheduled for 09/17/94, however, it is more likely to take place in the first quarter of 1995.

2. Scheduled date for restart following refueling.

12/06/94, or 80 days following the new refueling shutdown date.

3. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment?

A change may be required to Technical Specification 3.9.6 to raise the overload cutoff limit to accommodate the new fuel assembly modification. Also, Technical Specification Section 6.9.1.10 will be modified to add the new Inlet Flow Distribution methodology.

4. Scheduled date for submitting proposed licensing action and supporting information.

10/13/94.

5. Important Licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, and new operating procedures.

The fuel assembly will consist of a denser fuel pellet, Erbium burnable absorber and guardian grid. A primary temperature drop of 10° F is currently planned.

6. The number of fuel assemblies.

- a) In the core. 241
b) In the spent fuel storage pool. 384

7. Licensed spent fuel storage capacity. 1329

Intended change in spent fuel storage capacity. None

8. Projected date of last refueling that can be discharged to spent fuel storage pool assuming present capacity.

2005 (18 Month reloads and full core discharge capability).

SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO. 50-529
UNIT NAME PVNGS-2
DATE 03/08/94
COMPLETED BY B. S. Ecklund
TELEPHONE (602) 340-4068

February 1994

02/01 0000 Unit began the month in Mode 5, mid-cycle outage in progress.
02/28 2400 Unit ended the month in Mode 5, mid-cycle outage in progress.

SHUTDOWNS AND POWER REDUCTIONS
February 1994

DOCKET NO 50-529
UNIT NAME PVNGS-2
DATE 03/08/94
COMPLETED BY B. S. Ecklund
TELEPHONE (602)340-4068

No.	Date	Type ¹	Outage Duration Hours	Reason ²	Method of Shutting Down Reactor ³	LER No.	System Code ⁴	Component Code ⁵	Cause and Corrective Action to Prevent Occurrence
94-01	01/08/94	S	672.0	B	2	N/A	N/A	N/A	Continuation of planned mid-cycle from previous month.

¹F-Forced
S-Scheduled

²Reason:
A-Equipment Failure(Explain)
B-Maintenance or Test
C-Refueling
D-Regulatory Restriction
E-Operator Training & License
Examination
F-Administrative
G-Operational Error
H-Other (Explain)

³Method:
1-Manual
2-Manual Scram
3-Automatic Scram
4-Continuation from Previous Month
5-Reduction of 20% or Greater in the
Past 24 Hours
9-Other-(Explain)

⁴Exhibit F - Instructions for Preparation
of the Data Entry Sheets for Licensee
Event Report (LER) File (NUREG0161)

⁵Exhibit H-Same Source

NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-530
 UNIT NAME PVNGS-3
 DATE 03/08/94
 COMPLETED BY B. S. Ecklund
 TELEPHONE (602) 340-4068

OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 3
2. Reporting Period: February 1994
3. Licensed Thermal Power (MWt): 3800
4. Nameplate Rating (Gross MWe): 1403
5. Design Electrical Rating (Net MWe): 1270
6. Maximum Dependable Capacity (Gross MWe): 1303
7. Maximum Dependable Capacity (Net MWe): 1221
8. If Changes Occur In Capacity Ratings (Item Numbers 3 Through 7) Since Last Report, Give Reasons: N/A
9. Power Level to Which Restricted, If Any (Net MWe): None
10. Reasons For Restrictions, If Any: N/A

	Unit 3 Generating Statistics	This Month	Yr. to Date	Cumulative
11.	Hours in Reporting Period	672	1,416	53,856
12.	Hours Reactor was Critical	672.0	1,416.0	40,431.9
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator was On-Line	672.0	1,416.0	39,840.1
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,176,388	4,584,415	145,255,675
17.	Gross Electrical Energy Generated (MWH)	768,800	1,621,500	50,843,400
18.	Net Electrical Energy Generated (MWH)	717,846	1,513,758	47,811,979
19.	Unit Service Factor (%)	100.0%	100.0%	74.0%
20.	Unit Availability Factor (%)	100.0%	100.0%	74.0%
21.	Unit Capacity Factor (Using MDC Net)	87.5%	87.6%	72.7%
22.	Unit Capacity Factor (Using DER Net)	84.1%	84.2%	69.9%
23.	Unit Forced Outage Rate (%)	0.0%	0.0%	6.7%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date and Duration of Each): 4th Refueling outage is scheduled to begin on March 19, 1994. 80 days duration.
25. If Shutdown At End of Report Period, Estimated Date of Start-up: N/A

	Forecast	Achieved
INITIAL CRITICALITY	<u>07/87</u>	<u>10/25/87</u>
INITIAL ELECTRICITY	<u>07/87</u>	<u>11/28/87</u>
COMMERCIAL OPERATION	<u>09/87</u>	<u>01/08/88</u>

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-530
UNIT NAME PVNGS-3
DATE 03/08/94
COMPLETED BY B. S. Ecklund
TELEPHONE (602) 340-4068

MONTH: February 1994

DAY	AVERAGE DAILY POWER LEVEL
1	1071
2	1069
3	1067
4	1068
5	1067
6	1071
7	1069
8	1069
9	1067
10	1069
11	1066
12	1064
13	1067
14	1069
15	1069
16	1067

DAY	AVERAGE DAILY POWER LEVEL
17	1062
18	1067
19	1067
20	1070
21	1069
22	1072
23	1073
24	1072
25	1071
26	1069
27	1070
28	1078
29	
30	
31	

REFUELING INFORMATION

DOCKET NO.	<u>50-530</u>
UNIT NAME	<u>PVNGS-3</u>
DATE	<u>03/08/94</u>
COMPLETED BY	<u>B. S. Ecklund</u>
TELEPHONE	<u>(602) 340-4068</u>

1. **Scheduled date for next refueling shutdown.**

03/19/94, 4th refueling.

2. **Scheduled date for restart following refueling.**

06/07/94.

3. **Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment?**

At present, four Tech. Spec. changes are in process. One for increasing the radially averaged weight percent of U235 in fuel rods to 4.30^{W/o}. The other is to change the DNBR setpoint limit from 1.24 to 1.30. These are generic Tech. Spec. changes, and will be implemented on a Unit by Unit basis, beginning with U3C5.

Also, there are two other Tech. Spec. changes that will allow U3C5 to operate at 100% power due to the steam generator issues.

4. **Scheduled date for submitting proposed licensing action and supporting information.**

The fuel enrichment change was submitted in October 1993 and the DNBR setpoint change was submitted in January 1994.

5. **Important Licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, and new operating procedures.**

U3C5 will incorporate a new higher maximum enrichment level of 4.30^{W/o} U235 and will also utilize a new integral burnable absorber, Erbium.

The NRC granted a license amendment (No. 35) which allows the use of 80 fuel rods clad with advanced zirconium based alloys (other than Zircaloy-4) in two fuel assemblies during Unit 3 Cycles 4, 5, and 6 for in-reactor performance evaluation. Date of issuance was July 20, 1992.

6. **The number of fuel assemblies.**

a) In the core. 241

b) In the spent fuel storage pool. 284

7. **Licensed spent fuel storage capacity. 1329**

Intended change in spent fuel storage capacity. None

8. **Projected date of last refueling that can be discharged to spent fuel storage pool assuming present capacity.**

2005 (18 Month reloads and full core discharge capability).

SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO.	<u>50-530</u>
UNIT NAME	<u>PVNGS-3</u>
DATE	<u>03/08/94</u>
COMPLETED BY	<u>B. S. Ecklund</u>
TELEPHONE	<u>(602) 340-4068</u>

February 1994

02/01	0000	Unit began the month in Mode 1, 85% RX power.
02/28	1002	Commenced power increase to 86% at the direction of the Plant Manager.
02/28	1136	Stabilized RX power at 86%.
02/28	0000	Unit ended the month in Mode 1, 86% RX power.

SHUTDOWNS AND POWER REDUCTIONS
February 1994

DOCKET NO 50-530
UNIT NAME PVNGS-3
DATE 03/08/94
COMPLETED BY B. S. Ecklund
TELEPHONE (602)340-4068

No.	Date	Type ¹	Outage Duration Hours	Reason ²	Method of Shutting Down Reactor ³	LER No.	System Code ⁴	Component Code ⁵	Cause and Corrective Action to Prevent Occurrence
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No reactor shutdowns or significant power reductions occurred during the month of February 1994

¹F-Forced
S-Scheduled

²Reason:
A-Equipment Failure(Explain)
B-Maintenance or Test
C-Refueling
D-Regulatory Restriction
E-Operator Training & License
Examination
F-Administrative
G-Operational Error
H-Other (Explain)

³Method:
1-Manual
2-Manual Scram
3-Automatic Scram
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Past 24 Hours
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Event Report (LER) File (NUREG0161)

⁵Exhibit H-Same Source

