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STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Public 05000529

STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Public 05000530

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SUBJECT: Monthly operating repts for Dec 1996 for PVNGS, Units 1, 2 & 3  
W/970109 ltr.

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Palo Verde Nuclear  
Generating Station

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January 9, 1997

U. S. Nuclear Regulatory Commission  
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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 DECEMBER 1996**

Enclosed are the Monthly Operating Reports for DECEMBER 1996, 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 IV.

If you have any questions, please contact Judy Fulton at (602) 250-3549.

Sincerely,

*David Mauldin for G.R. Overbeck*

GRO/JDF/clj

Enclosures: December 1996 Monthly Operating Reports

cc: L. J. Callan (all w/enclosures)  
K. E. Perkins  
NRC Senior Resident Inspector  
INPO Records Center  
Utility Data Institute

9701170305 961231  
PDR ADOCK 05000528  
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*IE24*  
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100-100000-100000

# NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-528  
UNIT NAME PVNGS-1  
DATE 01/09/97  
COMPLETED BY J. D. Fulton  
TELEPHONE (602) 250-3549

## OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 1
2. Reporting Period: December 1996
3. Licensed Thermal Power (MWt): 3800
4. Nameplate Rating (Gross MWe): 1403
5. Design Electrical Rating (Net MWe): 1249
6. Maximum Dependable Capacity (Gross MWe): 1299
7. Maximum Dependable Capacity (Net MWe): 1227
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	744	8,784	95,784
12.	Hours Reactor was Critical	744.0	7,362.2	65,325.2
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator was On-Line	744.0	7,249.4	64,152.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,882,996	27,077,523	232,613,727
17.	Gross Electrical Energy Generated (MWH)	985,000	9,243,200	80,353,700
18.	Net Electrical Energy Generated (MWH)	934,296	8,712,996	75,470,717
19.	Unit Service Factor (%)	100.0%	82.5%	67.0%
20.	Unit Availability Factor (%)	100.0%	82.5%	67.0%
21.	Unit Capacity Factor (Using MDC Net)	102.3%	80.8%	64.5%
22.	Unit Capacity Factor (Using DER Net)	100.5%	79.4%	62.0%
23.	Unit Forced Outage Rate (%)	0.0%	2.8%	11.3%

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

INITIAL CRITICALITY  
INITIAL ELECTRICITY  
COMMERCIAL OPERATION

Forecast  
05/85  
06/85  
12/85

Achieved  
05/25/85  
06/10/85  
01/28/86



# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO.	50-528
UNIT NAME	PVNGS-1
DATE	01/09/97
COMPLETED BY	J. D. Fulton
TELEPHONE	(602) 250-3549

MONTH: December 1996

DAY	AVERAGE DAILY POWER LEVEL
-----	---------------------------

1	1262
2	1261
3	1262
4	1262
5	1262
6	1257
7	1256
8	1257
9	1257
10	1253
11	1257
12	1257
13	1256
14	1257
15	1257
16	1261

DAY	AVERAGE DAILY POWER LEVEL
-----	---------------------------

17	1261
18	1263
19	1263
20	1261
21	1262
22	1260
23	1260
24	1261
25	1262
26	1261
27	1260
28	1259
29	1259
30	1259
31	1258

## REFUELING INFORMATION

DOCKET NO.	<u>50-528</u>
UNIT NAME	<u>PVNGS-1</u>
DATE	<u>01/09/97</u>
COMPLETED BY	<u>J. D. Fulton</u>
TELEPHONE	<u>(602) 250-3549</u>

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

The 7th refueling outage is scheduled for 03/14/98.

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

05/03/98.

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.**

12/04/97.

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.**

None.

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

- a) In the core. 241  
b) In the spent fuel storage pool. 548

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>50-528</u>
UNIT NAME	<u>PVNGS-1</u>
DATE	<u>01/09/97</u>
COMPLETED BY	<u>J. D. Fulton</u>
TELEPHONE	<u>(602) 250-3549</u>

## December 1996

12/01	0000	Unit began the month in Mode 1 at 100% RX power.
12/31	2359	Unit ended the month in Mode 1 at 100% RX power.



SHUTDOWNS AND POWER REDUCTIONS  
December 1996

DOCKET NO 50-528  
UNIT NAME PVNGS-1  
DATE 01/09/97  
COMPLETED BY J. D. Fulton  
TELEPHONE (602)250-3549

No.	Date	Type <sup>1</sup>	Outage Duration Hours	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	LER No.	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause and to Prevent Occurrence	Corrective Action
-----	------	-------------------	-----------------------------	---------------------	--	---------	-----------------------------	--------------------------------	------------------------------------	-------------------

No reactor shutdowns or significant power reductions occurred during the month of December 1996.

<sup>1</sup>F-Forced  
S-Scheduled

<sup>2</sup>Reason:  
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)

<sup>3</sup>Method:  
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)

<sup>4</sup>Exhibit F - Instructions for Preparation  
of the Data Entry Sheets for Licensee  
Event Report (LER) File (NUREG 0161)

<sup>5</sup>Exhibit H-Same Source



# NRC MONTHLY OPERATING REPORT

DOCKET NO.	50-529
UNIT NAME	PVNGS-2
DATE	01/09/97
COMPLETED BY	J. D. Fulton
TELEPHONE	(602) 250-3549

## OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 2
2. Reporting Period: December 1996
3. Licensed Thermal Power (MWt): 3876
4. Nameplate Rating (Gross MWe): 1403
5. Design Electrical Rating (Net MWe): 1249
6. Maximum Dependable Capacity (Gross MWe): 1299
7. Maximum Dependable Capacity (Net MWe): 1227
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	744	8,784	90,168
12.	Hours Reactor was Critical	744.0	7,598.6	65,733.7
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator was On-Line	744.0	7,548.7	64,570.9
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,883,225	28,714,868	236,742,481
17.	Gross Electrical Energy Generated (MWH)	992,100	9,853,400	82,182,870
18.	Net Electrical Energy Generated (MWH)	944,419	9,346,141	77,110,892
19.	Unit Service Factor (%)	100.0%	85.9%	71.6%
20.	Unit Availability Factor (%)	100.0%	85.9%	71.6%
21.	Unit Capacity Factor (Using MDC Net)	103.5%	86.7%	70.0%
22.	Unit Capacity Factor (Using DER Net)	101.6%	85.2%	67.3%
23.	Unit Forced Outage Rate (%)	0.0%	0.7%	4.8%

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

INITIAL CRITICALITY  
INITIAL ELECTRICITY  
COMMERCIAL OPERATION

Forecast  
03/86  
06/86  
12/86

Achieved  
04/18/86  
05/20/86  
09/19/86

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-529  
UNIT NAME PVNGS-2  
DATE 01/09/97  
COMPLETED BY J. D. Fulton  
TELEPHONE (602) 250-3549

MONTH: December 1996

DAY AVERAGE DAILY POWER LEVEL

1	1273
2	1273
3	1273
4	1274
5	1274
6	1270
7	1268
8	1269
9	1271
10	1267
11	1269
12	1270
13	1267
14	1269
15	1271
16	1274

DAY AVERAGE DAILY POWER LEVEL

17	1274
18	1273
19	1276
20	1277
21	1275
22	1275
23	1274
24	1276
25	1276
26	1277
27	1276
28	1273
29	1274
30	1273
31	1272



## REFUELING INFORMATION

DOCKET NO.	<u>50-529</u>
UNIT NAME	<u>PVNGS-2</u>
DATE	<u>01/09/97</u>
COMPLETED BY	<u>J. D. Fulton</u>
TELEPHONE	<u>(602) 250-3549</u>

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

The 7th refueling outage is scheduled for 09/06/97.

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

10/26/97.

**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. 544

**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>50-529</u>
UNIT NAME	<u>PVNGS-2</u>
DATE	<u>01/09/97</u>
COMPLETED BY	<u>J. D. Fulton</u>
TELEPHONE	<u>(602) 250-3549</u>

December 1996

12/01	0000	Unit began the month in Mode 1 at 100% RX power.
12/31	2359	Unit ended the month in Mode 1 at 100% RX power.

SHUTDOWNS AND POWER REDUCTIONS  
December 1996

DOCKET NO 50-529  
UNIT NAME PVNGS-2  
DATE 01/09/97  
COMPLETED BY J. D. Fulton  
TELEPHONE (602)250-3549

No.	Date	Type <sup>1</sup>	Outage Duration Hours	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	LER No.	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause and Corrective Action to Prevent Occurrence
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No reactor shutdowns or significant power reductions occurred during the month of December 1996.

<sup>1</sup>F-Forced  
S-Scheduled

<sup>2</sup>Reason:  
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)

<sup>3</sup>Method:  
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)

<sup>4</sup>Exhibit F - Instructions for Preparation  
of the Data Entry Sheets for Licensee  
Event Report (LER) File (NUREG 0161)

<sup>5</sup>Exhibit H-Same Source



# NRC MONTHLY OPERATING REPORT

DOCKET NO.	50-530
UNIT NAME	PVNGS-3
DATE	01/09/97
COMPLETED BY	J. D. Fulton
TELEPHONE	(602) 250-3549

## OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 3
2. Reporting Period: December 1996
3. Licensed Thermal Power (MWt): 3876
4. Nameplate Rating (Gross MWe): 1403
5. Design Electrical Rating (Net MWe): 1253
6. Maximum Dependable Capacity (Gross MWe): 1302
7. Maximum Dependable Capacity (Net MWe): 1230
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	744	8,784	78,744
12.	Hours Reactor was Critical	744.0	8,763.8	61,456.8
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator was On-Line	744.0	8,700.5	60,677.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,883,191	33,370,902	223,735,960
17.	Gross Electrical Energy Generated (MWH)	986,600	11,412,000	77,885,100
18.	Net Electrical Energy Generated (MWH)	933,802	10,789,603	73,299,145
19.	Unit Service Factor (%)	100.0%	99.0%	77.1%
20.	Unit Availability Factor (%)	100.0%	99.0%	77.1%
21.	Unit Capacity Factor (Using MDC Net)	102.0%	99.9%	76.2%
22.	Unit Capacity Factor (Using DER Net)	100.2%	98.0%	73.3%
23.	Unit Forced Outage Rate (%)	0.0%	1.0%	4.7%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date and Duration of Each): 6th Refueling outage is scheduled for 2/22/97 through 4/13/97 (50 days).
25. If Shutdown At End of Report Period, Estimated Date of Start-up: N/A

INITIAL CRITICALITY  
INITIAL ELECTRICITY  
COMMERCIAL OPERATION

Forecast  
07/87  
07/87  
09/87

Achieved  
10/25/87  
12/28/87  
01/08/88

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-530  
UNIT NAME PVNGS-3  
DATE 01/09/97  
COMPLETED BY J. D. Fulton  
TELEPHONE (602) 250-3549

MONTH: December 1996

DAY AVERAGE DAILY POWER LEVEL

1	1265
2	1263
3	1257
4	1260
5	1263
6	1260
7	1256
8	1258
9	1257
10	1249
11	1254
12	1256
13	1255
14	1258
15	1261
16	1264

DAY AVERAGE DAILY POWER LEVEL

17	1264
18	1266
19	1266
20	1265
21	1264
22	1261
23	1261
24	1263
25	1264
26	1264
27	1261
28	1261
29	1260
30	1261
31	1258



## REFUELING INFORMATION

DOCKET NO.	50-530
UNIT NAME	PVNGS-3
DATE	01/09/97
COMPLETED BY	J. D. Fulton
TELEPHONE	(602) 250-3549

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

The 6th refueling outage is scheduled for 2/22/97.

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

4/13/97.

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

None.

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

None.

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.**

None.

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

a) In the core. 241

b) In the spent fuel storage pool. 456

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>01/09/97</u>
COMPLETED BY	<u>J. D. Fulton</u>
TELEPHONE	<u>(602) 250-3549</u>

December 1996

12/01	0000	Unit began the month in Mode 1 at 100% RX power.
12/31	2359	Unit ended the month in Mode 1 at 100% RX power.



SHUTDOWNS AND POWER REDUCTIONS  
December 1996

DOCKET NO      50-530  
UNIT NAME      PVNGS-3  
DATE            01/09/97  
COMPLETED BY J. D. Fulton  
TELEPHONE      (602)250-3549

No.	Date	Type <sup>1</sup>	Outage Duration Hours	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	LER No.	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause and Corrective Action to Prevent Occurrence
-----	------	-------------------	-----------------------------	---------------------	--	---------	-----------------------------	--------------------------------	--

No reactor shutdowns or significant power reductions occurred during the month of December 1996.

<sup>1</sup>F-Forced  
S-Scheduled

<sup>2</sup>Reason:  
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)

<sup>3</sup>Method:  
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)

<sup>4</sup>Exhibit F - Instructions for Preparation  
of the Data Entry Sheets for Licensee  
Event Report (LER) File (NUREG 0161)

<sup>5</sup>Exhibit H-Same Source

