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CHAVET,K.A. Arizona Public Service Co. (formerly Arizona Nuclear Power
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SUBJECT: Monthly operating repts for Dec 1990 for Palo Verde Nuclear Generating Station,Units 1,2 & 3.W/ 910114 ltr.

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

JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

254-01321-JML/KAC
January 14, 1991

Docket Nos. STN 50-528/529/530

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U. S. Nuclear Regulatory Commission
Mail Station P1-37
Washington, D.C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Monthly Operating Reports for December 1990
File: 91-024-404

Attached are the Monthly Operating Reports for December 1990, prepared and submitted pursuant to Specification 6.9.1.6 of Appendix A (Technical Specifications) to the Palo Verde Nuclear Generating Station, Units 1, 2, and 3 Operating Licenses. By copy of this letter, we are also forwarding the Monthly Operating Reports to the Regional Administrator of the Region V Office.

If you have any questions, please contact Mr. K. A. Chavet, at (602) 340-4718.

Very truly yours,

J. M. Levine
Vice President
Nuclear Production

JML/KAC
Attachments

cc: J. B. Martin (all w/attachments)
D. H. Coe
INPO Records Center

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NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-528
UNIT NAME PVNGS-1
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 1
2. Reporting Period: December 1990
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

		This Month	Yr.-to-Date	Cumulative
11.	Hours in Reporting Period	744	8,760	43,176
12.	Number of Hours Reactor Was Critical	744.0	4,198.1	21,460.2
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator On-Line	744.0	3,926.7	20,753.6
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,813,104	14,462,880	75,394,101
17.	Gross Electrical Energy Generated (MWH)	989,400	5,009,500	26,172,600
18.	Net Electrical Energy Generated (MWH)	936,387	4,719,462	24,512,652
19.	Unit Service Factor	100.0%	44.8%	48.1%
20.	Unit Availability Factor	100.0%	44.8%	48.1%
21.	Unit Capacity Factor (Using MDC Net)	103.1%	44.1%	46.5%
22.	Unit Capacity Factor (Using DER Net)	99.1%	42.4%	44.7%
23.	Unit Forced Outage Rate	0.0%	8.9%	25.1 %

24. Shutdowns Scheduled Over Next 6 Months (Type, Date and Duration of Each): Maintenance Outage, January 12, 1991, 45 days
25. If Shutdown At End of Report Period, Estimated Date of Start-up: N/A

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

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-528
UNIT NAME PVNGS-1
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

MONTH: December 1990

DAY	AVERAGE DAILY POWER LEVEL	DAY	AVERAGE DAILY POWER LEVEL
1	1263	17	1168
2	1264	18	1262
3	1262	19	1261
4	1263	20	1260
5	1262	21	1263
6	1262	22	1265
7	1261	23	1267
8	1262	24	1265
9	1262	25	1265
10	1262	26	1265
11	1261	27	1262
12	1259	28	1254
13	1256	29	1256
14	1260	30	1260
15	1259	31	1261
16	1259		

REFUELING INFORMATION

DOCKET NO. 50-528
UNIT NAME PVNGS-1
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

1. Scheduled date for next refueling shutdown.

   02/01/92, 3rd refueling.

2. Scheduled date for restart following refueling.

   04/11/92

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

   To be determined.

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

   To be determined.

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.

   To be determined.

6. The number of fuel assemblies.

   a) In the core. 241
   b) In the spent fuel storage pool. 188

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.

   2004 (18 Month reloads and full core discharge capability).

SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO. 50-528
UNIT NAME PVNGS-1
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

December 1990

12/01	00:00	Unit began the month in Mode 1, 100% RX power.
12/17	07:22	Commenced RX power reduction due to the Core Operating Limit Supervisory System (COLSS) being inoperable. RX power stabilized at 74.5%.
12/17	17:15	RX power back at 100%.
12/31	24:00	Unit ended the month in Mode 1, 100% RX power.

SHUTDOWNS AND POWER REDUCTIONS
December 1990

DOCKET NO 50-528
UNIT NAME PVNGS-1
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

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 Recurrence
90/06	12/17/90	F	N/A	A	5	N/A	N/A	N/A	Power reduction to 74.5% due to Core Operating Limit Supervisory System (COLSS) being inoperable.

[1]F-Forced
S-Scheduled

[2]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)

[3]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)

[4]Exhibit F-Instructions for Preparation of the Data Entry Sheets for Licensee Event Report (LER) File (NUREG 0161)

[5]Exhibit H-Same Source

NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-529
UNIT NAME PVNGS-2
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 2
2. Reporting Period: December 1990
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

		This Month	Yr.-to-Date	Cumulative
11.	Hours in Reporting Period	744	8,760	37,560
12.	Number of Hours Reactor Was Critical	744.0	5,376.2	24,627.3
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator On-Line	744.0	5,276.2	24,023.4
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,809,763	19,093,048	87,721,401
17.	Gross Electrical Energy Generated (MWH)	986,800	6,657,700	30,627,570
18.	Net Electrical Energy Generated (MWH)	933,121	6,242,217	28,625,029
19.	Unit Service Factor	100.0%	60.2%	64.0%
20.	Unit Availability Factor	100.0%	60.2%	64.0%
21.	Unit Capacity Factor (Using MDC Net)	102.7%	58.4%	62.4%
22.	Unit Capacity Factor (Using DER Net)	98.8%	56.1%	60.0%
23.	Unit Forced Outage Rate	0.0%	0.0%	8.4%

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	03/86	04/18/86
INITIAL ELECTRICITY	06/86	05/20/86
COMMERCIAL OPERATION	11/86	09/19/86

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-529
UNIT NAME PVNGS-2
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

MONTH: December 1990

DAY	AVERAGE DAILY POWER LEVEL	DAY	AVERAGE DAILY POWER LEVEL
1	1259	17	1246
2	1260	18	1246
3	1261	19	1245
4	1252	20	1245
5	1246	21	1077
6	1250	22	1245
7	1251	23	1248
8	1253	24	1247
9	1252	25	1249
10	1250	26	1247
11	1250	27	1248
12	1248	28	1243
13	1242	29	1242
14	1248	30	1245
15	1246	31	1255
16	1244		

REFUELING INFORMATION

DOCKET NO. 50-529
UNIT NAME PVNGS-2
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

1. Scheduled date for next refueling shutdown.

   10/17/91, 3rd refueling.

2. Scheduled date for restart following refueling.

   12/26/91

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

   To be determined.

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

   To be determined.

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.

   To be determined.

6. The number of fuel assemblies.

   a) In the core. 241
   b) In the spent fuel storage pool. 204

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.

   2004 (18 Month reloads and full core discharge capability).

SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO. 50-529
UNIT NAME PVNGS-2
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

December 1990

12/01	00:00	Unit began the month in Mode 1, 100% RX power.
12/21	05:44	Began power reduction to 70% due to unplanned MSIV closure.
12/21	19:06	RX power back at 100%.
12/31	24:00	Unit ended the month in Mode 1, 100% RX power.

SHUTDOWNS AND POWER REDUCTIONS
December 1990

DOCKET NO 50-529
UNIT NAME PVNGS-2
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

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 Recurrence
90-10	12/21/90	F	N/A	A	5	N/A	N/A	N/A	Power reduction to 70% d[illegible] to unplanned MSIV closure.

[1]F-Forced
S-Scheduled

[2]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)

[3]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)

[4]Exhibit F-Instructions for Preparation of the Data Entry Sheets for Licensee Event Report (LER) File (NUREG 0161)

[5]Exhibit H-Same Source

NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-530
UNIT NAME PVNGS-3
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

OPERATING STATUS

1. Unit Name: Palo Verde Nuclear Generating Station, Unit 3
2. Reporting Period: December 1990
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

		This Month	Yr.-to-Date	Cumulative
11.	Hours in Reporting Period	744	8,760	26,136
12.	Number of Hours Reactor Was Critical	744.0	8,168.5	17,579.7
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator On-Line	744.0	8,049.2	17,323.2
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	2,725,831	29,195,836	63,606,227
17.	Gross Electrical Energy Generated (MWH)	959,800	10,240,500	22,308,300
18.	Net Electrical Energy Generated (MWH)	908,428	9,636,010	20,999,475
19.	Unit Service Factor	100.0%	91.9%	66.3%
20.	Unit Availability Factor	100.0%	91.9%	66.3%
21.	Unit Capacity Factor (Using MDC Net)	100.0%	90.1%	65.8%
22.	Unit Capacity Factor (Using DER Net)	96.1%	86.6%	63.3%
23.	Unit Forced Outage Rate	0.0%	8.1%	8.8%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date and Duration of Each): Refueling outage, March 16, 1991, 70 days
25. If Shutdown At End of Report Period, Estimated Date of Start-up: N/A

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

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-530
UNIT NAME PVNGS-3
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

MONTH: December 1990

DAY	AVERAGE DAILY POWER LEVEL	DAY	AVERAGE DAILY POWER LEVEL
1	1272	17	1272
2	1271	18	1273
3	1270	19	1274
4	1271	20	1268
5	1275	21	1272
6	1273	22	1273
7	1269	23	1273
8	1270	24	1272
9	1270	25	1222
10	1270	26	438
11	1271	27	666
12	1268	28	1238
13	1266	29	1266
14	1270	30	1271
15	1270	31	1269
16	1268		

REFUELING INFORMATION

DOCKET NO. 50-530
UNIT NAME PVNGS-3
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

1. Scheduled date for next refueling shutdown.

   03/16/91, 2nd refueling.

2. Scheduled date for restart following refueling.

   05/25/91

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

   To be determined.

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

   To be determined.

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.

   To be determined.

6. The number of fuel assemblies.

   a) In the core. 241
   b) In the spent fuel storage pool. 104

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. 50-530
UNIT NAME PVNGS-3
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

December 1990

12/01	00:00	Unit began the month in Mode 1, 100% RX power.
12/25	20:00	Commenced RX power reduction to 40% to repair a condenser tube leak.
12/28	04:51	RX power back at 100%.
12/31	24:00	Unit ended the month in Mode 1, 100% RX power.

SHUTDOWNS AND POWER REDUCTIONS
December 1990

DOCKET NO 50-530
UNIT NAME PVNGS-3
DATE 1/9/91
COMPLETED BY K.A. Chavet
TELEPHONE (602) 340-4718

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 Recurrence
90/13	12/25/90	F	N/A	A	5	N/A	N/A	N/A	Power reduction to 40% d to condenser tube leak.

[1]F-Forced
S-Scheduled

[2]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)

[3]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)

[4]Exhibit F-Instructions for Preparation of the Data Entry Sheets for Licensee Event Report (LER) File (NUREG 0161)

[5]Exhibit H-Same Source