

NRC MONTHLY OPERATING REPORT

DOCKET NO: 50-361
UNIT NAME: SONGS - 2
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

OPERATING STATUS

1. Unit Name: San Onofre Nuclear Generating Station, Unit 2
2. Reporting Period: November 1990
3. Licensed Thermal Power (Mwt): 3390
4. Nameplate Rating (Gross MWe): 1127
5. Design Electrical Rating (Net MWe): 1070
6. Maximum Dependable Capacity (Gross MWe): 1127
7. Maximum Dependable Capacity (Net MWe): 1070
8. If Changes Occur In Capacity Ratings (Items Number 3 Through 7)
Since Last Report, Give Reasons: NA
9. Power Level To Which Restricted, If Any (Net MWe): NA
10. Reasons For Restrictions, If Any: NA

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>720.00</u>	<u>8,016.00</u>	<u>63,889.00</u>
12. Number Of Hours Reactor Was Critical	<u>618.50</u>	<u>7,052.35</u>	<u>46,119.19</u>
13. Reactor Reserve Shutdown Hours	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
14. Hours Generator On-Line	<u>607.13</u>	<u>7,019.02</u>	<u>45,162.05</u>
15. Unit Reserve Shutdown Hours	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,959,295.69</u>	<u>23,399,263.04</u>	<u>147,334,292.35</u>
17. Gross Electrical Energy Generated (MWH)	<u>670,078.00</u>	<u>8,001,662.50</u>	<u>49,976,369.50</u>
18. Net Electrical Energy Generated (MWH)	<u>634,465.00</u>	<u>7,614,811.00</u>	<u>47,357,655.24</u>
19. Unit Service Factor	<u>84.32%</u>	<u>87.56%</u>	<u>70.69%</u>
20. Unit Availability Factor	<u>84.32%</u>	<u>87.56%</u>	<u>70.69%</u>
21. Unit Capacity Factor (Using MDC Net)	<u>82.36%</u>	<u>88.78%</u>	<u>69.28%</u>
22. Unit Capacity Factor (Using DER Net)	<u>82.36%</u>	<u>88.78%</u>	<u>69.28%</u>
23. Unit Forced Outage Rate	<u>15.68%</u>	<u>2.47%</u>	<u>6.06%</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):	<u>NA</u>		
25. If Shutdown At End Of Report Period, Estimated Date of Startup:	<u>NA</u>		
26. Units In Test Status (Prior To Commercial Operation):	Forecast	Achieved	

INITIAL CRITICALITY
INITIAL ELECTRICITY
COMMERCIAL OPERATION

<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>

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AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-361
UNIT NAME: SONGS - 2
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

MONTH: November 1990

DAY AVERAGE DAILY POWER LEVEL (MWe-Net)

1	<u>1099.02</u>
2	<u>1091.75</u>
3	<u>1100.79</u>
4	<u>1011.25</u>
5	<u>1100.67</u>
6	<u>1103.58</u>
7	<u>1107.17</u>
8	<u>1102.08</u>
9	<u>1103.46</u>
10	<u>1091.25</u>
11	<u>1104.75</u>
12	<u>1071.46</u>
13	<u>1096.50</u>
14	<u>1080.71</u>
15	<u>1100.75</u>
16	<u>1079.50</u>

DAY AVERAGE DAILY POWER LEVEL (MWe-Net)

17	<u>805.75</u>
18	<u>872.13</u>
19	<u>1103.08</u>
20	<u>1099.58</u>
21	<u>1102.42</u>
22	<u>1103.79</u>
23	<u>883.38</u>
24	<u>0.00</u>
25	<u>0.00</u>
26	<u>0.00</u>
27	<u>0.00</u>
28	<u>158.96</u>
29	<u>935.54</u>
30	<u>1099.00</u>

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO: 50-361

UNIT NAME: SONGS - 2

REPORT MONTH: November 1990

DATE: 12/17/90

COMPLETED BY: M. M. Farr

TELEPHONE: (714) 368-9787

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	LER No.	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
60	901117	S	0.00	B	5	NA	KE	COND	Reduced power to 80% to support condenser water box cleaning.
61	901123	F	112.87	A	1	NA	AA	CON	See note below.

Note: Reactor was shutdown from 100% power to perform troubleshooting and repair of degraded resistance on the output of the control element drive mechanism (CEDM) motor-generator set. The degraded resistance was isolated to 7 CEDM circuits in two electrical penetrations and involved non-environmentally qualified multi-pin connectors which connect the containment penetration conductors to the in-containment CEDM circuitry. The internals of these connectors were found to have moisture and pre-existing corrosion. Moisture most likely was introduced during actuation of the Containment Spray System on 11/20/90 (see LER 2-90-014, Docket No. 50-361 for details), since these connectors were all top mounted and exposed to direct impingement of the spray. The moisture combined with the corrosion led to the degraded resistance. All the top mounted connectors for the CEDM system were disassembled, cleaned, and repaired as appropriate.

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 (Explain)
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
6-Other (Explain)

⁴IEEE Std 805-1984

⁵IEEE Std 803A-1983

SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO: 50-361
UNIT NAME: SONGS - 2
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

<u>Date</u>	<u>Time</u>	<u>Event</u>
November 1	0001	Unit is in Mode 1 at 100% reactor power. Turbine load at 1150 MWe gross.
November 4	0200	Commenced reactor power decrease to 80% to bump circulating water pumps P-115 and P-117.
	0550	Reactor at 80% power. Bumped circulating water pumps.
	1043	Commenced reactor power increase to 100%.
	1443	Reactor at 100% power.
November 7	0047	Unusual Event declared due to fire on west side of Interstate 5.
	1430	Unusual Event terminated.
November 12	2000	Commenced reactor power decrease to 80% to bump circulating water pump P-117.
	2200	Reactor at 80% power. Bumped circulating water pump.
	2330	Commenced reactor power increase to 100%.
November 13	0200	Reactor at 100% power.
November 16	2100	Commenced reactor power decrease to 75% to support condenser water box cleaning.
November 17	0730	Reactor at 76% power. Commenced condenser water box cleaning.
November 18	1700	Commenced reactor power increase to 100% following completion of condenser water box cleaning.
	2136	Reactor at 100% power.

SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO: 50-361
UNIT NAME: SONGS - 2
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COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

<u>Date</u>	<u>Time</u>	<u>Event</u>
November 20	0946	Received inadvertent SIAS, CSAS and CCAS actuation during Plant Protection System (PPS) matrix testing.
	1029	Completed reset of SIAS, CCAS, and CSAS and restoration of actuated equipment.
November 23	1625	Commenced reactor power shutdown to Mode 3 due to ground indication on CEDM.
	2130	Manually tripped main turbine.
	2138	Manually tripped reactor, entered Mode 3.
November 28	0251	Entered Mode 2 following CEDM repairs.
	0308	Reactor made critical.
	0602	Entered Mode 1.
	1422	Synchronized unit to the grid.
November 29	0730	Maintaining reactor at 80% power for circulating water system heat treatment.
	1100	Commenced reactor power increase to 100% following completion of heat treating operations.
November 30	2400	Unit is in Mode 1 at 100% reactor power. Turbine load at 1150 MWe.

REFUELING INFORMATION

DOCKET NO:	<u>50-361</u>
UNIT NAME:	<u>SONGS - 2</u>
DATE:	<u>12/17/90</u>
COMPLETED BY:	<u>M. M. Farr</u>
TELEPHONE:	<u>(714) 368-9787</u>

MONTH: November 1990

1. Scheduled date for next refueling shutdown.

Cycle 6 refueling outage is forecast for July 1991.

2. Scheduled date for restart following refueling.

Restart from Cycle 6 refueling outage is forecast for October 1991.

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

No.

What will these be?

Not applicable.

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

Not applicable.

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, new operating procedures.

None.

REFUELING INFORMATION

DOCKET NO: 50-361
UNIT NAME: SONGS - 2
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

MONTH: November 1990

6. The number of fuel assemblies.

a) In the core. 217

b) In the spent fuel storage pool. 446 (376 Unit 2 Spent
Fuel Assemblies and 70
Unit 1 Spent Fuel
Assemblies

7. Licensed spent fuel storage capacity. 1542 *

Intended change in spent fuel storage capacity. None

* Expanded from 800 to 1542 by License Amendment No. 87 - Facility modification is scheduled to be completed by December 1990.

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

Approximately 2001 (full off load capability)

NRC MONTHLY OPERATING REPORT

DOCKET NO: 50-362
 UNIT NAME: SONGS - 3
 DATE: 12/17/90
 COMPLETED BY: M. M. Farr
 TELEPHONE: (714) 368-9787

OPERATING STATUS

1. Unit Name: San Onofre Nuclear Generating Station, Unit 3
2. Reporting Period: November 1990
3. Licensed Thermal Power (Mwt): 3390
4. Nameplate Rating (Gross MWe): 1127
5. Design Electrical Rating (Net MWe): 1080
6. Maximum Dependable Capacity (Gross MWe): 1127
7. Maximum Dependable Capacity (Net MWe): 1080
8. If Changes Occur In Capacity Ratings (Items Number 3 Through 7)
Since Last Report, Give Reasons: NA
9. Power Level To Which Restricted, If Any (Net MWe): NA
10. Reasons For Restrictions, If Any: NA

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>720.00</u>	<u>8,016.00</u>	<u>58,440.00</u>
12. Number Of Hours Reactor Was Critical	<u>720.00</u>	<u>5,553.69</u>	<u>43,483.97</u>
13. Reactor Reserve Shutdown Hours	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
14. Hours Generator On-Line	<u>720.00</u>	<u>5,416.41</u>	<u>42,232.49</u>
15. Unit Reserve Shutdown Hours	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,426,677.57</u>	<u>17,916,377.48</u>	<u>133,784,134.02</u>
17. Gross Electrical Energy Generated (MWH)	<u>832,386.50</u>	<u>6,100,935.50</u>	<u>45,385,647.00</u>
18. Net Electrical Energy Generated (MWH)	<u>792,117.00</u>	<u>5,758,361.13</u>	<u>42,800,472.33</u>
19. Unit Service Factor	<u>100.00%</u>	<u>67.57%</u>	<u>72.27%</u>
20. Unit Availability Factor	<u>100.00%</u>	<u>67.57%</u>	<u>72.27%</u>
21. Unit Capacity Factor (Using MDC Net)	<u>101.87%</u>	<u>66.51%</u>	<u>67.81%</u>
22. Unit Capacity Factor (Using DER Net)	<u>101.87%</u>	<u>66.51%</u>	<u>67.81%</u>
23. Unit Forced Outage Rate	<u>0.00%</u>	<u>9.29%</u>	<u>7.90%</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):	<u>NA</u>		
25. If Shutdown At End Of Report Period, Estimated Date of Startup:	<u>NA</u>		
26. Units In Test Status (Prior To Commercial Operation):	Forecast	Achieved	

INITIAL CRITICALITY
 INITIAL ELECTRICITY
 COMMERCIAL OPERATION

<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-361
UNIT NAME: SONGS - 3
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

MONTH: November 1990

DAY AVERAGE DAILY POWER LEVEL (MWe-Net)

1	<u>1104.25</u>
2	<u>1104.29</u>
3	<u>1095.79</u>
4	<u>1103.54</u>
5	<u>1100.50</u>
6	<u>1103.08</u>
7	<u>1108.42</u>
8	<u>1107.71</u>
9	<u>1093.33</u>
10	<u>1106.25</u>
11	<u>1106.54</u>
12	<u>1105.88</u>
13	<u>1102.42</u>
14	<u>1107.29</u>
15	<u>1109.38</u>
16	<u>1094.88</u>

DAY AVERAGE DAILY POWER LEVEL (MWe-Net)

17	<u>1108.00</u>
18	<u>1107.71</u>
19	<u>1107.46</u>
20	<u>1107.29</u>
21	<u>1107.08</u>
22	<u>1106.96</u>
23	<u>1101.79</u>
24	<u>1076.92</u>
25	<u>1104.92</u>
26	<u>1105.46</u>
27	<u>1107.50</u>
28	<u>1095.17</u>
29	<u>1019.71</u>
30	<u>1097.67</u>

UNIT SHUTDOWNS AND POWER REDUCTIONS DOCKET NO: 50-362 1106.96

REPORT MONTH: November 1990

UNIT NAME: SONGS - 3

DATE: 12/17/90 1101.79

COMPLETED BY: M. M. Farr

TELEPHONE: (714) 368-9787 1076.92

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	LER No.	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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 (Explain)
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
6-Other (Explain)

⁴IEEE Std 805-1984

⁵IEEE Std 803A-1983

DOCKET NO: 50-362
UNIT NAME: SONGS - 3
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

<u>Date</u>	<u>Time</u>	<u>Event</u>
November 1	0001	Unit is in Mode 1 at 100% reactor power. Turbine load at 1150 MWe gross.
November 7	0047	Unusual Event declared due to fire on west side of Interstate 5.
	1430	Unusual Event terminated.
November 29	0232	Commenced reactor power decrease to 93% due to High Pressure Governor Valve 3UV-2200G failing closed.
	0335	Reactor at 93% power.
	1930	Commenced reactor power increase to 100% following return to service of High Pressure Governor Valve 3UV-2200G.
	2130	Reactor at 100% Power.
November 30	2400	Unit is in Mode 1 at 100% reactor power. Turbine load at 1158 MWe gross.

REFUELING INFORMATION

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UNIT NAME: SONGS - 3
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

MONTH: November 1990

1. Scheduled date for next refueling shutdown.

Cycle 6 refueling outage is forecast for January 1992.

2. Scheduled date for restart following refueling.

Restart from Cycle 6 refueling outage is forecast for April 1992.

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

Not yet specifically determined. Under evaluation.

What will these be?

Not yet specifically determined. Under evaluation.

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

Not yet specifically determined. Under evaluation.

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, new operating procedures.

Not yet specifically determined. Under evaluation.

REFUELING INFORMATION

DOCKET NO: 50-362
UNIT NAME: SONGS - 3
DATE: 12/17/90
COMPLETED BY: M. M. Farr
TELEPHONE: (714) 368-9787

MONTH: November 1990

6. The number of fuel assemblies.

a) In the core. 217

b) In the spent fuel storage pool. 445 (376 Unit 3 Spent
Fuel Assemblies and 69
Unit 1 Spent Fuel
Assemblies

7. Licensed spent fuel storage capacity. 1542 *

Intended change in spent fuel storage capacity. None

* Expanded from 800 to 1542 by License Amendment No. 77 - Facility modification is scheduled to be completed by September 1991.

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

Approximately 2003 (full off load capability)