

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8801200355 DOC.DATE: 87/12/31 NOTARIZED: NO DOCKET #  
 FACIL:50-361 San Onofre Nuclear Station, Unit 2, Southern Californ 05000361  
 50-362 San Onofre Nuclear Station, Unit 3, Southern Californ 05000362  
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 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: Monthly operating repts for Dec 1987.W/880115 ltr.

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# NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-361  
 UNIT SONGS - 2  
 DATE January 15, 1988  
 COMPLETED BY E. R. Siacor  
 TELEPHONE (714) 368-6223

## OPERATING STATUS

1. Unit Name: San Onofre Nuclear Generating Station, Unit 2
2. Reporting Period: December 1987
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>744.00</u>	<u>8,760.00</u>	<u>38,329.00</u>
12. Number Of Hours Reactor Was Critical	<u>521.93</u>	<u>6,192.53</u>	<u>25,553.68</u>
13. Reactor Reserve Shutdown Hours	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
14. Hours Generator On-Line	<u>430.17</u>	<u>6,068.34</u>	<u>24,945.85</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>1,057,352.47</u>	<u>19,339,702.77</u>	<u>80,161,125.27</u>
17. Gross Electrical Energy Generated (MWH)	<u>343,453.50</u>	<u>6,570,667.00</u>	<u>26,986,461.50</u>
18. Net Electrical Energy Generated (MWH)	<u>311,568.89</u>	<u>6,233,340.79</u>	<u>25,518,746.34</u>
19. Unit Service Factor	<u>57.82%</u>	<u>69.27%</u>	<u>65.08%</u>
20. Unit Availability Factor	<u>57.82%</u>	<u>69.27%</u>	<u>65.08%</u>
21. Unit Capacity Factor (Using MDC Net)	<u>39.14%</u>	<u>66.50%</u>	<u>62.22%</u>
22. Unit Capacity Factor (Using DER Net)	<u>39.14%</u>	<u>66.50%</u>	<u>62.22%</u>
23. Unit Forced Outage Rate	<u>7.69%</u>	<u>1.93%</u>	<u>4.63%</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):	<u>NA</u>		

25. If Shut Down At End Of Report Period, Estimated Date of Startup: NA

26. Units In Test Status (Prior To Commercial Operation):

Forecast

Achieved

INITIAL CRITICALITY  
 INITIAL ELECTRICITY  
 COMMERCIAL OPERATION

NA

NA

NA

NA

NA

NA

7435u.rpt/3

*Est. 1*

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-361  
 UNIT SONGS - 2  
 DATE January 15, 1988  
 COMPLETED BY E. R. Siacor  
 TELEPHONE (714) 368-6223

MONTH December 1987

DAY AVERAGE DAILY POWER LEVEL  
 (MWe-Net)

1	0.00
2	0.00
3	0.00
4	0.00
5	0.00
6	0.00
7	0.00
8	0.00
9	0.00
10	0.00
11	0.00
12	12.50
13	287.79
14	670.00
15	698.54
16	535.63

DAY AVERAGE DAILY POWER LEVEL  
 (MWe-Net)

17	244.92
18	0.00
19	443.96
20	646.92
21	755.00
22	785.04
23	818.38
24	849.88
25	832.83
26	812.33
27	823.71
28	877.04
29	1056.21
30	1111.96
31	1106.25

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH DECEMBER 1987

DOCKET NO. 50-361  
UNIT NAME SONGS - 2  
DATE January 15, 1988  
COMPLETED BY E. R. Siacor  
TELEPHONE (714) 368-6223

No.	Date	Type <sup>1</sup>	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 & Corrective Action to Prevent Recurrence
37	870829	S	278.00	C	4	NA	NA	NA	Cycle 4 Refueling Outage.
38	871216	S	0.00	B	5	NA	NA	NA	Power reduction to support power ascension testing for shape annealing matrix.

<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 (Explain)  
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  
6-Other (Explain)

<sup>4</sup>IEEE Std 805-1984

<sup>5</sup>IEEE Std 803A-1983

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH DECEMBER 1987

DOCKET NO. 50-361  
UNIT NAME SONGS - 2  
DATE January 15, 1988  
COMPLETED BY E. R. Siacor  
TELEPHONE (714) 368-6223

No.	Date	Type <sup>1</sup>	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 & Corrective Action to Prevent Recurrence
39	871217	F	35.83	A	2	87-031	SJ	ISV	Reactor was manually tripped after both main feedwater pumps indicated to have tripped due to closure of main feedwater isolation valve 2HV-4048. Closure of 2HV-4048 was caused by loss of power to its associated solenoid valve due to corrosion of the terminal connectors. Moisture intrusion into the terminal box due to inadequate tightening of the conduit connections resulted in the observed corrosion. As corrective action, the terminal connections have been replaced and the conduit connections have been properly tightened and sealed.

<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 (Explain)  
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  
6-Other (Explain)

<sup>4</sup>IEEE Std 805-1984

<sup>5</sup>IEEE Std 803A-1983

# SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO.	50-361
UNIT	SONGS - 2
DATE	January 15, 1988
COMPLETED BY	E. R. Siacor
TELEPHONE	(714) 368-6223

<u>Date</u>	<u>Time</u>	<u>Event</u>
December 1	0001	Unit is in Mode 5, day 95 of Cycle 4 refueling outage.
December 2	1856	Entered Mode 4.
December 5	2318	Entered Mode 3.
December 9	0652	Entered Mode 2.
	1200	Reactor made critical.
December 12	0213	Entered Mode 1.
	1400	Unit synchronized to the grid. Commencing power increase to 30% for reactor physics testing.
December 13	0530	Reactor physics testing at 30% power completed.
December 14	0700	Reactor power increased to 68% power for the next power plateau for reactor physics testing.
December 15	2200	Commenced power reduction to 50% to support power ascension testing for shape annealing matrix.
December 16	0140	Reactor at 50% power.
	1321	Commenced power increase to 68% following completion of shape annealing matrix testing.
	1810	Reactor at 68% power.
	1900	Commenced power increase to 75% following completion of reactor physics testing.
December 17	0545	Reactor at 75% power.
	0830	Reactor tripped manually due to loss of feedwater flow. Entered Mode 3. Commenced inspection and repairs to main feedwater isolation valve 2HV-4048.

# SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO.	50-361
UNIT	SONGS - 2
DATE	January 15, 1988
COMPLETED BY	E. R. Siacor
TELEPHONE	(714) 368-6223

<u>Date</u>	<u>Time</u>	<u>Event</u>
December 18	0201	Entered Mode 2 following completion of repairs to 2HV-4048.
	0234	Reactor made critical.
	1613	Entered Mode 1.
	2020	Unit synchronized to the grid. Gradually increasing power to 75%.
December 21	1200	Reactor at 75% power and maintained at approximately 75% pending return to service of circulating water pump P-117.
December 23	0530	Commenced power increase following return to service of P-117.
	1015	Reactor at 80% power.
	1745	Reactor power reduced to 75% due to heavy influx of seaweed into the circulating water system.
December 24	0244	Commenced power increase to 80% to perform heat treating of the intake structure.
	0344	Reactor at 80% power.
December 28	0420	Commenced bumping all four circulating water pumps.
	0603	Bumping of circulating water pumps completed.
	0815	Commenced power increase to 100%.
December 29	2107	Reactor at 100% power.
December 31	2400	Unit is in Mode 1 at 100% reactor power. Turbine load at 1141 MWe gross.

## REFUELING INFORMATION

MONTH: December 1987

DOCKET NO. 50-361  
UNIT SONGS - 2  
DATE January 15, 1988  
COMPLETED BY E. R. Siacor  
TELEPHONE (714) 368-6223

1. Scheduled date for next refueling shutdown.  
August 1989
2. Scheduled date for restart following refueling.  
October 1989
3. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment?  
Not yet determined  
What will these be?  
Not yet determined
4. Scheduled date for submitting proposed licensing action and supporting information.  
Not yet 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, new operating procedures.  
Not yet determined
6. The number of fuel assemblies.
  - a) In the core. 217
  - b) In the spent fuel storage pool. 268
7. Licensed spent fuel storage capacity. 800  
Intended change in spent fuel storage capacity. Under Review
8. Projected date of last refueling that can be discharged to spent fuel storage pool assuming present capacity.  
Approximately 1997 (refueling only)  
Approximately 1993 (full off load capability)



# NRC MONTHLY OPERATING REPORT

DOCKET NO. 50-362  
 UNIT SONGS - 3  
 DATE January 15, 1988  
 COMPLETED BY E. R. Siacor  
 TELEPHONE (714) 368-6223

## OPERATING STATUS

1. Unit Name: San Onofre Nuclear Generating Station, Unit 3
2. Reporting Period: December 1987
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	744.00	8,760.00	32,880.00
12. Number Of Hours Reactor Was Critical	744.00	7,135.29	23,747.97
13. Reactor Reserve Shutdown Hours	0.00	0.00	0.00
14. Hours Generator On-Line	744.00	6,987.87	22,874.20
15. Unit Reserve Shutdown Hours	0.00	0.00	0.00
16. Gross Thermal Energy Generated (MWH)	2,516,114.06	23,197,610.48	69,601,395.82
17. Gross Electrical Energy Generated (MWH)	867,473.00	7,915,666.50	23,477,901.00
18. Net Electrical Energy Generated (MWH)	842,321.00	7,519,728.05	22,087,664.47
19. Unit Service Factor	100.00%	79.77%	69.57%
20. Unit Availability Factor	100.00%	79.77%	69.57%
21. Unit Capacity Factor (Using MDC Net)	104.83%	79.48%	62.20%
22. Unit Capacity Factor (Using DER Net)	104.83%	79.48%	62.20%
23. Unit Forced Outage Rate	0.00%	1.86%	9.53%
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): Cycle 4 Refueling Outage, April 23, 1988, 80-day duration			

25. If Shut Down At End Of Report Period, Estimated Date of Startup: NA
26. Units In Test Status (Prior To Commercial Operation):

Forecast      Achieved

INITIAL CRITICALITY  
 INITIAL ELECTRICITY  
 COMMERCIAL OPERATION

NA	NA
NA	NA
NA	NA

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-362  
 UNIT SONGS - 3  
 DATE January 15, 1988  
 COMPLETED BY E. R. Siacor  
 TELEPHONE (714) 368-6223

MONTH December 1987

DAY AVERAGE DAILY POWER LEVEL  
 (MWe-Net)

1	1108.79
2	1108.96
3	1108.58
4	1108.04
5	1099.08
6	1108.63
7	1108.38
8	1108.96
9	1101.83
10	1107.17
11	1092.29
12	1060.08
13	1113.79
14	1117.42
15	1116.63
16	1116.17

DAY AVERAGE DAILY POWER LEVEL  
 (MWe-Net)

17	1116.67
18	1090.04
19	1112.46
20	1114.58
21	1112.00
22	1114.00
23	1113.17
24	1109.67
25	1106.67
26	1113.29
27	1113.08
28	1114.42
29	1114.46
30	1110.88
31	1106.54

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH DECEMBER 1987

DOCKET NO. 50-362  
UNIT NAME SONGS - 3  
DATE January 15, 1988  
COMPLETED BY E. R. Siacor  
TELEPHONE (714) 368-6223

No.	Date	Type <sup>1</sup>	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 & Corrective Action to Prevent Recurrence
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

<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 (Explain)  
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  
6-Other (Explain)

<sup>4</sup>IEEE Std 805-1984

<sup>5</sup>IEEE Std 803A-1983

# SUMMARY OF OPERATING EXPERIENCE FOR THE MONTH

DOCKET NO.	50-362
UNIT	SONGS - 3
DATE	January 15, 1988
COMPLETED BY	E. R. Siacor
TELEPHONE	(714) 368-6223

<u>Date</u>	<u>Time</u>	<u>Event</u>
December 1	0001	Unit is in Mode 1 at 100% reactor power. Turbine load at 1159 MWe gross.
December 11	2110	Commenced power reduction to 85% to allow bumping of circulating water pumps.
	2300	Reactor power at 85%.
December 12	0425	Commenced power increase to 100% following bumping of circulating water pumps.
	0705	Reactor power at 100%.
December 31	2400	Unit is in Mode 1 at 100% reactor power. Turbine load at 1161 MWe gross.

## REFUELING INFORMATION

MONTH: December 1987

DOCKET NO.	50-362
UNIT	SONGS - 3
DATE	January 15, 1988
COMPLETED BY	E. R. Siacor
TELEPHONE	(714) 368-6223

1. Scheduled date for next refueling shutdown.  
April 23, 1988
2. Scheduled date for restart following refueling.  
July 11, 1988
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.  
Not applicable
6. The number of fuel assemblies.
  - a) In the core. 217
  - b) In the spent fuel storage pool. 160
7. Licensed spent fuel storage capacity. 800  
Intended change in spent fuel storage capacity. Under Review
8. Projected date of last refueling that can be discharged to spent fuel storage pool assuming present capacity.  
Approximately 1997 (refueling only)  
Approximately 1993 (full off load capability)



***Southern California Edison Company***

SAN ONOFRE NUCLEAR GENERATING STATION

P. O. BOX 128

SAN CLEMENTE, CALIFORNIA 92672

H. E. MORGAN  
STATION MANAGER

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January 15, 1988

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Subject: Docket Nos. 50-361/50-362  
Monthly Operating Reports for December 1987  
San Onofre Nuclear Generating Station, Units 2 and 3

Enclosed are the Monthly Operating Reports as required by Section 6.9.1.10 of Appendix A, Technical Specifications to Facility Operating Licenses NPF-10 and NPF-15 for San Onofre Nuclear Generating Station, Units 2 and 3, respectively.

Please contact us if we can be of further assistance.

Sincerely,

Enclosures

cc: J. B. Martin (Regional Administrator, USNRC Region V)  
F. R. Huey (USNRC Senior Resident Inspector, Units 1, 2 and 3)  
Institute of Nuclear Power Operations (INPO)

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