



ENTERGY

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Grand Gulf Nuclear Station

February 28, 1992

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
1991 Annual Operating Report

GNRO-92/00014

Gentlemen:

Entergy Operations, Inc. is transmitting the Grand Gulf Nuclear Station (GGNS) Unit 1 Annual Operating Report for 1991. This report is in accordance with the reporting program described in Regulatory Guide 1.16, Revision 4, Part C.1.b as modified by the NRC letter to GGNS dated May 25, 1987 (MAEC-87/0131).

Provided as attachments are:

1. A narrative summary of operating experience during the year 1991,
2. Main Steam Line Safety Relief Valve challenges,
3. A tabulated annual report of personnel exposure greater than 100 mrem/yr, and
4. A summary of failed fuel indications/inspections.

Yours truly,

WTC/TKM/cg
attachments:
cc: (See Next Page)

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February 28, 1992

GNRO-92/00014

Page 2 of 3

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Summary of Operating Experience 1991

The following is a summary of Grand Gulf Nuclear Station (GGNS) Unit 1 operating experience for the 1991 calendar year. During 1991, the reactor was critical for 8,230.3 hours with the generator on line for 8036.7 hours.

On February 13, 1991, a runback of Reactor Recirculation Flow Control Valve "A" occurred. This corresponded to a 14% reactor power reduction. The problem was traced to a circuit card which was replaced and retested. The plant returned to 100% power two hours after the event.

On March 8, 1991, reactor power was reduced to 70% at the request of the system dispatcher.

The plant had been on-line 96 consecutive days prior to a reactor scram which occurred on April 6, 1991 (LER 91-002-01), during the Automatic Turbine Testing (ATT) Turbine Overspeed Trip Test Surveillance. The scram was due to failure of the test circuitry power supply module, which caused a main turbine trip. The module was replaced and the generator was synchronized at 1603 hours on April 7, 1991.

Reactor power was decreased to 62% on April 30, 1991 to perform an investigation of an increase in Steam Tunnel temperature. It was determined that a reactor water cleanup instrument line and a flow element gasket were leaking and reactor power was reduced to 50% on May 1 for the repair activity. Reactor power was returned to 100% on May 3, 1991.

During a controlled shutdown on June 11, 1991 to replace the recirculation pump seals, the reactor scrammed at 1840 hours (LER 91-004). The scram was caused by a loss of condensate/feedwater flow resulting from condensate minimum flow control valve failure. New seals were installed on "A" and "B" reactor recirculation pumps and the generator was synchronized at 0856 hours on June 16, 1991.

On June 17, 1991 at 0935 hours, the unit tripped as a result of a "B" phase 500 kV switchyard circuit breaker ground fault and subsequent service transformer lockout (LER 91-005-01). Corrective actions were taken and the generator was synchronized June 19, 1991 at 0421 hours.

On June 25, 1991, a DIV II RWCU isolation occurred due to a voltage surge resulting from a lightning strike to an incoming 500 KV line (LER 91-006). The RWCU system was reset and RWCU pumps restarted.

On July 28, 1991, the reactor scrammed from a Turbine Control Valve (TCV) fast closure due to load shed of BOP buses (LER 91-007). A design fault was found in LSS panels. The Division I and II LSS panels were modified and the generator was synchronized August 6, 1991 at 2013 hours.

The reactor scrammed from 100% power August 10, 1991 at 1906 hours (LER 91-010). This scram was caused by a lightning induced spike on APRMs. The generator was synchronized August 12, 1991 at 0649 hours.

Summary of Operating Experience 1991

The plant had been on line 99 days when an automatic reactor scram occurred November 19, 1991 (LER 91-012). The scram was a result of an APRM spike due to a lightning strike. A task force investigated Grand Gulf's susceptibility to lightning strikes. The generator was synchronized at approximately 2310 hours on November 23.

On December 6, 1991, the Division II LSS Panel power supply failed. The 15 and 24 volt power supplies were replaced. The panel was retested and restored to operable status.

On December 29, 1991 power was reduced to cold shutdown for replacement of "B" recirculation Pump Shaft. B21-F803 feedwater check valve failed its leak check surveillance. This valve was inspected and work completed. During system realignment, valve E12-F004A would not stroke due to thermal binding. Reactor coolant temperature was decreased and the valve was successfully opened. The plant returned to power January 10, 1992.

MAIN STEAM SAFETY RELIEF VALVE CHALLENGES 1991

This section contains a summary of main steam line safety relief valve challenges which occurred during 1991 as reported in the GGNS Monthly Operating Reports for that period.

The summaries were originally included in the following monthly reports:

<u>June 1991 Report</u>	-	GNRO-91/00121	-	dated: <u>July 10, 1991</u>
<u>July 1991 Report</u>	-	GNRO-91/00144	-	dated: <u>August 14, 1991</u>

MAIN STEAM SAFETY RELIEF VALVE CHALLENGES 1991

DOCKET NO.	<u>50-416</u>
UNIT	<u>1</u>
COMPLETED BY	<u>T. K. Murray</u>
TELEPHONE	<u>(601) 437-2401</u>

Date of Occurrence: June 17, 1991

Plant Operating Condition:

Rx Thermal Power 73.7% Rx Pressure (psig) 999 Rx Mode 1

Rx Power (MWE) 862 Rx Temperatures 540⁰F

Number of mainsteam line SRVs: 20

Number of SRVs affected by event: 5

Narrative:

On June 17, 1991, a ground fault on the B Phase of Circuit Breaker J1532 caused a lock out on Service Transformer 11.

There were no automatic SRV actuations. These SRVs were manually operated: SRV B21-F041K actuated 3 times. The following SRVs actuated once: B21-F051D, B21-F041E, B21-F047L and B21-F047D.

MAIN STEAM SAFETY RELIEF VALVE CHALLENGES 1991

DOCKET NO. 50-416
UNIT 1
COMPLETED BY T. K. Murray
TELEPHONE (601) 437-2401

Date of Occurrence: July 28, 1991

Plant Operating Condition:

Rx Thermal Power 100% Rx Pressure (psig) 1046.7 Rx Mode 1

Rx Power (MWE) 1220 Rx Temperatures 540⁰F

Number of mainsteam line SRVs: 20

Number of SRVs affected by event: 11

Narrative:

On July 28, 1991, a reactor scram occurred from Turbine Control Valve fast closure due to loss of power to the turbine control fluid pumps (EHC). The loss of power resulted from an inadvertent Division II LSS load shed.

The following SRV's actuated automatically once:

B21-F047A, B21-F047C, B21-F047D, B21-F047G, B21-F047H, B21-F047L,
B21-F051A, B21-F051B, B21-F051D, B21-F051F, and B21-F051K.

GGNS UNIT 1 ANNUAL REPORT

MAN-REM EXPOSURE - 1991

This section contains a tabulation of the number of station, utility and other personnel receiving exposures greater than 100 mrem/yr and their associated Man-Rem exposure according to work and job function. Also included is a tabulation of the number of personnel by exposure range.

ENERGY OPERATIONS, INC.
PERSONNEL AND MAN-REM BY WORK AND DUTY FUNCTION FINAL END OF THE YEAR REPORT FOR 1991

	NUMBER OF PERSONNEL OVER 100 MREM			TOTAL MAN-REM		
	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS AND OTHERS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS AND OTHERS
REACTOR OPS/SURVEILLANCE						
MAINTENANCE	5	0	0	0.032	0.000	0.000
OPERATIONS	52	0	5	12.039	0.000	0.188
HEALTH PHYSICS	36	0	4	8.507	0.000	1.386
SUPERVISORY	5	0	1	0.206	0.000	0.026
ENGINEERING	3	0	1	0.219	0.000	0.002
ROUTINE MAINTENANCE						
MAINTENANCE	128	0	59	38.647	0.000	26.982
OPERATIONS	14	0	3	0.407	0.000	0.061
HEALTH PHYSICS	29	0	2	4.096	0.000	0.364
SUPERVISORY	6	0	1	1.082	0.000	0.220
ENGINEERING	2	0	1	0.241	0.000	0.113
IN-SERVICE INSPECTION						
MAINTENANCE	0	0	0	0.000	0.000	0.000
OPERATIONS	0	0	0	0.000	0.000	0.000
HEALTH PHYSICS	0	0	0	0.000	0.000	0.000
SUPERVISORY	0	0	0	0.000	0.000	0.000
ENGINEERING	0	0	0	0.000	0.000	0.000
SPECIAL MAINTENANCE						
MAINTENANCE	0	0	0	0.000	0.000	0.000
OPERATIONS	0	0	0	0.000	0.000	0.000
HEALTH PHYSICS	0	0	0	0.000	0.000	0.000
SUPERVISORY	0	0	0	0.000	0.000	0.000
ENGINEERING	0	0	0	0.000	0.000	0.000
WASTE PROCESSING						
MAINTENANCE	69	0	8	1.796	0.000	0.294
OPERATIONS	1	0	6	0.643	0.000	1.683
HEALTH PHYSICS	7	0	1	2.167	0.000	0.002
SUPERVISORY	0	0	0	0.000	0.000	0.000
ENGINEERING	0	0	0	0.000	0.000	0.000
REFUELING						
MAINTENANCE	0	0	0	0.000	0.000	0.000
OPERATIONS	0	0	0	0.000	0.000	0.000
HEALTH PHYSICS	0	0	0	0.000	0.000	0.000
SUPERVISORY	0	0	0	0.000	0.000	0.000
ENGINEERING	0	0	0	0.000	0.000	0.000
TOTALS						
MAINTENANCE	202	0	67	40.475	0.000	21.276
OPERATIONS	67	0	14	13.289	0.000	1.932
HEALTH PHYSICS	72	0	7	14.770	0.000	1.752
SUPERVISORY	11	0	2	1.288	0.000	0.246
ENGINEERING	5	0	2	0.460	0.000	0.115
GRAND TOTAL	357	0	92	70.202	0.000	25.321

Approved by :

Regulation Protection Manager

2-20-92

Date

Approved by :

General Manager CGMS

Date

SUMMARY OF PERSONNEL MONITORING REPORT
FINAL END OF THE YEAR REPORT FOR 1991

Estimated whole body exposure range	Number of individuals in each range
No Measurable Exposure	1396
Less than 0.1	425
0.1 to 0.25	126
0.25 to 0.5	99
0.5 to 0.75	32
0.75 to 1.0	10
1.0 to 2.0	4
2.0 to 3.0	3
3.0 to 4.0	0
4.0 to 5.0	0
5.0 to 6.0	0
6.0 to 7.0	0
7.0 to 8.0	0
8.0 to 9.0	0
9.0 to 10.0	0
10.0 to 11.0	0
11.0 to 12.0	0
12.0 and over	0

Total number of personnel monitored	2095
(1) True Total Dose (REM)	93.968
(1) Average REM per person	0.343

[Signature]
Radiation Protection Manager

2-20-92
Date

[Signature]
General Manager GGNS

2-20-92
Date

(1) Excluding 1821 persons with less than 0.1 REM. Total Dose on site for 1991 is 104.901 Rem for all persons monitored.

Special Maintenance Activities

There were no special maintenance activities in 1991.

SUMMARY OF FAILED FUEL INDICATIONS/INSPECTIONS

No irradiated fuel assembly examinations were performed during the reporting period; however, one fuel rod failure is estimated from Cycle 5 fuel reliability data. No Technical Specification limits have been exceeded.