



Entergy Operations, Inc.  
P. O. Box 756  
Port Gibson, MS 39150  
Tel 601 437 2129

**Joseph E. Venable**  
General Manager, Plant Operations  
Grand Gulf Nuclear Station

March 1, 2000

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station  
Unit 1  
Docket No. 50-416  
License No. NPF-29  
1999 Annual Operating Report

GNRO-2000/00013

Gentlemen:

Entergy Operations, Inc. is transmitting the Grand Gulf Nuclear Station (GGNS) Unit 1 Annual Operating Report for 1999. 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 1999,
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.

G20000222

A001

March 1, 2000  
GNRO-2000/00013  
Page 2 of 2

If you have any questions, please contact this office.

Yours truly,



JEV/AMT

attachments:

1. Summary Of Operating Experience - 1999
2. Main Steam Safety Relief Valve Challenges - 1999
3. Man-rem Exposure - 1999
4. Failed Fuel Indications/Inspections - 1999

cc:

Ms. J. L. Dixon-Herrity, GGNS Senior Resident (w/a)  
Mr. D. E. Levanway (Wise Carter)  
Mr. L. J. Smith (Wise Carter) (w/a)  
Mr. N. S. Reynolds (w/a)  
Mr. H. L. Thomas (w/o)

Mr. E. W. Merschoff (w/a)  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011

Mr. S. P. Sekerak, NRR/DLPM/PD IV-I (W/2)  
U.S. Nuclear Regulatory Commission  
One White Flint North, Mail Stop 04-D3  
11555 Rockville Pike  
Rockville, MD 20852-2378

March 1, 2000  
GNRO-2000/00013

bcc: Mr. R. J. King (RB) (w/a)  
Mr. S. D. Lin (w/a)  
Ms. A. M. Townsend (w/a)  
File (LCTS/RPTS) (w/a)  
File (Hard Copy) (w/a)  
File (Central) (w/a) ( )

INPO Records Center (w/a)  
700 Galleria Parkway  
Atlanta, Georgia 30339-5957

Mr. Marcus Ware (w/a)  
Manager of Production  
South Mississippi Electric Power Association  
P. O. Box 15849  
Hattiesburg, MS 39401

Mr. Fred Yost (w/a)  
Director Research Services  
Utility Data Institute  
1200 G Street, N.W. Suite 1100  
Washington, D.C. 20005

Mr. D. P. Galle  
19025 Ruth Drive  
Mokena, IL 60448

ccmail:

Mr. P. W. Alberstadt (w/a)	Mr. E. C. Ewing (W3 – LIC) (w/a)
Mr. S. J. Bethay (w/o)	Mr. C. W. Lambert (w/a)
Mr. C. A. Bottemiller (w/a)	Mr. J. R. McGaha (ECH) (w/a)
Mr. R. N. Buckley (w/a)	Mr. T. O. McIntyre (w/a)
Mr. S. A. Burris (w/a)	Mr. J. C. Roberts (w/a)
Mr. R. W. Carroll (w/a)	Mr. J. L. Robertson (w/a)
Mr. L. F. Daughtery (w/a)	Mr. W. M. Shelly (w/a)
Mr. G. G. Davie (W3 – LIC) (w/a)	Ms. M. T. Soniat (LP) (w/a)
Mr. C. M. Dugger (W3 – VP) (w/a)	Mr. G. D. Swords (w/a)
Mr. W. A. Eaton (w/a)	Mr. J. D. Vandergrift (ANO – LIC) (w/a)
Mr. R. K. Edington (RBS – VP) (w/a)	Mr. R. A. Wilson (w/a)
Mr. C. W. Ellsaesser (w/a)	
Mr. J. L. Ensley (ESI) (w/a)	

## 1999 SUMMARY OF OPERATING EXPERIENCE

The following is a summary of Grand Gulf Nuclear Station (GGNS) Unit 1 operating experience for the 1999 calendar year. During 1999, the reactor was critical for 7,124.2 hours with the generator on line for 6,946.0 hours.

On 1/9/99, reactor power reduced to approximately 65% to perform control rod sequence exchange. Duration time – 0 hours.

On 1/13/99, following discovery of melted epoxy compound (used to encapsulate low-voltage current transformers) on the base of Div I Diesel Generator feeder breaker, it was decided to shut down the plant to inspect and replace other CT's as required. The reactor power was first reduced and then at 0942 hour, the reactor was manually scrammed. Duration time – 401.1 hours.

On 2/21/99, while closely monitoring water leakage from "A" main condenser expansion joint seal water trough into the condenser, the reactor power was quickly reduced and then the reactor manually scrammed @2050 hour upon observation of full opening of the "A" seal water makeup valve and rapid increase in offgas flow. All 3 expansion joints were inspected during shutdown and both "A" and "C" were replaced. Duration time – 171.2 hours.

On 2/21/99, shutdown because of failure of "A" main condenser expansion joint continued until 03/02/99 @ 1341 hour. The "C" expansion joint was found to have air bubbles in the vulcanized rubber joint during inspection. Both "A" and "C" expansion joints were replaced during the outage. Rated core thermal power was restored on 03/05/99. Duration time – 37.7 hours.

On 10/22/99, scheduled power reduction for performing Reactor Feed Pump Turbine "A" over-speed test before refueling. Duration time – 0 hours.

On 10/23/99, reactor shut down for Refueling Outage #10 planned for 40 days. Duration time – 217.0 hours.

On 10/23/99, refueling Outage #10 continued through the month. Duration time – 720.0 hours.

On 10/23/99, planned Refueling Outage #10 continued. Duration time – 24.0 hours.

On 12/02/99, scheduled extension of RFO #10. Duration time – 203.9 hours.

On 12/11/99, power reduced to take generator off grid for repairing HP Turbine 1<sup>st</sup>-stage pressure sensing line. Duration time – 14.6 hours.

On 12/13/99, turbine tripped at reduced power to repair the pressure sensing line again. Duration time – 19.1 hours.

On 12/30/99, for prudence, reactor power was reduced to approximately 80% for Y2K rollover. Duration time – 0.0 hours.

## **1999 MAIN STEAM SAFETY RELIEF VALVE CHALLENGES**

This section contains a summary of main steam line safety relief valve challenges which occurred during 1999 as reported in the GGNS Monthly Operating Report for that period.

The summaries were originally included in the following monthly reports:

**February 1999 Report - GNRO-99/00047 - Dated: July 15, 1999**

DOCKET NO. 50-416  
DATE 6/08/99  
COMPLETED BY C. W. GUNN  
TELEPHONE (601) 437-2396

### MAIN STEAM SAFETY RELIEF VALVE CHALLENGES

**Date of Occurrence:** February 22, 1999

**Plant Operating Condition:**

**Rx Thermal Power** 83%      **Rx Pressure (psia)** About 600 psia      **Rx Mode** 1

**Rx Power (MWE)** 1066      **Rx Temperatures** 547F

**Number of main steam line SRVs:** 20

**Number of SRVs affected by event:** 6

**Narrative:**

On February 22, 1999, six SRVs were manually opened to control pressure during plant scram with MSIV closed. The following SRVs were opened to evenly heat-up suppression pool:

B21F041K, F051K, F041G, F041E, F041C, F047H

## **GGNS UNIT 1 ANNUAL REPORT**

### **MAN-REM EXPOSURE-1999**

This section contains a tabulation of the number of station, utility and other personnel receiving exposures greater than 100 mrem/year 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.

Entergy Operations, Inc.  
Grand Gulf Nuclear Station  
P.O. Box 756  
Port Gibson, MS.  
39150  
LICENSE: NPF-29

Date: 23-FEB-2000 13:15

Regulatory Guide 1.16 Information  
End of Year Report 1999

Work and Job Function	Number of Personnel > 100 mrem			Total man-rem *		
	Station	Utility	Contractor	Station	Utility	Contractor
<b>ROUTINE OPERATIONS AND SURVEILLANCE</b>						
MAINTENANCE AND CONSTRUCTION	0	0	0	0.293	0.015	0.065
OPERATIONS	40	0	0	10.957	0.079	0.930
HEALTH PHYSICS	17	0	14	5.162	0.121	6.780
SUPERVISORY	1	1	0	0.577	0.328	0.366
ENGINEERING	0	0	0	0.686	0.002	0.003
<b>ROUTINE PLANT MAINTENANCE</b>						
MAINTENANCE AND CONSTRUCTION	83	17	144	21.398	5.105	56.741
OPERATIONS	22	3	0	5.917	0.556	0.010
HEALTH PHYSICS	14	0	4	4.536	0.083	1.882
SUPERVISORY	1	0	0	0.994	0.184	0.680
ENGINEERING	2	0	19	1.293	0.009	5.390
<b>INSERVICE INSPECTION</b>						
MAINTENANCE AND CONSTRUCTION	0	1	20	0.000	0.272	10.869
OPERATIONS	0	0	0	0.011	0.002	0.012
HEALTH PHYSICS	0	0	0	0.117	0.000	0.133
SUPERVISORY	1	3	29	0.322	0.450	10.870
ENGINEERING	1	0	1	0.277	0.000	0.903
<b>SPECIAL PLANT MAINTENANCE</b>						
MAINTENANCE AND CONSTRUCTION	20	11	27	6.949	2.849	11.811
OPERATIONS	0	0	0	0.110	0.000	0.430
HEALTH PHYSICS	0	0	1	0.427	0.000	0.294
SUPERVISORY	0	0	1	0.012	0.055	0.410
ENGINEERING	0	0	18	0.160	0.062	5.834
<b>WASTE PROCESSING</b>						
MAINTENANCE AND CONSTRUCTION	0	0	0	0.555	0.002	0.187
OPERATIONS	2	0	2	0.841	0.000	0.536
HEALTH PHYSICS	4	0	0	1.350	0.084	0.111
SUPERVISORY	0	0	0	0.000	0.000	0.000
ENGINEERING	1	0	3	0.132	0.000	1.488
<b>REFUELING</b>						
MAINTENANCE AND CONSTRUCTION	2	0	37	0.927	0.014	10.319
OPERATIONS	3	0	0	0.876	0.000	0.000
HEALTH PHYSICS	5	4	4	1.014	0.750	0.993
SUPERVISORY	2	0	0	0.652	0.391	0.007
ENGINEERING	1	0	0	0.537	0.151	0.000
<b>Totals</b>						
MAINTENANCE AND CONSTRUCTION	105	29	228	30.122	8.257	89.992
OPERATIONS	67	3	2	18.712	0.637	1.918
HEALTH PHYSICS	40	4	23	12.606	1.038	10.193
SUPERVISORY	5	4	30	2.557	1.408	12.333
ENGINEERING	5	0	41	3.085	0.224	13.618
<b>Grand Totals</b>	<b>222</b>	<b>40</b>	<b>324</b>	<b>67.082</b>	<b>11.564</b>	<b>128.054</b>

\* The total radiation exposure of the above personnel constitutes 100% of the site's exposure for the year.



The following is a description of all Special Plant Maintenance activities for 1999 and total dose for each category.

Description	Dose(Rem)
ERs, MCP, and DCP work activities.	3.533
Open/Disassemble/Inspect/Repack/Rework MSIVs. To include all support work.	10.806
Perform Modifications to the Refueling Bridge (CTMT), Auxiliary Platform (CTMT), and the Fuel Handling Bridge.	0.605
Drills and Emergencies	0.010
Furmanite Repair of Plant Equipment.	1.869
HFTS Repairs	0.444
Aux. Steam Tunnel G33 Penetration Cooler Mods	0.294
Drywell Cooling Coils Replacement and Vent Mods	1.794
Repair Broken/Damaged Grating, Studs, and Hold-Down Plates in the Drywell.	0.047
B21F010A and B21F032A Valve Work.	0.334
MOV Work and Diagnostic Testing on E12F009.	4.656
Replace RVDT and Calibrate B33F060A/B.	0.233
Replace RTD G33N007 Temperature Element in the RWCU Heat Exchanger Room.	0.054
Open the east side manway of the intermediate Condenser for Hotwell pump down.	0.008
Replace G33C001B Pump Seal.	0.602
Replace G33C001B Pump Seal, Rework valve G36F031A, G36F032A, and G33F003A.	0.854
P45 Sump Work and Calibrations Undervessel.	0.528
Seimens/Power Equipment Maintenance (PEM) Turbine Deck and Turbine Bldg. Work.	0.225
Emergent Work Activities During RF10.	0.154
MOV/AOV Work and Diagnostic Testing in the Drywell	1.528
Fire Watch Rounds Due To Problems With Conduit Fire Seals.	0.825

**1999 FAILED FUEL INDICATIONS/INSPECTIONS**

Cycle 10 startup and steady-state data indicate there are no fuel failures in the Grand Gulf core.