I-MOSBA-43

059

DIESEL TESTING

- NORMAL 36 MONTH OVERHAUL AND INSPECTION
- SPECIAL TESTING

1A

3/20 EVENT
5 STARTS, TROUBLESHOOTING

UV RUN TEST
SENSOR CALIBRATION
LOGIC TESTING
E-RUN BUBBLE TESTING
MULTIPLE STARTS (5)
UV RUN TEST
6 MONTH SURVEILLANCE
DIESEL OPERABLE
HI JACKET WATER RUNS (3)
DCP UV RUN TEST

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18 SUCCESSFUL STARTS

1B

IN OVERHAUL

SENSOR CALIBRATION
LOGIC TESTING
E-RUN BUBBLE TESTING
MULTIPLE STARTS (14)
UV RUN TEST
6 MONTH RUN SURVEILLANCE
DIESEL OPERABLE

LUBE OIL DCP RUN
DCP UV RUN FUNCTIONAL

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19 SUCCESSFUL STARTS

Ex 43
1

UNIT 2

- **UNIT 2 TRIP**
  - Unit 2 RAT B Trip/Primary Differential Trip
  - Turbine Trip/Reactor Trip
  - Safety System Response Proper
- **CAUSE**
  - Differential Relay CT Set 3000/5 vice 2000/5
- **CORRECTIVE ACTIONS**
  - Test the Remaining Relays on Unit 2
  - Update Switchyard Drawings based on audit
  - Clarify existing policies for Switchyard

DATE: April 6, 1990

RE: Accountability During Emergencies
Log: NOV-00426

FROM: G. Bockhold, Jr.

TO: All Emergency Directors
and Site Personnel

In the event of site emergency conditions, we will implement the following revised procedures. These changes will enhance personnel accountability and safety and ensure better information flow for employees. They will also provide flexibility to the plant when responding to emergency situations.

When the Emergency Director (ED) makes an emergency classification, he will make the appropriate tone and page announcement on the plant PA system. He will direct site personnel to the appropriate locations. If you can not hear the page, report to your supervisor. He or she will direct you appropriately. Normally non-essential personnel will report to the Admin. Building auditorium or parking lot. David Phillips, the Financial Services Supervisor, has authority to coordinate with the ED and control the disposition of non-essential personnel. In his absence, the senior person present will contact the Security Captain for additional assistance.

Emergency Response Organization (ERO) personnel should report immediately to the appropriate facility. Other shift personnel, supervisors, and managers on-site should report initially to the OSC. Overflow personnel will assemble in the maintenance machine shop area.

When directed by the ED, the security department will initiate accountability. **The security department cannot account for personnel who fail to log into the appropriate ERF (e.g., control room, TSC, or OSC) so it is essential we comply with the ED's instructions as soon as possible.**

Your assistance implementing these instructions will ensure we manage emergencies better and provide plant personnel with sufficient information to keep them informed of abnormal plant activities. Thank you for your assistance.

CB/erd

xc: Department Heads
NORMS

92 PROJECT
055900

QUARANTINE COMPONENTS

TEMPERATURE SWITCHES

- 1A Probable Trip Cause
  - Jacket Water Temperature (2/3 Logic)
  - 1 Intermittent
  - 1 Post Calibration Low (186°F & Venting)
- 1A Other Temperature Components
  - 1 Lube Oil Temperature (sluggish)

- 1B Temperature Components
  - 4 Jacket Water Temp (Venting)
  - 2 Lube Oil Temp (Venting & Calib.)

PRESSURE SWITCHES

- 1A
  - 1 Lube Oil Pressure (Tripped)
  - 2 Lube Oil Pressure (Conservatively Replaced)

- 1B
  - 2 Logic (would not trip engine)

EMERGENCY PLAN IMPLEMENTATION

DURING THE EMERGENCY, OFF-SITE NOTIFICATIONS WERE LATE AND/OR DELAYED BEYOND THE 15 MINUTE TIME LIMIT.

o DIRECT CAUSES

- POWER TO THE PRIMARY ENN (1E EMERGENCY POWER) WAS LOST.
- ALL EMERGENCY AGENCIES WERE NOT INCLUDED ON THE BACKUP ENN. (BURKE COUNTY AND GEMA ADDED 4/6/90)

o CONTRIBUTING CAUSES

- CONTROL ROOM COMMUNICATORS AND SUPERVISORS WERE NOT FULLY KNOWLEDGEABLE OF THE COMMUNICATIONS SYSTEM CAPABILITIES. (PRIMARY ENN IN TSC HAD POWER FROM THE SECURITY SYSTEM DIESEL.)
- THE SERIES METHOD OF NOTIFICATION CONTAINED UNSATISFACTORY DELAYS.
- EMERGENCY DIRECTOR DID NOT ENSURE PROMPT NOTIFICATION OF OFF-SITE AGENCIES.
- AMPLIFYING INFORMATION WAS NOT PROVIDED TO LOCAL GOVERNMENT OFFICIALS.

INITIATING EVENT

FUELING TRUCK STRUCK INSULATOR SUPPORT INSIDE THE LOW VOLTAGE SWITCHYARD CAUSING A FAULT TO THE 1A RESERVE AUXILIARY TRANSFORMER.

o DIRECT CAUSE

- TRUCK DRIVER AND ESCORT WERE INATTENTIVE TO SAFE OPERATION OF THE TRUCK.

o CONTRIBUTING CAUSES

- CONTROL OF VEHICLES NEAR VULNERABLE AND SENSITIVE AREAS NOT ESTABLISHED.
- MAINTENANCE EQUIPMENT STAGED INAPPROPRIATELY.
- THE USE OF GROUND-GUIDES INSIDE THE PROTECTED AREA WAS NOT CLEAR.

EMERGENCY PLAN IMPLEMENTATION

COMMUNICATION BETWEEN CORPORATE AND TSC NEEDS TO BE IMPROVED.

- DIRECT CAUSES

  - THE STATUS LOOP TELEPHONE BRIDGE WAS NOT OPERABLE AT THE BEGINNING OF THE EMERGENCY BECAUSE OF THE LOSS OF POWER.

EMERGENCY PLAN IMPLEMENTATION

DURING THE EMERGENCY, SITE PERSONNEL ACCOUNTABILITY NEEDED IMPROVEMENT.

- o DIRECT CAUSE
  - ACCOUNTABILITY PROCEDURES DID NOT PROVIDE FOR THE SITUATION OF NOT EVACUATING THE SITE. (GENERAL MANAGER'S MEMO OF 4/6/90)
- o CONTRIBUTING CAUSES
  - THE INITIAL PAGE ANNOUNCEMENT WAS DELAYED APPROXIMATELY 20 MINUTES.
  - PERSONNEL WERE ALLOWED TO RE-ENTER THE PROTECTED AREA.
  - PAGE ANNOUNCEMENTS ARE DIFFICULT TO HEAR IN SOME PLANT AREAS.
  - THE COMPUTER GENERATED PRINTOUT DID NOT ALLOW QUICK IDENTIFICATION OF PERSONNEL.
  - THE EMERGENCY DIRECTOR FAILED TO PROVIDE GUIDANCE AFTER DECIDING NOT TO EVACUATE PERSONNEL.

DIESEL GENERATOR AVAILABILITY

THE 1A DIESEL GENERATOR FAILED TO PROVIDE EMERGENCY POWER TO 1E LOADS UNDER LOSP CONDITIONS.

o DIRECT CAUSE

- DIESEL TRIP SIGNALS WERE PRESENT DURING UNDER VOLTAGE INITIATED START CONDITIONS.

o CONTRIBUTING CAUSES

- POST MAINTENANCE FUNCTIONAL TESTING FOR AIR LEAKAGE IN THE CONTROL SYSTEM WAS INADEQUATE.
- PROCEDURES FOR TIGHTENING FITTINGS IN THE AIR LOGIC SYSTEM NEED IMPROVEMENT.
- CALIBRATION PROCEDURES OF TEMPERATURE SWITCHES DID NOT GUARANTEE CONSISTENT SETTINGS.
- DIESEL GENERATOR TRIPS DURING LOSP WERE NOT CONSISTENT WITH TRIPS DURING A SAFETY INJECTION SITUATION.
- DIESEL GENERATOR START LOGIC DID NOT ALLOW MULTIPLE STARTS ON AN UNDERVOLTAGE CONDITION WITH THE DIESEL RUNNING.
- OPERATORS DID NOT FULLY UNDERSTAND THE DIESEL START LOGIC AND SEQUENCER INTERFACE ON AN LOSP.

MID-LOOP OPERATIONS

ACTIONS TO RESPOND TO LOSS OF CORE COOLING AT MID-LOOP SHOULD BE IMPROVED.

- **DIRECT CAUSE**
  - THE "LOSS OF RESIDUAL HEAT REMOVAL" PROCEDURE SHOULD PROVIDE IMPROVED GUIDANCE FOR A LOSP CONDITION.
- **CONTRIBUTING CAUSES**
  - THE "LOSS OF RHR" PROCEDURES ARE TOO NARROWLY FOCUSED FOR MODE 5 & 6 CONDITIONS.
  - DIRECTIONS FROM THE EMERGENCY DIRECTOR WERE NOT ALWAYS EXPLICIT.

004

PRESENTATION TO REGION II
NUCLEAR REGULATORY COMMISSION
ON
VOGTLE SITE AREA EMERGENCY
MARCH 20, 1990

AGENDA

o Opening Remarks	C. K. McCoy
o Event Review Team Critique	G. Bockhold
o Truck/Switchyard	
o Off-Site Notifications	
o Personnel Accountability	
o Communications Corporate/Site	
o Mid-Loop Operations	
o Diesel Testing/Operability	G. Bockhold
o Quarantine Components	G. Bockhold
o Unit 2	G. Bockhold

92 PROJECT
05590B

UNIT 1
DIESEL GENERATOR 1B

DATE	TIME	COMMENTS
02/24/90	1425	Started for 24 Hour Run
02/25/90	2206	Secured from 24 Hour Run
	2336	Started for ESFAS Testing
	2348	Secured for ESFAS
02/27/90	0312	Started for ESFAS
	0424	Secured for ESFAS
	0605	Started for ESFAS
	0642	Secured for ESFAS
03/13/90	1518	Start for Maint. Test
03/14/90	0146	Stopped
03/21/90	2149	Failed to start due to insufficient fuel in fuel lines after maintenance.
	2156	Failed to Start Again
	2202	Started and Governor Vented
	2217	Stopped
	2259	Started for Overspeed Trip Test
	2301	Stopped Manually due to Low Lube Oil Pressure and High Oil Filter DP
	2314	Started
	2318	Stopped
03/22/90	0017	Started
	0023	Stopped for Maintenance
	0428	Started for Testing
	0429	Stopped
	0714	Locally Started for Maintenance and Engineering Testing
03/22/90	1030	Locally Shutdown
03/22/90	1106	Started from CR
	1243	Tripped on D/G High Lube Oil Temp.
03/23/90	0509	Started for Maintenance Run
	1202	Stopped

92 PROJECT
055909

UNIT 1
DIESEL GENERATOR 1B (CONT'D)

DATE	TIME	COMMENTS
03/23/90	1730	Started for 4 Hour Run
	1731	Tripped on Low Jacket Water Pressure/Turbo Lube Oil Pressure Low
	1744	Started for 4 Hour Run
	2222	Stopped
03/24/90	0048	Started for Maintenance
	0049	"Hi Jacket Water Temp" Alarm In, Temp Verified to be Normal.
	0121	Normal Stop
03/27/90	1649	Emergency Start Test
	1822	Normal Shutdown
	1909	Normal Start
	1948	Stopped. Simulated Hi Temp Lube Oil Trip
	1951	Started. Simulated LOSP at Engine Panel
	1954	Stopped. Simulated Hi Vibration Trip
	1957	Normal Start
	1959	Stopped. Simulated Hi Crankcase Pressure Trip
	2004	Started. Simulated SI at Engine Panel
	2010	Stopped. Simulated Lo Lube Oil Pressure Trip
	2220	Started. Simulated Bus UV Signal
	2317	Normal Shutdown
03/28/90	0403	Started. Surveillance 14980-1
	0537	Normal Shutdown
	1350	Start to Perform Functional Test for MWO 1-89-03281 (Lo Lube Oil Pressure Trip Flow Orifices)
	1355	Normal Shutdown
	1356	Started. Simulated UV for Functional on MWO 1-89-03281
	1400	Normal Shutdown
04/01/90	1623	Normal Start
	1744	Normal Shutdown
04/04/90	1632	Started for Maintenance
	1744	Stopped

92 PROJECT
055910

UNIT 1
DIESEL GENERATOR 1B (CONT'D)

DATE	TIME	COMMENTS
04/05/90	0030	Started. T-ENG-90-17
	0035	Stopped
	0307	Started. 14980
	0509	Stopped

UNIT 1
DIESEL GENERATOR 1A

DATE	TIME	COMMENTS
02/26/90	1509	Started. 24 Hour Run for ESFAS
02/28/90	0226	Secured from 24 Hour Run
02/28/90	0945	Started for ESFAS Testing
		1210 Secured for ESFAS Testing
02/28/90	1700	Started 3 Times in Series During ESFAS Testing
02/29/90	0218	Secured for ESFAS Testing
03/01/90	0128	Started for ESFAS
03/02/90	0215	Secured for ESFAS
	0912	Started for Maintenance
	1944	Secured for Maintenance
03/12/90	1306	Started
	2137	Stopped
03/13/90	0009	Started
	0506	Stopped
03/20/90	0820	LOSP Occurred - Lost "A" RAT - DG1A Tied and Tripped (Several Alarms came in - not noted in the log.)
	0841	Auto Started after Sequencer Reset and Tripped on Low Jacket Water Pressure
	0856	Emergency Break Glass Start Locally to Recover from Station Blackout.
	1029	RAT "B" Energized
	1040	1BA03 Energized from "B" RAT
	1326	Shutdown
	2119	Started for Troubleshooting
	2206	Shutdown
	2223	Started for Troubleshooting
	2228	Secured
	2233	Started for Troubleshooting
	2254	Secured
03/23/90	0254	Started for Maintenance Troubleshooting
	0450	Secured

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UNIT 1
DIESEL GENERATOR 1A

DATE	TIME	COMMENTS
03/23/90	1724	Started and Manually Stopped from CR
03/29/90	1109	Started. UV Test, Tied to 1AA02
	1158	Normal Shutdown
03/30/90	1920	Emergency Start
	2115	Stopped
	2235	Local Start
	2241	Trip Hi Temp Lube Oil
	2254	Local
	2300	Trip High Vibration
	2313	Normal Start
	2316	Stopped. Hi Crank Case Pressure
	2328	SI
	2334	Low Lube Oil Pressure
	2343	Normal Start
	2347	Normal Stop
	2348	Normal Start
	2358	Stop
03/31/90	0012	Normal Start
	0014	Normal Stop
	0016	SI
	0019	CR
	1827	Start Local
	1837	Local Stop
	1846	Local Start
	1847	Stop
	1856	Local Start
	1857	Local Stop
	1904	Local Start
	1906	Local Stop
	1921	Local Start
	1922	Local Stop

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055913

UNIT 1
DIESEL GENERATOR 1A

DATE	TIME	COMMENTS
03/31/90	1955	Local Start
	2012	Local Stop
	2254	Started. UV Test, Tied to 1AA02
	2320	Normal Shutdown
04/01/90	0423	Started. Surveillance 14980-1
	0556	Normal Shutdown
04/06/90	1345	Start. T-ENG-90-16
	1346	Stop
	1404	Start. T-ENG-90-16
	1405	Stop
	1419	Start. T-ENG-90-16
	1430	Stop
	2347	Start. T-ENG-90-11
04/07/90	0213	Stop