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NOV 18 1993

U.S. Nuclear Regulatory Commission
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Gentlemen:

In the Matter of the Application of)
Tennessee Valley Authority) Docket Nos. 50-390

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - REACTOR OPERATOR AND SENIOR REACTOR
OPERATOR LICENSE EXAMINATIONS

The purpose of this letter is to provide the status of operational procedures required to support development of Reactor Operator and Senior Reactor Operator license examination Job Performance Measures. Additionally, this letter provides a status of simulator issues identified during the license examinations administered at WBN in July 1993 and a discussion related to maintaining qualifications of those RO/SRO candidates tested in July 1993. A request for this information was made during meetings held in Atlanta, Georgia, with NRC Region II staff personnel on October 28, 1993.

Enclosure 1 and associated attachments provide the information requested by NRC. Enclosure 2 contains a list of commitments made in this submittal.

If you should have any questions, contact P. L. Pace at (615)-365-1824.

Very truly yours,

William J. Museler

Enclosures

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ENCLOSURE 1

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 REACTOR OPERATOR AND SENIOR REACTOR OPERATOR LICENSE EXAMINATIONS

On October 28, 1993, TVA (WBN) Operations and Operator Training management personnel delivered previously requested training materials to NRC Region II license examination personnel in Atlanta, Georgia. The Reactor Operator and Senior Reactor Operator (RO/SRO) license examinations scheduled to be administered at WBN during late January/early February 1994 were also discussed during the visit to the Region II office.

The major topic of discussion was TVA's upgrade of approximately 215 operational procedures to support the job performance measures (JPM) portion of the NRC administered RO/SRO license examinations. The NRC RO/SRO license examinations administered in July 1993 were not completed due to insufficient upgraded procedures to support JPMs. These procedures represent a significant portion of the procedures that will be used by licensed operators at WBN on a daily basis and include normal, abnormal, emergency, and surveillance/test procedures.

Attachment 1 provides a general breakdown and status by type of procedure. Attachment 2 provides a detailed listing of the procedures with a projected completion date for those not already issued. Currently, approximately 190 procedures have been upgraded and reissued, with the remaining to be completed by December 15, 1993.

Ongoing construction activities make the field status of major modifications difficult to accurately project. This condition caused most of the problems identified during the NRC preparation week for the July 1993 RO/SRO license examinations. Prior to the NRC preparation week for the January/February 1994 RO/SRO license examinations, TVA will perform walkdowns of operational procedures. These walkdowns will identify any differences between the field completion and the upgraded procedures (i.e., due to modifications not being fully implemented yet). If practical, the procedures will be modified to reflect the current field status in order to provide as many job tasks as possible to NRC for JPM development.

Since the next RO/SRO license examinations will occur close to scheduled Hot Functional Test dates, TVA anticipates only limited problem areas to be identified during the walkdowns. The walkdowns will be conducted by Operations (plant operations and operations training) personnel and will concentrate mainly on those portions of the procedures normally utilized for JPMs (i.e., the body of the procedures, not the lengthy power and valve checklists). With a large number of procedures available and the field walkdowns, sufficient upgraded materials will be available to support the JPM portion of the NRC RO/SRO license examination for both the current license group and the July 1993 license group (approximately 45 operators).

Another topic of discussion during the Region II visit was the status of the simulator issues identified by NRC during the July 1993 RO/SRO license examinations. Most of the items have been resolved with the remaining items

currently being worked. A detailed item-by-item status is provided as Attachment 3. Additionally, TVA will dedicate a simulator programmer to assist NRC during the RO/SRO license examination preparation and examination weeks. This will provide NRC flexibility in examination scenario development and ensure any additional problem areas identified by NRC are promptly addressed.

The last topic discussed during the Region II visit concerned the 18 RO/SRO candidates who successfully completed the administered portions of the NRC license examination in July 1993. Although no formal requalification program is required at this time, two parallel programs are in place to ensure these candidates are kept up to date on plant and procedural changes. First, a required reading program is ongoing which summarizes plant modifications, procedural changes, and industry events relative to operations personnel. Second, Watts Bar has developed an informal simulator program to help maintain the successful performances exhibited during the July 1993 NRC RO/SRO license examinations. The program consists of approximately 12 hours of simulator time for each of the 18 operators between now and the end of January 1994. These 12 hours will expose the candidates to Main Control Board changes and the abnormal and emergency instruction changes. Additional hours of simulator time are expected to be assigned to these individuals, as time is made available.

In summary, TVA (WBN) has taken steps to ensure that a complete RO/SRO license examination can be administered by NRC in January/February 1994 and the July 1993 RO/SRO license examination (JPMs) can be completed in March of 1994.

ENCLOSURE 2

LIST OF COMMITMENTS

1. Currently, approximately 190 procedures have been upgraded and reissued, with the remaining to be completed by December 15, 1993.
2. Prior to the NRC preparation week for the January/February 1994 RO/SRO license examinations, TVA will perform walkdowns of operational procedures. These walkdowns will identify any differences between the field completion and the upgraded procedures. If practical, the procedures will be modified to reflect the current field status in order to provide as many job tasks as possible to NRC for JPM development.
3. TVA will dedicate a simulator programmer to assist NRC during the RO/SRO license examination scenario development and examination weeks.

ATTACHMENT 1

STATUS FOR PROCEDURES TO SUPPORT JOB PERFORMANCE MEASURES (JPMs)

<u>Procedure Type</u>	<u>Status</u>
• EOIs (44)	All Complete and issued
• AOIs (29)	29 completed and issued V & V on the week of 11/15/93 with necessary revisions by 11/29/93
• SIs (33)	23 currently issued with the remainder to be issued from 11/15/93 and 12/15/93
• SOIs (109)	96 currently issued with the remainder to be issued between 11/19/93 and 12/15/93
215 total	192 completed 23 to be completed by 12/15/93

Updated Procedures to support NCR JPM exams

Completion date	SOIs	Title	Complete	SOI-216.01	480V Fuel& Waste Handling Board A
Complete	SOI-200.01	6.9kV Start Buses	Complete	SOI-217.01	480V Chemical & Volume Control Bd A
Complete	SOI-200.02	6.9kV Reactor Coolant Pump Start Buses	Complete	SOI-217.02	480V Chemical & Volume Control Bd B
Complete	SOI-200.03	6.9kV Common Boards A & B	Complete	SOI-218.01	480V Lube Oil Board
Complete	SOI-200.04	CSST C & D and Assc Supply Bkrs to 6.9kV SD Bd	Complete	SOI-219.00	480V Chlorine Building Bd
Complete	SOI-200.05	CSST A & B	Complete	SOI-220.01	480V Makeup Water Treatment Board
Complete	SOI-201.01	6.9Kv Unit Bd 1A	Complete	SOI-222.01	480V Service Bldg Vent Bd 1
Complete	SOI-201.02	6.9Kv Unit Bd 1B	Complete	SOI-222.02	480V Service Bldg Vent Bd 2
Complete	SOI-201.03	6.9Kv Unit Bd 1C	Complete	SOI-222.03	480V Service Bldg Hot Shop MCC
Complete	SOI-201.04	6.9Kv Unit Bd 1D	Complete	SOI-225.00	480V CCW Pumping Station Bd
Complete	SOI-202.01	6.9kV Reactor Coolant Pump Board 1A	Complete	SOI-226.00	480V Intake Pumping Station Bd
Complete	SOI-202.02	6.9kV Reactor Coolant Pump Board 1B	Complete	SOI-232.01	480V Reactor Vent Board 1A-A
Complete	SOI-202.03	6.9kV Reactor Coolant Pump Board 1C	Complete	SOI-232.02	480V Reactor Vent Board 1B-B
Complete	SOI-202.04	6.9kV Reactor Coolant Pump Board 1D	Complete	SOI-232.03	480V Reactor Vent Board 2A-A
Complete	SOI-203.01	480V Unit Board 1A	Complete	SOI-232.04	480V Reactor Vent Board 2B-B
Complete	SOI-203.02	480V Unit Board 1B	Complete	SOI-235.01	120V AC Vital Power System 1-I
Complete	SOI-205.00	480V Turbine Building Common Board	Complete	SOI-235.02	120V AC Vital Power System 1-II
Complete	SOI-206.00	480V Auxiliary Building Common Board	Complete	SOI-235.03	120V AC Vital Power System 1-III
Complete	SOI-207.01	480V Turbine Building Common MCC A	Complete	SOI-235.04	120V AC Vital Power System 1-IV
Complete	SOI-207.02	480V Turbine Building Common MCC B	Complete	SOI-235.05	120V AC Vital Power System 2-I
Complete	SOI-208.01	480V Auxiliary Building Common MCC A	Complete	SOI-235.06	120V AC Vital Power System 2-II
Complete	SOI-208.02	480V Auxiliary Building Common MCC B	Complete	SOI-235.07	120V AC Vital Power System 2-III
Complete	SOI-208.03	480V Auxiliary Building Common MCC C	Complete	SOI-235.08	120V AC Vital Power System 2-IV
Complete	SOI-209.01	480V Turbine MOV Bd 1A	Complete	SOI-237.01	120V AC Instrument Power 1A
Complete	SOI-209.02	480V Turbine MOV Bd 1B	Complete	SOI-237.02	120V AC Instrument Power 1B
Complete	SOI-209.03	480V Turbine MOV Bd 1C	Complete	SOI-237.03	120V AC Instrument Power 2A
Complete	SOI-210.01	480V Turbine Bldg Vent Board 1A	Complete	SOI-237.04	120V AC Instrument Power 2B
Complete	SOI-210.02	480V Turbine Bldg Vent Board 1B	Complete	SOI-238.01	120V AC Preferred Power System 1
Complete	SOI-211.01	6.9kV Shutdown Bd 1A-A	Complete	SOI-238.02	120V AC Preferred Power System 2
Complete	SOI-211.02	6.9kV Shutdown Bd 1B-B	Complete	SOI-239.01	250V DC Battery Board 1
Complete	SOI-211.03	6.9kV Shutdown Bd 2A-A	Complete	SOI-239.02	250V DC Battery Board 2
Complete	SOI-211.04	6.9kV Shutdown Bd 2B-B	Complete	SOI-241.01	120V AC Computer Inverter 1
Complete	SOI-212.01	480V Shutdown Boards	Complete	SOI-241.02	120V AC Computer Inverter 2
Complete	SOI-212.02	480V Shutdown Board 1A2-A	Complete	SOI-249.01	480V CDWE Bldg MCC
Complete	SOI-212.03	480V Shutdown Board 1B1-B	Complete	SOI- 3.02	Auxiliary Feedwater System
Complete	SOI-212.04	480V Shutdown Board 1B2-B	Complete	SOI- 47.02	Turbo-Generator Startup Operation
Complete	SOI-212.05	480V Shutdown Board 2A1-A	Complete	SOI- 62.02	Boron Concentration Control
Complete	SOI-212.06	480V Shutdown Board 2A2-A	Complete	SOI- 85.01	Control Rod Drive & Indication System
Complete	SOI-212.07	480V Shutdown Board 2B1-B	Complete	SOI- 30.06	Auxiliary Building Gas Treatment System
Complete	SOI-212.08	480V Shutdown Board 2B2-B	Complete	SOI- 30.08	Containment Air Return Fans
Complete	SOI-213.01	480V Reactor MOV Board 1A1-A	11/19/93	SOI- 62.01	CVCS Charging & Letdown
Complete	SOI-213.02	480V Reactor MOV Board 1A2-A	11/19/93	SOI- 68.01	Reactor Coolant System
Complete	SOI-213.03	480V Reactor MOV Board 1B1-B	11/19/93	SOI- 68.02	Reactor Coolant Pumps
Complete	SOI-213.04	480V Reactor MOV Board 1B2-B	11/19/93	SOI- 70.01	Component Cooling Water (CCS)
Complete	SOI-213.05	480V Reactor MOV Board 2A1-A	11/19/93	SOI- 74.01	Residual Heat Removal System
Complete	SOI-213.06	480V Reactor MOV Board 2A2-A	11/26/93	SOI- 67.01	Essential Raw Cooling Water System
Complete	SOI-213.07	480V Reactor MOV Board 2B1-B	Complete	SOI- 1.01	Main Steam System
Complete	SOI-213.08	480V Reactor MOV Board 2B2-B	12/03/93	SOI- 65.01	Annulus Vacuum System
Complete	SOI-214.01	480V C&A Vent Bd 1A1-A	12/03/93	SOI- 68.03	Pressurizer Pressure & Spray Control System
Complete	SOI-214.02	480V C&A Vent Bd 1A2-A	12/10/93	SOI- 63.01	Safety Injection System
Complete	SOI-214.03	480V C&A Vent Bd 1B1-B	12/10/93	SOI- 65.02	Emergency Gas Treatment System
Complete	SOI-214.04	480V C&A Vent Bd 1B2-B	12/10/93	SOI- 72.01	Containment Spray System
Complete	SOI-214.05	480V C&A Vent Bd 2A1-A	12/10/93	SOI- 82.01	Diesel Generator (DG) 1A-A
Complete	SOI-214.06	480V C&A Vent Bd 2A2-A	12/15/93	SOI- 72.02	RHR Spray System
Complete	SOI-214.07	480V C&A Vent Bd 2B1-B	Sub Total = 109, Current Issued = 96, Remaining to be complete by 12/15/93		
Complete	SOI-214.08	480V C&A Vent Bd 2B2-B	Grand Total = 215		

Updated Procedures to support NCR JPM exams

Completion

date	EOIs	Title
Complete	E-0	Reactor Trip or Safety Injection
Complete	ES-0.0	Rediagnosis
Complete	ES-0.1	Reactor Trip Response
Complete	ES-0.2	Natural Circulation Cooldown
Complete	ES-0.3	Natural Circulation Cooldown with Steam Void in Vessel (with RVLIS)
Complete	ES-0.4	Natural Circulation Cooldown with Steam Void in Vessel (without RVLIS)
Complete	E-1	Loss of Reactor or Secondary Coolant
Complete	ES-1.1	SI Termination
Complete	ES-1.2	Post LOCA Cooldown and Depressurization
Complete	ES-1.3	Transfer to RHR Containment Sump
Complete	ES-1.4	Transfer to Hot Leg Recirculation
Complete	E-2	Faulted Steam Generator Isolation
Complete	E-3	Steam Generator Tube Rupture
Complete	ES-3.1	Post-SGTR Cooldown using Backfill
Complete	ES-3.2	Post-SGTR Cooldown using Blowdown
Complete	ES-3.3	Post-SGTR Cooldown using Steam Dumps
Complete	FR-0	Status Trees
Complete	FR-S.1	Nuclear Power Generation/ATWS
Complete	FR-S.2	Loss of Core Shutdown
Complete	FR-C.1	Inadequate Core Cooling
Complete	FR-C.2	Degraded Core Cooling
Complete	FR-C.3	Saturated Core Cooling
Complete	FR-H.1	Loss of Secondary Heat Sink
Complete	FR-H.2	Steam Generator Overpressure
Complete	FR-H.3	Steam Generator High Level
Complete	FR-H.4	Loss of Normal Steam Release Capabilities
Complete	FR-H.5	Steam Generator Low Level
Complete	FR-P.1	Pressurized Thermal Shock
Complete	FR-P.2	Cold Overpressure Condition
Complete	FR-Z.1	High Containment Pressure
Complete	FR-Z.2	Containment Flooding
Complete	FR-Z.3	High Containment Radiation
Complete	FR-I.1	High Pressurizer Level
Complete	FR-I.2	Low Pressurizer Level
Complete	FR-I.3	Voids in Reactor Vessel
Complete	ECA-0.0	Loss of Shutdown Power
Complete	ECA-0.1	Recovery from Loss of Shutdown Power without SI Required
Complete	ECA-0.2	Recovery from Loss of Shutdown Power with SI Required
Complete	ECA-1.1	Loss of RHR Sump Recirculation
Complete	ECA-1.2	LOCA Outside Containment
Complete	ECA-2.1	Uncontrolled Depressurization of all Steam Generators
Complete	ECA-3.1	SGTR and LOCA - Subcooled Recovery
Complete	ECA-3.2	SGTR and LOCA - Saturated Recovery
Complete	ECA-3.3	SGTR without PZR Pressure Control

Sub Total = 44, Currently complete

Completion

date	AOIs	Title
Complete	AOI- 2	Malfunction of Reactor Control System
Complete	AOI- 3	Malfunction of Reactor Makeup Control
Complete	AOI- 4	Nuclear Instrumentation Malfunctions
Complete	AOI- 5	Unscheduled Removal of One RCP below P-8
Complete	AOI- 6	Small Reactor Coolant System Leak
Complete	AOI-10	Loss of Control Air
Complete	AOI-11	Loss of Condenser Vacuum
Complete	AOI-13	Loss of Essential Raw Cooling Water
Complete	AOI-14	Loss of RHR Shutdown Cooling
Complete	AOI-15	Loss of Component Cooling Water
Complete	AOI-16	Loss of Normal Feedwater
Complete	AOI-17	Turbine Trip
Complete	AOI-18	Malfunction of Pressurizer Pressure Control System
Complete	AOI-20	Loss of Pressurizer Level Control Channel

Complete	AOI-21.01	Loss of 125V DC Vital Battery Bd I
Complete	AOI-21.02	Loss of 125V DC Vital Battery Bd II
Complete	AOI-21.03	Loss of 125V DC Vital Battery Bd III
Complete	AOI-21.04	Loss of 125V DC Vital Battery Bd IV
Complete	AOI-24	RCP Seal Abnormalities during Pump Operation
Complete	AOI-25.01	Loss of 120V AC Vital Instrument Power Bd 1-I
Complete	AOI-25.02	Loss of 120V AC Vital Instrument Power Bd 1-II
Complete	AOI-25.03	Loss of 120V AC Vital Instrument Power Bd 1-III
Complete	AOI-25.04	Loss of 120V AC Vital Instrument Power Bd 1-IV
Complete	AOI-31	Abnormal Release of Radioactive Material
Complete	AOI-33	Steam Generator Tube Leak
Complete	AOI-34	Immediate Boration
Complete	AOI-35	Loss of Offsite Power
Complete	AOI-37	Turbine Runback Response
Complete	AOI-38	Steam leak

Sub Total = 29, Issue by 11/8/93, V&V by 11/29/93

Completion

date	SIs	Title
Complete	1-SI-62-901-A	Centrifugal Charging Pump 1A-A Quarterly Performance Test
Complete	1-SI-62-904	Valve Full Stroke Exercising During Operation Chemical And Volume Control System
Complete	1-SI-63-901-A	Safety Injection Pump 1A-A Quarterly Performance Test
Complete	1-SI-63-902-B	Valve Full Stroke Exercising During Plant Operation - Safety Injection System (Train B)
Complete	1-SI-63-903-A	Valve Full Stroke Exercising During Cold Shutdown - Safety Injection System (Train A)
Complete	0-SI-65-6-A	Emergency Gas Treatment System Train A 10-hour Operation
Complete	0-SI-67-901-A	Essential Raw Cooling Water Pump A-A Performance Test
Complete	0-SI-67-907-A	Valve Full Stroke Exercising During Plant Operation - Essential Raw Cooling Water (Train A)
Complete	0-SI-67-908-A	Valve Full Stroke Exercising During Cold Shutdown - Essential Raw Cooling Water (Train A)
Complete	0-SI-68-902-B	Valve Full Stroke Exercising During Cold Shutdown - Reactor Coolant B-Train PORV
Complete	0-SI-70-902-S	Component Cooling System Pump C-S Quarterly Performance Test
Complete	1-SI-70-904-B	Valve Full Stroke Exercising During Plant Operation - Component Cooling Water (Train B)
Complete	1-SI-72-902-A	Valve Full Stroke Exercising During Plant Operation - Containment Spray (Train A)
Complete	1-SI-74-901-A	Residual Heat Removal Pump 1A-A Quarterly Performance Test
Complete	1-SI-74-902-A	Quarterly Valve Full Stroke Exercising - RHR System (Train A)
Complete	1-SI-81-901	Valve Full Stroke Exercising During Plant Operation - Primary Makeup Water System
Complete	0-SI-211-1	18 Month 6.9kV Shutdown Boards Manual Transfer From Normal to Alternate Power Supply
Complete	0-TRI-100-1	Flood Protection Communication
Complete	TI-257.01	Security Backup Diesel Generator Monthly Test
Complete	TI-57.002	Verification of Normal Position & Seal for Nor-Aux Switches
11/19/93	OTI-46.01	Main Feed Pump Turbine Overspeed Mechanism Test
11/26/93	1-SI-63-8	ECCS Valve Alignment Verification
11/26/93	1-SI-85-2	Reactivity Control Systems Moveable Control Assemblies (Modes 1 & 2)
11/26/93	1-TRI-62-3	Boric Acid Flowpaths: Valve Position Verification
11/30/93	OTI-47.01	Main Turbine Oil Trip Devices & Extraction Nonreturn Valves Monthly Test
12/03/93	1-TRI-68-5	Verification of Reactor Subcritical for 100 hours prior to irradiated Fuel
12/07/93	0-SI-82-2	D/G- AC Electrical Power Source Operability Verification
12/10/93	0-SI-82-11-A	Diesel Generator Start & Load Test
12/10/93	1-SI-0-5	Verification of Predicted Critical Control Rod Position, T _{avg} , and Shutdown Banks
12/10/93	1-SI-62-1	Uncontrolled Boron Dilution Paths
Complete	1-SI-63-9	Cold Leg Accumulator Valves: Power Removal Verification
Complete	1-SI-68-34	Minimum Temperature for Criticality T _{avg} -T _{ref} Deviation Alarm not reset
12/10/93	1-TRI-85-1	Reactivity Control systems Moveable Control Assemblies (Modes 3,4, & 5)

Sub Total = 33, Currently issued = 23, Complete all by 12/15/93

Attachment 3

Current Status of Items Noted in the Simulator Facility Report Portion of the NRC Examination Report No. 50-390/93-300 Dated August 13, 1993, Concerning the Initial License Examinations at Watts Bar Nuclear Plant (WBN)

In response to NRC concerns over simulator modeling, WBN Simulator Services has been evaluating and working toward resolution of the items listed in the NRC examination report. This memorandum details the current status of the 11 items detailed in Enclosure 2 of the report. In addition, the WBN site has committed additional engineering support for FY '94 to assist Simulator Services in improving simulation fidelity and implementing plant modifications. WBN Simulator Services will offer a Simulation Software Engineer to assist the NRC examination preparation team in any simulator related problems, i.e. adding desired malfunctions or remote functions.

1. The Main Steam Line Radiation Monitors did not give the correct indications of a Steam Generator Tube rupture. The monitors continued to indicate an increasing amount of radiation in the steam lines after a reactor trip.

The root cause of this incorrect response is a failure to model N^{16} . RETACT is not capable of modeling an individual isotope. The RETACT code tracks what can best be termed a pseudo-isotope. In order to obtain the desired behavior, the N^{16} half-life and production characteristics have been imposed on the pseudo-isotope at the detectors. In this fashion we have been able to get the expected steam line radiation response.

A description of the Palo Verde event has been obtained and is being examined against the WBN simulator response.

Simulator Services Problem Report - 848

2. The Reactor Vessel Level Indication System (RVLIS) did not indicate properly. It indicated that the reactor vessel was voiding when it was not.

The RVLIS installed in the WBN simulator uses data that is to be empirically determined in the plant at a later date. Using a RETACT calculated level, we are able to bypass these empirically determined coefficients. In this manner we are able to obtain a proper indication of vessel level. The behavior of RVLIS will be revisited after plant data becomes available.

Simulator Services Problem Report - 892

Attachment 3

3. The flows in the Component Cooling System (CCS) were not correct and gave alarms when it appeared that no alarms should have been received.

The CCS flows are being reviewed against predicted engineering performance data as determined in the CCS Required Flows Load List Calculation (EPM-SME-040790), in lieu of actual plant data. The flows will be checked against actual plant data when it becomes available. If it becomes necessary to balance the flows in this system it could require up to three man-months due to the complexity of the FLOWNETS.

WBN has received pictures of the full power flow and valve positions for the SQN CCS in order to perform a reasonableness check.

*Simulator Services Problem Report - 932***4. Only half of the emergency lighting came on in a loss of offsite power (LOOP). The normal control room lights did not re-energize after a LOOP when the diesels re-energized the shutdown boards.**

The lack of fidelity in the simulator emergency lighting has been documented as exception report ER-12 in the certification submittal. It was determined in the past that the best course of action was to keep the simulator lighting lit during a LOOP. Malfunction ED01 was modified for this purpose.

Rather than remove the capability of switching to battery pack lights, a new malfunction ED16 was established. ED16 is functionally equivalent to the original ED01, with the exception of lighting. Malfunction ED16 was not used for training purposes.

The problem with not all battery pack lights energizing has been investigated and was determined to be the result of battery failure. New cells have been installed.

This event has given us reason to re-investigate the simulator lighting situation. It may be possible to achieve better results and we are currently pursuing options. It will not be possible, however, to exactly match the control room emergency lighting without a major building modification.

*Simulator Services Problem Report - 931***5. There was no malfunction to block a control room ventilation isolation signal.**

A malfunction now exists.

Simulator Services Problem Report - 935

Attachment 3

6. There was no malfunction to trip a thermal barrier booster pump.

A malfunction now exists.

Simulator Services Problem Report - 936

7. The simulator did not model the operation of the following valves.

a. thermal barrier booster pump manual discharge isolation

A remote function now exists.

Simulator Services Problem Report - 936

b. auxiliary feedwater manual isolation valve

A remote function now exists.

Simulator Services Problem Report - 937

8. The Safety Parameter Display System did not work.

Computer coding work has now been completed. The screens have been updated to reflect the current configuration.

There are a few suspect data points that we are waiting for notification from Information Systems to determine if they are simulator data point problems or not.

The system is continuously upgraded as the project moves forward for the plant. It should be noted that this is a stimulated system.

Simulator Services Problem Report - N/A (Work not performed by Simulator Services)

9. There were two sporadic problems with the Electrohydraulic Control System.

The problem(s) were not reproducible and they are of unknown origin.

Simulator Services Problem Report - N/A

10. The simulator halted in a scenario with a feed line break inside containment.

The correction implemented is aimed at preventing this from occurring. There are now situations where simulator failures will occur when one or more steam generators dry out.

Attachment 3

Scenarios with this resultant can still be run although long term operation in this state (greater than 30 mins) will not be possible. These include both feedwater breaks and main steam line breaks. The feedwater bypass line break has additional problems and should be avoided. Work will be continuing on these transients.

Simulator Services Problem Report - 903, 904, 706, 851

11. A 100% failure of a tube in the B-5 feedwater heater caused the simulation to halt due to a flooded extraction steam line.

This is a documented simulation "out of bounds" limit and is noted in the certification submittal as such. A "pop-up" occurs on the Instructor Station to notify the instructor that a simulation limit has been reached.

Simulator Services Problem Report - N/A