PARAG. 3A

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

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DIESEL GENERATOR LOAD AND SAFEGUARD SEQUENCE TEST

TECHNICAL REVIEW

PORC 6/16/80

TRSchuler
QC REVIEW

6-25-80
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APPROVED FOR USE

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RSSP-2.2

DIESEL GENERATOR LOAD AND SAFEGUARD SEQUENCE TEST

1.0 PURPOSE:

1.1 To provide instructions for alignment of valves and equipment to be operated during performance of the Diesel Generator Load and Safeguard Sequence Test.

1.2 To provide instructions for verification that the Diesel Generator and all associated Safeguard Equipment will perform their intended functions.

2.0 TEST REQUIREMENTS:

2.1 This test is to be performed during each Reactor Shutdown for refueling.

2.2 Each Diesel Generator must demonstrate its' ability to start automatically and assume its' associated Safeguard Equipment sequence loading schedule upon an actual loss of all normal A.C. station service power supplies together with a simulated Safety Injection Signal.

2.3 Each Diesel Generator must start and close into its respective Safeguard buses in approximately 10 seconds from the initial starting signal as evidenced by traces on a suitable recorder.

2.4 The safeguard Train A (Generator A-Safeguard Buses 14 & 18) loading sequence, from the initiation of the A Diesel Generator starting signal to the closure of 52/R.H.R. 1A (R.H.R. Pump 1A Breaker) shall be 20 seconds or less.

2.4.1 Full loading time of Train A, from the initiation of the A Diesel Generator starting signal to the closure of 52/MAFPIA (Motor Auxiliary Feedwater Pump Breaker) shall be 40 seconds or less.

2.5 The safeguard Train B (Generator B-Safeguard Buses 16 & 17) loading sequence, from initiation of the B Diesel Generator starting signal to the closure of 52/R.H.R. 1B (R.H.R. Pump 1B Breaker) shall be 22 seconds or less.

2.5.1 Full loading time of Train B, from the initiation of the B Generator starting signal to the closure of 52/MAFP 1B (Motor Auxiliary Feedwater Pump Breaker) shall be 42 seconds or less.

2.6 Safety injection pump breakers (52/SIP 1C1 & 1C2) will have a differential time of approx. 2 seconds, not less than 1.5, with 52/SIP1C1 being the longest.

2.7 Adjustments to breaker closure timers (with the exception of 52/CSP 1A & 1B and 52/SIP 1A & 1B) may be made to ensure the above time limitations using Procedure RSSP-2.7.

NOTE: Individual timer settings must not be adjustd such that the associated equipment starts within less than 3 seconds of the equipment preceeding it.

NOTE: The actual time involved for complete train actuation must be considered in relationship to the Plant's "Final Facility Description and Safety Analysis Report". Section 6, page 6.2-29 and Section 8, Table 8.2-4.

2.8 To verify that the Containment Spray Pumps are capable of automatically starting during the Safeguard sequence.

2.9 Verification of the following valve operations:

2.9.1 MOV 871A starts to close in 3.5 seconds (± 1 second) upon failure of 1B SIP to start, after loss of Bus voltage and receipt of S.I. signal.

2.9.2 MOV 871B starts to close in 3.5 seconds (± 1 second) upon failure of 1A SIP to start, after loss of Bus voltage and receipt of S.I. signal.

2.9.3 Spray additive valves HCV-836A and HCV-836B open in 2 minutes $\left(\begin{smallmatrix}-15 \text{ seconds} \\ +30 \text{ seconds}\end{smallmatrix}\right)$ after receipt of their respective trains' containment spray signal.

2.9.4 Service water isolation valve closure upon receipt of coincident loss of normal plant A-C service and Safety Injection Signal.

NOTE: As only one Safeguard train is checked at a time only six valves will close with each train test.

3.0 REFERENCES:

3.1 Plant Technical Specifications, Section 4, Pages 4.5-1 through 4.6-4.

3.2 R.E. Ginna Nuclear Power Plant, Unit No. 1, Final Facility Description and Safety Analysis Report. Sections 6.2, 6.3, 8.2 and Table 8.2-1.

3.3 Westinghouse and RG&E Engineering Flow Prints.

3.3.1 Auxiliary Coolant System

3.3.2 Safety Injection System; Sheets 1 & 2; 33013-425, 432

3.3.3 Reactor Coolant System; 33013-424

3.3.4 Chemical Volume & Control System; 33013-427, 428 & 433

3.4 Westinghouse Logic Diagrams. Print No. 882 D 612, Sheets 4,5,6 and 7.

3.5 Westinghouse Safeguard System Prints, Print No. 110 E 059.

3.6 Elementary Wiring Diagrams, (All applicable breaker and valve sheets).

3.7 Ginna Plant Procedures, PT-12.1 and 12.2, Emergency Diesel Generators.

4.0 INITIAL CONDITIONS:

4.1 The plant is being maintained at cold or refueling shutdown status. _____

4.2 All concerned valves and equipment must be available for use during this test (e.g. No. safeguard valves or pumps can be held for maintenance and/or repair, with the exception of those valves which are required to be maintained closed for test). _____

4.3 Only one Safeguard train will be operated at a time, D.C. control voltage will be removed from the train not being tested. _____

4.4 The Residual Heat Removal System is aligned to the Reactor Coolant Loop for core decay heat removal. _____

NOTE: RHR flow will be interrupted briefly with the testing of each Safeguard train.

4.5 If system status requires the operation of a component cooling water pump, the running pump will be selected opposite to the Safeguard train). _____

4.6 The Four inch service water cross tie valves in the diesel rooms will be open on each Service Water loop. A service water pump opposite to the loop being tested will be in operation, and will not be removed from service until after the selected S.W. pump on the Safeguard train being tested has been started. _____

4.7 A temporary city water supply shall be connected to the "In Service" Instrument and House Service air compressors to ensure no loss of cooling water during test. _____

4.8 Plant conditions are such that containment ventilation isolation can be tolerated during performance of test (approximately 10 minutes with each Safeguard train operation). _____

4.9 Procedure steps, alignment, data verification and restoration of equipment need not necessarily be performed in the order listed. Deviation from the listed order of steps will be under the cognizance of the test co-ordinator. _____

4.10 SPECIAL EQUIPMENT

4.10.1 Multi pen recorder and/or events marker used for monitoring the Safeguard Bus voltages and the operations of the Safeguard train equipment.

TYPE EQUIPMENT USED: _____ _____

DATE CALIBRATED: _____ _____

4.11 Undervoltage relays for 480 Volt Buses 14, 16, 17, and 18 have been calibrated and timed by Relay Dept. prior to start of this test. _____

4.12 Lead Test personnel are qualified in accordance with QC-1104. _____

4.13 Ginna Station Test Tag Control Program, A-48 shall be utilized as required. _____

5.0 PRECAUTIONS:

5.1 Sufficient quantities of diesel fuel is available for one hour operation of Diesel Generator plus that inventory which is necessary to satisfy plant Technical Specifications.

5.2 Residual Heat Removal Pump will be left in service until just prior to the initiation of the Safety Injection signal.

5.3 Ensure that a flow path is provided from the Refueling Water Storage tank to the Reactor vessel (MOV 856 and RHR system).

5.4 In the event that a hazardous operating condition should develop the 60 second delay of Safety Injection reset may be defeated by resetting the Safety Injection relays SF-1 and SF-2 in the relay room (timer setting turned to zero). Control board reset may then be effected.

6.0 INSTRUCTIONS:

6.1 The valve line up listed in the following steps apply to valves associated with the individual major pieces of equipment to be operated during this test. The alignment accomodates equipment for both Safeguard trains, even though each train is tested individually. All remote operated valves will be test tagged at the control location. Manual valves will be test tagged at their field location.

6.2 Safety Injection System Alignment

6.2.1 Close or ensure closed the following MOV valves. Ensure that the breakers for these valves are open, with the D-C control fuses removed. Refer to attached sheet for valve breaker locations.

		Position Prior to Test	Closed for Test Breaker Open Fuses Removed
6.2.1.1	MOV 878A SI discharge to Loop B, Hot Leg	_____	_____
6.2.1.2	MOV 878B SI discharge to Loop B, Cold Leg	_____	_____
6.2.1.3	MOV 878C SI discharge to Loop A, Hot Leg	_____	_____

		Position Prior to Test	Closed for Test Breaker Open Fuses Removed
6.2.1.4	MOV 878D SI discharge to Loop A, Cold Leg		
6.2.1.5	MOV 841 1A Accumulator Discharge		
6.2.1.6	MOV 865 1B Accumulator Discharge		
6.2.1.7	MOV 826A Boric Acid Discharge (Tank A)		
6.2.1.8	MOV 826B Boric Acid Dicharge (Tank A)		
6.2.1.9	MOV 826C Boric Acid Discharge (Tank B)		
6.2.1.10	MOV 826D Boric Acid Discharge (Tank B)		

6.2.2 Close or ensure closed the following valves:

		Position Prior to Test	Closed For Test
6.2.2.1	AOV 835A 1A Accumulator Fill Line		
6.2.2.2	AOV 835B 1B Accumulator Fill Line		
6.2.2.3	AOV 840A Loop A Test Line		
6.2.2.4	AOV 840B Loop A Test Line		
6.2.2.5	AOV 839A Loop B Test Line		
6.2.2.6	AOV 839B Loop B Test Line		
6.2.2.7	1733 Return to RWST from RCDT Pumps (Behind gate to SFP filter vault)		
6.2.2.8	803 Return to RWST from Spent Fuel Pit D.I.		
6.2.2.9	1801 Boric Acid Blender to RWST (By RWST, INT. floor, overhose Sta. #26)		

6.2.3 Open or ensure open the following MOV valves and ensure that the breakers for these valves are open, with the D.C. control fuses removed.

		Position Prior to Test	Valve Open, Breaker Open, Fuses Removed
6.2.3.1	MOV 825A RWST to S.I. pump header		
6.2.3.2	MOV 825B RWST to S.I. pump header		
6.2.3.3	MOV 896A RWST Discharge		

		Position Prior to Test	Valve Open, Breaker Open, Fuses Removed
6.2.3.4	MOV 896B RWST Discharge		
6.2.3.5	MOV 1815A S.I. Pump 1C Suction		
6.2.3.6	MOV 1815B S.I. Pump 1C Suction		

6.2.4 Open or ensure open the following valves:

		Position Prior to Test	Open for Test
6.2.4.1	MOV 871A 1C S.I. pump crossover		
6.2.4.2	MOV 871B 1C S.I. pump crossover		
6.2.4.3	AOV 897 S.I. test line return to RWST		
6.2.4.4	AOV 898 S.I. test line return to RWST		
6.2.4.5	879 test line valve upstream of FI 929		
6.2.4.6	884 test line valve downstream of FI-929		
6.2.4.7	890A 1A S.I. pump suction		
6.2.4.8	888A 1A S.I. pump discharge		
6.2.4.9	890B 1B S.I. pump suction		
6.2.4.10	888B 1B S.I. pump discharge		
6.2.4.11	1820A 1A S.I. pump recirculation		
6.2.4.12	1820B 1C S.I. pump recirculation		
6.2.4.13	1820C 1B S.I. pump recirculation		

6.3 Containment Spray System Alignment

6.3.1 Close or ensure closed the following valves:

		Position Prior to Test	Closed for Test
6.3.1.1	HCV 836A Spray additive tank discharge (Controller in auto)		
6.3.1.2	HCV 836B Spray additive tank discharge (Controller in auto)		
6.3.1.3	873B Spray additive line valve		
6.3.1.4	873A Spray additive line valve		

		Position Prior to Test	Closed For Test
6.3.1.5	868A "A" Spray header discharge to C.V.		
6.3.1.6	868B "B" Spray header discharge to C.V.		
6.3.1.7	Shut offs to pressure gauges monitoring water head above check valve 862A (2856) and 862B (2858)		

6.3.2 Open or ensure open the following valves:

		Position Prior to Test	Open for Test
6.3.2.1	859A 1A C.S. pump recirculation		
6.3.2.2	859B 1B C.S. pump recirculation		
6.3.2.3	858A 1A C.S. pump suction		
6.3.2.4	858B 1B C.S. pump suction		
6.3.2.5	859C Test line return to RWST		
6.3.2.6	859D Test line return to RWST		
6.3.2.7	831A 1A C.S. pump discharge to eductor		
6.3.2.8	831B 1B C.S. pump discharge to eductor		
6.3.2.9	881D Eductor discharge to 1A C.S. pump suction		
6.3.2.10	881C Eductor discharge to 1B C.S. pump suction		
6.3.2.11	864A 1A C.S. pump test line		
6.3.2.12	864B 1B C.S. pump test line		

6.4 <u>Residual Heat Removal System Alignment:</u>

6.4.1 Close or ensure closed the following MOV valves, ensure that the breakers for these valves are open, with D.C. control fuses removed.

		Position Prior to Test	Closed for Test Breaker Open, Fuses Removed
6.4.1.1	MOV 852A Low head core deluge		
6.4.1.2	MOV 852B Low head core deluge		

6.5 Motor Driven Auxiliary Feedwater Pump System Alignment

6.5.1 Close or ensure closed the following MOV valves. Ensure that breakers for these valves are open, with D.C. Control fuses removed.

		Position Prior To Test	Closed for Test Breaker Open Fuses Removed
6.5.1.1	MOV 4007 1A Pump Discharge	_____	_____
6.5.1.2	MOV 4008 1B Pump Discharge	_____	_____

6.5.2 Close or ensure closed the following valves:

		Position Prior To Test	Closed For Test
6.5.2.1	4357 Cross tie between pump discharge	_____	_____
6.5.2.2	4356 Cross tie between pump discharge	_____	_____
6.5.2.3	4360 Cross tie between motor driven pumps and turbine driven pump	_____	_____

6.5.3 Open or ensure open the following valves:

		Position Prior To Test	Open For Test
6.5.3.1	4019 Auxiliary Pump 1A suction	_____	_____
6.5.3.2	4018 Auxiliary Pump 1B suction	_____	_____
6.5.3.3	4070 Condensate Storage Tank outlet	_____	_____
6.5.3.4	4071 Condensate Storage Tank outlet	_____	_____

6.5.4 Ensure that cooling water flow is established to the pump motor bearings and gear oil box cooler. _____

6.5.4.1 Cooling water established for 1A pump. _____

6.5.4.2 Cooling water established for 1B pump. _____

6.5.5 Provide a recirculation path for auxiliary F.W. pumps by opening the respective recirculation valves. The valves are to be maintained open by closing supply air to the valve positioner's reducing valve and then bleeding the entrapped air (Open the reducing valve petcock and leave open). _____

6.5.5.1 1A pump recirculation valve AOV 4304 open. _____

6.5.5.2 1B pump recirculation valve AOV 4310 open. _____

6.5.6 Simulate Main Feed Pumps in operation with breakers in test position by blocking auxiliary switches. _____

NOTE: Blowdown key switches must be in NORMAL position to close MFWP breakers.

6.5.7 Simulate satisfied S/G levels to prevent Auto start of Motor Driven Auxiliary Feedwater Pump. _____

"A" SAFEGUARD TRAIN TEST

6.6 Connect the multi pen recorder and/or events marker to monitor the Safeguard Bus Voltage (14) and the operation of the "A" Safeguard train equipment. These traces will indicate the time for voltage restoration as well as the timed sequence of the equipment. _____

If only the "B" train is to be tested, mark steps 6.6 thru 6.23.11 N.A.

6.6.1 Recorder connected for voltage trace. _____

6.6.2 Recorder connected for breaker 52/CSP 1A operation. _____

6.6.3 Recorder connected for breaker 52/SIP 1A operation. _____

6.6.4 Recorder connected for breaker 52/SIP 1C2 operation. _____

6.6.5 Recorder connected for breaker 52/RHRP 1A operation. _____

6.6.6 Recorder connected for breaker 52/SWP 1A operation _____
or
52/SWP 1C operation _____

6.6.7 Recorder connected for breaker 52/CF 1A operation. _____

6.6.8 Recorder connected for breaker 52/CF 1D operation. _____

6.6.9 Recorder connected for breaker 52/MAFP 1A operation. _____

6.6.10 Recorder connected for valve MOV 871A operation. _____

6.6.11 Connect Visicorder or equivalent to Bus 18 voltmeter for voltage trace. _____

6.7 Place the 1B Diesel start/stop control switch in the pull stop position. _____

6.8 Open D.C. circuit breaker for "B" Safeguard logic train (located in 1B D.C. distribution box at MCB) _____

CAUTION: When opening or closing D.C. circuit breakers for either A or B Safeguard logic train, depress the Safety Injection and Containment Isolation reset push buttons.

6.9 To avoid loss of power at the 1B inst. bus close the maintenance feed breaker in instrument bus cabinet 1B. _____

6.10 Perform the following operations:

6.10.1 Monitor the Containment Spray NaOH additive valve HCV-836A to time the delay time for the valve to open after receipt of the containment spray signal. (Record time on attached data sheet). _____

6.10.2 Place the RHR system bypass controller HCV 626 in the manual mode and adjust system flow for 1500 gpm. _____

6.10.3 Align temporary city water supply to air compressors. _____

6.10.4 Remove the operating RHR pump from service. _____

6.10.5 Ensure that all train "A" Safeguard equipment control switches (pumps and fans to be started) are in the off after trip position. _____

6.10.6 Verify both neon lites for "C" Safety Injection pump are illuminated. _____

6.10.7 Start chart drive motors. _____

6.11 Simultaneously trip the high side 480 volt breakers 52/14SS and 52/18SS. Immediately after this initiate the Safety Injection and containment spray signals by firmly pushing the manual initiation buttons. _____

NOTE: The SI is 1/2 logic and containment spray is 2/2 logic.

6.12 After the Safeguard train sequence has been completed (approximately 40 seconds after initiation of loss of normal 480 volt feed), visually verify by control board indicating lights that all concerned equipment has started. _____

6.13 Permit chart drive for recorder to run for a few seconds after verification that the 1A MAFP has started. Inspect recorder traces and verify that all events occurred within the time tolerance as listed in Test Requirements of this procedure. _____

6.14 Verify that the following service water isolation valves have closed:

6.14.1 MOV 4670 Turbine Building Isolation. _____

6.14.2 MOV 4614 Turbine Building Isolation. _____

6.14.3 MOV 4663 Chiller Service Isolation. _____

6.14.4 MOV 4615 C.C. Heat Exchanger Isolation. _____

6.14.5 MOV 4616 C.C. Heat Exchanger Isolation. _____

6.14.6 MOV 4609 Screen Wash Isolation. _____

6.15 Dispatch a test personnel or operator to the "A" Diesel Room to monitor the lube oil cooler and jacket water temperatures. _____

NOTE: In the event temperature difficulties arise the operator is to notify control room and another S.W. pump will be placed in service immediately.

6.16 Verify that the containment fan service water discharge valve AOV 4561 has tripped to full open position. _____

6.17 Perform the following operations:

6.17.1 Ensure at least one "B" loop Service Water Pump in operation. _____

6.17.2 Open the following Service Water Isolation valves:

6.17.2.1	MOV 4670	Open	_____
6.17.2.2	MOV 4614	Open	_____
6.17.2.3	MOV 4663	Open	_____
6.17.2.4	MOV 4615	Open	_____
6.17.2.5	MOV 4616	Open	_____
6.17.2.6	MOV 4609	Open	_____

6.18 After all other data has been verified for A Safeguard train actuation, reset the following signals:

6.18.1 Safety Injection _____

6.18.2 Containment Spray _____

6.18.3 Containment Ventilation Isolation _____

6.19 Secure the desired data (as per attached data sheet) for the 1A Diesel Generator. _____

6.20 Remove the following A Safeguard equipment from service (utilize procedure PT-12.1 for "A" Diesel Generator unloading rate). _____

6.20.1 Containment Spray Pump _____

6.20.2 1A Safety Injection Pump _____

6.20.3 1C Safety Injection Pump _____

6.20.4 1A RHR Pump _____

6.20.5 1A or 1C Service Water Pump _____

6.20.6 1A Containment Fan _____

6.20.7 1D Containment Fan _____

6.20.8 1A Auxiliary Feedwater Pump _____

6.21 Return containment fan service water discharge valve (MOV 4561) to normal throttling position by relatching the solenoid trip mechanism. _____

6.22 Disconnect the A Diesel Generator from Safeguard Buses 14 and 18 (utilize procedure PT-1 for correct step sequence). _____

6.23 Perform the following steps to establish normal A.C. feed for Buses 14 and 18 and to return other equipment to conditions desired.

6.23.1 Close Bus 14, High Side Breaker 52/14SS. _____

6.23.2 Close Bus 14, Low Side Breaker 52/14. _____

6.23.3 Close Bus 18, High Side Breaker 52/18SS. _____

6.23.4 Close Bus 18, Low Side Breaker 52/18. _____

6.23.5 Return to service Service Water Pump 1A or 1C. _____

6.23.6 Return Residual Heat Removal Pump 1A to service. _____

6.23.7 Open MOV 871A. _____

6.23.8 Verify that NaOH additive valve HCV-836A has returned to its closed position. _____

6.23.9 Re-establish D.C. control voltage for B Safeguard logic train. _____

NOTE: Observe caution of step 6.8.

6.23.10 Return Instrument Bus 1B to normal feed by opening maintenance breaker in bus cabinet. _____

6.23.11 Verify MCC 1G is being fed by 1G1 breaker (Bus 18). _____

B SAFEGUARD TRAIN TEST

6.24 If only the "A" train is to be tested, mark steps 6.24.1 thru 6.32.6.19 N.A.

6.24.1 Connect the Multi Pen recorder and/or events marker to monitor the Safeguard Bus voltage (16) and the operation of Safeguard Train B equipment. _____

6.24.1.1 Recorder connected for voltage trace. _____

6.24.1.2 Recorder connected for breaker 52/CSP 1B operation. _____

6.24.1.3 Recorder connected for breaker 52/SIP 1B operation. _____

6.24.1.4 Recorder connected for breaker 52/SIP 1C1 operation. _____

6.24.1.5 Recorder connected for breaker 52/RHRP 1B operation. _____

6.24.1.6 Recorder connected for breaker 52/SWP 1B operation _____
or
52/SWP 1D operation _____

6.24.1.7 Recorder connected for breaker 52/CF 1B operation. _____

6.24.1.8 Recorder connected for breaker 52/CF 1C operation. _____

6.24.1.9 Recorder connected for breaker 52/MAFP 1B operation. _____

6.24.1.10 Recorder connected for valve MOV 871B operation. _____

6.24.1.11 Connect Visicorder to Bus 17 voltmeter for voltage trace. _____

6.24.2 Place the 1A Diesel start stop control switch in the pull stop position. _____

6.24.3 Place "B" Diesel in Automatic Start "Stand By Status" and ensure that starting circuits have been reset. _____

6.24.4 Open D.C. circuit breaker for "A" Safeguard logic train (located in 1B D.C. distribution box at MCB). _____

CAUTION: When opening or closing DC Circuit breakers for either A or B Safeguard logic train, depress the Safety Injection and Containment Isolation Reset push buttons.

6.24.5 Place the RHR system by-pass controller HCV-626 in manual mode and adjust system flow for 1500 gpm. _____

6.24.6 Align temporary city water supply to air compressors. _____

6.24.7 Monitor the containment spray NaOH additive valve HCV-836B to time the delay time for the valve to open after receipt of the containment Spray signal (record time on attached data sheet). _____

6.24.8 Remove the operating RHR pump from service. _____

6.24.9 Transfer Auxiliary Building Lighting Transformer to MCC 1C supply. _____

6.24.10 Verify both neon lites for "C" Safety Injection pump are illuminated. _____

6.24.11 Start chart drive motors. _____

6.25 Simultaneously trip the High Side breakers 52/16SS and 52/17SS. Immediately after this, initiate the Safety Injection and Containment Spray Signals by firmly pushing the manual initiation buttons. _____

NOTE: The S.I. is 1/2 logic and containment spray is 2/2 logic.

6.26 After the Safeguard train sequence has been completed (approximately 40 seconds after initiation of loss of normal 480 voltage feed) visually verify by control board indicating lights that all concerned equipment has started. _____

6.27 Permit chart drive for recorder to run for a few seconds after verification that the 1B MAFP has started. Inspect recorder traces and verify that all timed events occurred within the time tolerance as listed in test requirements of this procedure. _____

NOTE: Repeat test if traces or times (after corrective settings of time delay relays) are not satisfactory.

6.28 Verify the following Service water isolation valves have closed.

6.28.1 MOV 4664 Turbine Building Isolation _____

6.28.2 MOV 4613 Turbine Building Isolation _____

6.28.3 MOV 4733 Chiller Service Isolation _____

6.28.4 MOV 4734 C.C. Heat Exchanger Isolation _____

6.28.5 MOV 4735 C.C. Heat Exchanger Isolation _____

6.28.6 MOV 4780 Screen Wash Isolation _____

6.29 Dispatch a test personnel or operator to the "B" Diesel Room to monitor the lube oil cooler and jacket water temperature. _____

NOTE: In the event temperatuer difficulties arise the operator is to notify Control Room and another S.W. Pump will be placed in service immediately.

6.30 Verify that the containment fan service water discharge valve AOV 4562 has tripped to full open position. _____

6.31 Perform the following operations:

6.31.1 Ensure at least one "A" loop Service Water Pump in operation. _____

6.31.2 Open Service Water Isolation Valve MOV 4664. _____

6.31.3 Open Service Water Isolation Valve MOV 4613. _____

6.31.4 Open Service Water Isolation Valve MOV 4733. _____

6.31.5 Open Service Water Isolation Valve MOV 4734. _____

6.31.6 Open Service Water Isolation Valve MOV 4735. _____

6.31.7 Open Service Water Isolation valve MOV 4780. _____

6.32 After all other data has been verified for the "B" Safeguard train, perform the following:

6.32.1 Reset Safety Injection Signal. _____

6.32.2 Reset Containment Spray Signal. _____

6.32.3 Reset Containment Ventilation Isolation Signal. _____

6.32.4 Close Containment Fan Service Water Discharge Valve MOV 4562 by relatching the solenoid trip mechanism. _____

6.32.5 Secure the desired data (as per attached data sheet) for the 1B Diesel Generator. _____

6.32.6 Remove the following running equipment from service (utilize procedure PT-12.2 for unloading rate). _____

6.32.6.1 1B Containment Spray Pump. _____

6.32.6.2 1B Safety Injection Pump. _____

6.32.6.3 1C Safety Injection Pump. _____

6.32.6.4 1B Residual Heat Removal Pump. _____

6.32.6.5 1B or 1D Service Water Pump. _____

6.32.6.6 1B Containment Fan. _____

6.32.6.7 1C Containment Fan. _____

6.32.6.8 1B Auxiliary Feedwater Pump. _____

6.32.6.9 Disconnect the Diesel Generator from Safeguard Buses 16 and 17 (utilize Procedure PT-12.2 for correct step sequence). _____

6.32.6.10 Return Bus 16 High Side Breaker 52/16SS to service. _____

6.32.6.11 Return Bus 16 Low Side Breaker 52/16 to service. _____

6.32.6.12 Return Bus 17 High Side Breaker 52/17SS to service. _____

6.32.6.13 Return Bus 17 Low Side Breaker 52/17 to service. _____

6.32.6.14 Return Service Water Pump 1B or 1D to service. _____

6.32.6.15 Return RHR pump to service (set flow as desired). _____

6.32.6.16 Open MOV 871B. _____

6.32.6.17 Verify that NaOH additive valve HCV-836B has returned to its closed position. _____

6.32.6.18 Re-establish D.C. control voltage for "A" Safeguard logic train. _____

CAUTION: When opening or closing DC circuit breakers for either A or B Safeguard logic train, depress the Safety Injection and Containment Isolation reset push buttons.

6.32.6.19 Return Aux. Bldg. lighting transformer to normal supply MCC-1D. _____

6.32.6.20 Ensure that all Starting circuits for both A & B diesel have been reset (refer to procedure PT-12.2) and that diesels are in automatic start "Stand By Status". _____

6.32.6.21 Submit work order to remove temporary cooling water connections from the Station air compressor and to return to normal Service water cooling.

6.32.6.22 Close 1A & 1B Motor Driven Aux. F.W. Pump Recirculation Valves by closing bleed at reducing valve of positioner and then turning on positioner supply air. _____

6.32.6.23 Remove blocking from Main Feed Pump breakers. _____

6.32.6.24 Notify Shift Foreman that test is complete. _____

6.33 Upon completion of test, all test tags are to be removed. The system may, upon instruction from the Shift Foreman, be returned to "as found" alignment or returned to operations for subsequent alignment consistant with plant conditions.

		Returned to "as found" Alignment	Returned to Operation's Control
6.33.1	MOV 878A	_____	_____
6.33.2	MOV 878B	_____	_____
6.33.3	MOV 878C	_____	_____
6.33.4	MOV 878D	_____	_____
6.33.5	MOV 841	_____	_____
6.33.6	MOV 865	_____	_____
6.33.7	MOV 826A	_____	_____
6.33.8	MOV 826B	_____	_____
6.33.9	MOV 826C	_____	_____
6.33.10	MOV 826D	_____	_____

		Returned to "as found" Alignment	Returned to Operation's Control
6.33.11	AOV 835A		
6.33.12	AOV 835B		
6.33.13	AOV 840A		
6.33.14	AOV 840B		
6.33.15	AOV 839A		
6.33.16	AOV 839B		
6.33.17	1733		
6.33.18	803		
6.33.19	1801		
6.33.20	MOV 825A		
6.33.21	MOV 825B		
6.33.22	MOV 896A		
6.33.23	MOV 896B		
6.33.24	MOV 1815A		
6.33.25	MOV 1815B		
6.33.26	AOV 897		
6.33.27	AOV 898		
6.33.28	879		
6.33.29	884		
6.33.30	890A		
6.33.31	890B		
6.33.32	888A		
6.33.33	888B		
6.33.34	1820A		
6.33.35	1820B		
6.33.36	1820C		

		Returned to "as found" Alignment	Returned to Operation's Control
6.33.37	873B		
6.33.38	873A		
6.33.39	868A		
6.33.40	868B		
6.33.41	Gauge Shut off for check valves 862A (2856) & 862B (2858)		
6.33.42	859A		
6.33.43	859B		
6.33.44	858A		
6.33.45	858B		
6.33.46	859C		
6.33.47	859D		
6.33.48	831A		
6.33.49	831B		
6.33.50	881D		
6.33.51	881C		
6.33.52	864A		
6.33.53	864B		
6.33.54	MOV 852A		
6.33.55	MOV 852B		
6.33.56	MOV 4007		
6.33.57	MOV 4008		
6.33.58	4357		
6.33.59	4356		
6.33.60	4360		
6.33.61	4019		

		Returned to "as found" Alignment	Returned to Operation's Control
6.33.62	4018	_____	_____
6.33.63	4070	_____	_____
6.33.64	4071	_____	_____

COMPLETED BY: _____

DATE COMPLETED: _____

SHIFT SUPERVISOR: _____

RESULTS & TEST REVIEW: _____ DATE _____

SAFEGUARD TRAIN A DATA SHEET

Breaker Closure	Time (seconds) After Voltage is restored to Safeguard Bus
52/CSP 1A	_____seconds
52/SIP 1A	_____seconds
52/SIP 1C2	_____seconds
52/RHRP 1A	_____seconds
52/SWP 1A or 52/SWP 1C	_____seconds
52/CF 1A	_____seconds
52/CF 1D	_____seconds
52/MAFP 1A	_____seconds

Diesel Start Time _____sec.

Generator Voltage _____volts

Phase Current A _____amps

Phase Current B _____amps

Phase Current C _____amps

Generator Power _____KW

Generator Power Factor_____

Generator Frequency _____cps

Closure time delay for MOV 871A _____seconds

Opening time delay for NaOH additive valve HCV-836A _____seconds

DATE COMPLETED: _____

COMPLETED BY: _____

SAFEGUARD TRAIN B DATA SHEET

Breaker Closure	Time (seconds) After Voltage is restored to Safeguard Bus		
52/CSP 1B	_____seconds	Diesel Start Time	_____sec.
52/SIP 1B	_____seconds	Generator Voltage	_____volts
52/SIP 1C1	_____seconds	Phase Current A	_____amps
52/RHRP 1B	_____seconds	Phase Current B	_____amps
52/SWP 1B or 52/SWP 1D	_____seconds	Phase Current C	_____amps
52/CF 1B	_____seconds	Generator Power	_____KW
52/CF 1C	_____seconds	Generator Power Factor	_____
52/MAFP 1B	_____seconds	Generator Frequency	_____cps

Closure time delay for MOV 871B _____seconds

Opening time delay for NaOH additive valve HCV-836B _____seconds

DATE COMPLETED: _____

COMPLETED BY: _____

VALVE POWER SUPPLY AND BREAKER POSITION

STEP	MOV	MCC	POSITION
6.2.1.1	878A	C	8-C
6.2.1.2	878B	D	8-C
6.2.1.3	878C	C	8-F
6.2.1.4	878D	D	8-F
6.2.1.5	841	C	12-F
6.2.1.6	865	D	12-C
6.2.1.7	826A	C	9-C
6.2.1.8	826B	C	9-F
6.2.1.9	826C	D	9-C
6.2.1.10	826D	D	9-F
6.2.3.1	825A	C	9-J
6.2.3.2	825B	D	9-J
6.2.3.3	896A	C	8-M
6.2.3.4	896B	D	8-M
6.2.3.5	1815A	C	15-M
6.2.3.6	1815B	D	16-J
6.2.4.1	871A	C	11-C
6.2.4.2	871B	D	11-C
6.4.1.1	852A	C	7-J
6.4.1.2	852B	D	7-J
6.5.1.1	4007	C	6-M
6.5.1.2	4008	D	6-M