EXHIBIT 4

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION

Dated 12/27/83

GP-2 NORMAL PLANT STARTUP

1.0 PURPOSE

The purpose of this procedure is to provide the proper sequence of operations to start up a unit and its associated auxiliary systems from a shutdown and cooled down condition to rated power output.

2.0 PREREQUISITES

2.1 Applicable portions of GP-1, Preparations for Plant Startup, completed as required by plant management. Obtain approval for startup from Station Superintendent or alternate, and affix Attachment I (from Appendix I to GP-2) to the front of this procedure.

2.2 The plant should be basically in the following conditions prior to a startup (this list serves as a reminder and is flexible at the discretion of shift supervision):

2.2.1 Control room annunciators operable. _____/____ Initial Date

2.2.2 No battery ground indications. _____/____ Initial Date

2.2.3 No significant control room instrumentation problems. _____/____ Initial Date

2.2.4 Schuylkill River and/or Perkiomen Creek makeup systems available, traveling screens operable, and trash bins empty. _____/____ Initial Date

2.2.5 Service Water System in operation per procedure S10.1.A. _____/____ Initial Date

2.2.6	Air ejectors and off-gas system available.	_____/____ Initial Date
2.2.7	CRD system in normal operation as per procedure S46.1.A.	_____/____ Initial Date
2.2.8	Standby liquid control squib monitors lighted.	_____/____ Initial Date
2.2.9	TECW and RECW operational per procedures S14.1.A and S13.1.A, respectively.	_____/____ Initial Date
2.2.10	Drywell floor drain and equipment drain system operational per S61.1.A.	_____/____ Initial Date
2.2.11	At least two instrument air compressors available or operating per procedure S15.1.A.	_____/____ Initial Date
2.2.12	Reactor Water Cleanup System in operation per procedure S44.1.A.	_____/____ Initial Date
2.2.13	Cooling tower available.	_____/____ Initial Date
2.2.14	SGTS and reactor enclosure ventilation normal, with reactor enclosure slightly negative in pressure (between 0 and -0.25 inch water).	_____/____ Initial Date
2.2.15	Drywell coolers in service per procedure S77.1.A.	_____/____ Initial Date
2.2.16	One drywell chiller and one chilled water pump operating per procedure S87.1.A.	_____/____ Initial Date
2.2.17	Main Steam Line Radiation Monitors not known to be inoperable.	_____/____ Initial Date

2.2.18 Process liquid monitors valved in service and operating per the appropriate system 26 operating procedures. _____/____ Initial Date

2.2.19 Area radiation monitors normal. _____/____ Initial Date

2.2.20 North and South stack radiation monitors not known to be inoperable. _____/____ Initial Date

2.2.21 Control room and radwaste building radiation monitors not known to be inoperable. _____/____ Initial Date

2.2.22 Containment atmosphere sampling system not known to be inoperable. _____/____ Initial Date

2.2.23 Auxiliary Steam System in operation per procedure S21.1.A. _____/____ Initial Date

2.2.24 220KV (500 KV) generator output breakers closed with generator disconnect open and blocked to shift supervision. No lockout relays are tripped. _____/____ Initial Date

2.2.25 ECCS panels indicating normal valve lin.-up and electrical feeds on all v'ves. Note specifically and ensure that the following conditions exist: _____/____ Initial Date

a. HPCI and RCIC steam supply valves are closed if reactor pressure is less than 100 psig. _____/____ Initial Date

	b. Shutdown cooling and head spray valves closed.	_____/____ Initial Date
2.2.26	Bypass Leakage Barrier Block Valves HV-41-142 (242) and 143 (243) are open and Bypass Leakage Barrier Vent Valves HV-41-140 (240) and 141 (242) are closed.	_____/____ Initial Date
2.2.27	All main steam relief valve switches are in "AUTO" or "CLOSE".	_____/____ Initial Date
2.2.28	Process computer is operational.	_____/____ Initial Date
2.2.29	No abnormal alarm lights on the Full Core Display.	_____/____ Initial Date
2.2.30	Instrument nitrogen system should be in operation per S59.1.A with both instrument air backup valves closed.	_____/____ Initial Date
2.2.31	The condensate and refueling water transfer system operational per S08.1.A.	_____/____ Initial Date
2.2.32	Fire protection system operational per procedure S22.1.A.	_____/____ Initial Date
2.2.33	Motor operated valves on FW heater dump and drain lines opened.	_____/____ Initial Date
2.2.34	Generator stator and rotor temperature recorders and generator core monitor operable.	_____/____ Initial Date

2.2.35	Sufficient capacity exists in the radwaste system for plant startup. CST and RWST inventories compatible with startup requirements.	_____/____ Initial Date
2.2.36	480 V AC systems lined up per procedures S93.1.A and S93.1.B.	_____/____ Initial Date
2.2.37	4 KV System lined up normally per S92.9.A and diesel generators set up for automatic operation per S92.1.N.	_____/____ Initial Date
2.2.38	13 KV System lined up normally per S91.9.A.	_____/____ Initial Date
2.2.39	RPS/UPS and Computer Static Inverters in service per S94.1.A,B,C.	_____/____ Initial Date
2.2.40	Emergency Shutdown Panel switches aligned per S88.1.A.	_____/____ Initial Date

3.0 PROCEDURE

This procedure is broken up into five sections, as delineated below. Entry into the procedure may be made from various plant conditions depending upon previous events. It is the intent of this procedure to be used for guidance and direction only. However, when entering into the procedure at some place other than the beginning, previous steps should be verified as having been accomplished at some earlier time, or as not applicable, before proceeding.

SECTION 3.1 Prior to Reactor Startup

SECTION 3.2 Approach to Critical and Heatup to 212 degrees F.

SECTION 3.3 Heatup and Pressurization to Rated Temperature and Pressure (Two turbine bypass valves open and recombiner in-service).

SECTION 3.4 Startup and Synchronization of the Unit.

SECTION 3.5 Increasing Power to Rated.

3.1 PRIOR TO REACTOR STARTUP

3.1.1 Verify that Maintenance or other operations which effect reactor safety are complete (Work on tech. spec. equipment or instruments). _____/_____ Initial Date

a. I&C Group verify all required surveillance tests are complete. _____/_____ Initial Date

b. I&C Group verified that instrument valves have been lined up in accordance with approved procedures. _____/_____ Initial Date

c. If a Safety Relief Valve(s) failed to function as designed as a cause of or during the shutdown prior to this startup, verify that the valve was replaced with a new or reconditioned valve, or that the failed valve itself was removed from service, disassembled, inspected, adjusted and pressure setpoint tested with steam (NRC IE Bulletin No. 80-25). _____/_____ Initial Date

3.1.2 Review all open permits to determine their effect on plant operation (Work on tech. spec. equipment or instruments). _____/_____ Initial Date

3.1.3	Review the Temporary Circuit Alteration (TCA) Log to ensure that no jumpers are installed which affect safe operation of the plant.	Initial / Date
3.1.4	Review the Locked Valve Log to ensure that valve positions are satisfactory for plant startup.	Initial / Date
3.1.5	Review outstanding MRF's to determine their impact on plant operation.	Initial / Date
3.1.6	Complete GP-1 if required by Engineer-Operations or alternate, and file with the startup package. (If not required, mark this step N/A.	Initial / Date
3.1.7	If shutdown was due to a scram, verify that GP-18 (C.O.L.) has been completed prior to startup.	Initial / Date
3.1.8	Complete ST-6-043-760-1 Recirc Pump Disch. Valve Operability if it has not been performed in the last 31 days.	Initial / Date
3.1.9	CHECK LIQUID NITROGEN INVENTORIES. ORDER LN2 AS NECESSARY TO ENSURE SUFFICIENT QUANTITY TO INERT CONTAINMENT. CONTAINMENT INERTING MUST BEGIN AS EARLY AS POSSIBLE PER S57.1.A.	Initial / Date

3.1.10 If a drywell entry has been made, verify open position for the following locked valves by verifying open indication in the control room. _____/_____ Initial Date

a. 51-1F065A,B,C,&D (2F065A,B,C,&D) - LP I Injection Block Valves at Panel 10C601 (20C601) _____/_____ Initial Date

b. 51-1F077 (2F077) and 51-1F060A & B (2F060A & B) - Shutdown Cooling Suction and Return Manual Block Valves at Panel 10C601 (20C601) _____/_____ Initial Date

c. 52-1F007A & B (2F007A & B) - Core Spray Injection BLock Valves at Panel 10C601 (20C601 _____/_____ Initial Date

d. 48-1F006 (2F006) - SLC Injection Block Valve at Panel 10C603 (20C603). _____/_____ Initial Date

3.1.11 If a drywell entry has been made, perform an alignment of non-automatic containment isolation valves per (GP-1 (COL-3). If this was already done with GP-1, mark this "N/A". _____/_____ Initial Date

3.1.12 SRM Detectors. _____/_____
Initial Date

a. Ensure that I&C performs the SRM Channel Functional Tests: ST-2-074-600-1(2), 601-1(2), 602-1(2) and 603-1(2). _____/_____
Initial Date

b. Verify SRM detectors are fully inserted and perform SRM Count Rate Checks, ST-6-074-360-1(2). _____/_____
Initial Date

c. Indicate any bypassed SRM channels: A__ B__ C__ D__ None__ _____/_____
Initial Date

3.1.13 IRM Detectors.

a. Ensure that I&C performs the IRM Channel Functional Tests: ST-2-074-608-1(2), 609-1(2), 610-1(2), 611-1(2), 612-1(2) 613-1(2), 614-1(2), and 615-1(2). If the startup exceeds 7 days, these ST's must be performed once per week. _____/_____
Initial Date

b. Verify all IRM detectors are fully inserted, all console recorders are selected to IRM, all IRM range switches are on range 1, and perform IRM Channel Checks, ST-6-107-590-1(2). _____/_____
Initial Date

c. Indicate any bypassed IRM channels:
A__ B__ C__ D__
E__ F__ G__ H__ None__ _____/____ Initial Date

3.1.14 APRM Detectors.

a. Ensure that I&C performs the APRM Channel Functional Tests: ST-2-074-616-1(2), 617-1(2), 618-1(2), 619-1(2), 620-1(2), and 621-1(2). _____/____ Initial Date

b. Verify that each APRM has the minimum required number of inputs per level and total by performing the appropriate section of the Surveillance Log, ST-6-107-590-1(2). _____/____ Initial Date

c. Indicate any bypassed APRM channels:
A__ B__ C__ D__ E__ F__ None__ _____/____ Initial Date

3.1.15 Verify that all rods that were bypassed on the reactor manual control system are unbypassed per procedure S73.0.E. _____/____ Initial Date

3.1.16 Verify rod worth minimizer is in service and perform ST-6-073-320-1(2). _____/____ Initial Date

3.1.17 Verify the rod sequence control system (RSCS) is in service and perform ST-6-073-330-1(2). _____/____ Initial Date

3.1.18 Verify the rod block monitor (RBM) is operational and ensure I&C performs ST-2-074-622-1(2)and 623-1(2). _____/____ Initial Date

3.1.19 Verify all operable control rods are fully inserted and that the rod position indication system is operational by performing ST-6-107-320-1(2). _____/_____ Initial Date

3.1.20 Ensure that Maintenance performs ST-4-107-950-1(2) to verify the CRD housing support is in place after any disassembly. _____/_____ Initial Date

3.1.21 Verify the ADS system including the safety relief valves are operable by performing ST-6-050-760-1(2). _____/_____ Initial Date

3.1.22 When both reactor recirculation pumps are operating, verify all jet pumps are operable by performing ST-6-042-360-1(2). _____/_____ Initial Date

3.1.23 Verify that the reactor coolant is being sampled per RT-5-000-014-0 and that the chemistry meets the specifications of ST-5-041-800-1(2). _____/_____ Initial Date

3.1.24 Verify the offgas system hydrogen analyzers are in normal line-up and place in service per procedures S69.1.B and S69.1.C. _____/_____ Initial Date

3.1.25 Prior to drywell closeout, have shift supervision perform an inspection to verify:

a. All insulation in place.

b. All scaffolding removed.

c. No foreign material in drywell.

d. All temporary shielding removed.

e. General cleanliness.

f. Undervessel platform locked in position appropriate for reactor operation. _____/_____ Initial Date

3.1.26 Within 72 hours of closure, perform a leak test of the primary containment air locks per ST-1-060-320-1(2). If maintenance was performed on the airlock, use ST-1-060-470-1(2). _____/_____ Initial Date

3.2 APPROACH TO CRITICAL AND HEATUP TO 212 DEGREES F

3.2.1 Place the circulating water system, including two circ. wtr. pumps, in operation per procedure S09.1.A. Place the water box scavenging system in operation per S09.8.A. _____/_____ Initial Date

3.2.2 Verify the Main Steam to Hotwell Steam Spargers Valve HV-01-109(209) is closed. _____/_____ Initial Date

3.2.3 Verify the main condenser vacuum breakers, HV-07-142(242), 143(242), 144(244), and 145(245), and the steam packing exhauster steam inlet valves, HV-07-140A, B (240A,B), are closed. Verify the mechanical vacuum pump and the steam packing exhauster blowers are "OFF." _____/_____ Initial Date

3.2.4 Fill and vent the condensate and feedwater systems per procedure S05.3.A. _____/_____ Initial Date

3.2.5	Place the condensate system in operation with one cond. pump running per S05.1.A.	_____/_____ Initial Date
3.2.6	Verify the RFP and reactor vessel level controllers are in "MANUAL" with bias adjusts set at 50%.	_____/_____ Initial Date
3.2.7	Place the feedwater system in long path recirculation and flush all piping and components per procedure S06.5.A.	_____/_____ Initial Date
3.2.8	Verify the reactor mode switch is in "SHUTDOWN" or "REFUEL".	_____/_____ Initial Date
3.2.9	Verify the "Discharge Volume Hi Water Bypass" key switch is in "NORMAL".	_____/_____ Initial Date
3.2.10	Operate the NSSSS isolation reset switches to ensure NSSSS logics are reset and alarms have cleared.	_____/_____ Initial Date
3.2.11	Verify the master recirculation flow controller is in "MANUAL" and set at minimum output.	_____/_____ Initial Date
3.2.12	Place the reactor recirculation system in operation (with both recirc. pumps, if possible) per procedure S43.1.A.	_____/_____ Initial Date
3.2.13	Perform Operational Hydrostatic Test per GP-10 as necessary. Excess flow check valve testing and scram time testing may also be performed at this time if necessary.	_____/_____ Initial Date

3.2.14	Verify the reactor head vents, HV-41-1F001 (2F001) 1F002 (2F002), 1F005 (2F005) are open. If the MSIV's are open, the preferred vent path is through 1F005 (2F005) to the main condenser.	_____/____ Initial Date
3.2.15	Verify the Main Steam Line Drains HV-41-1F016 (2F016), 1F019 (2F019), 1F020 (2F020) and 1F021 (2F021) are open.	_____/____ Initial Date
3.2.16	Place the other two circulating water pumps in service to ensure their operability early.	_____/____ Initial Date
3.2.17	Startup the Steam Seal System per procedure S37.1.A and establish main turbine seals. Seal the RFP turbines by opening the 1A, B, C (2A, B, C) RFPT Steam Seal Admission MOV's HV-07-110A, B, C (210A, B, C) and opening each RFPT Exhaust Valve, HV-06-116A, B, C (216A, B, C).	_____/____ Initial Date
3.2.18	Commence drawing a vacuum with the air ejectors supplied from auxiliary steam (per procedure S07.1.C) or with the mechanical vacuum pump (per procedure S07.1.B). Place the Recombiner and the Charcoal Delay Offgas Systems in service per procedure S69.1.D and S70.1.C, respectively.	_____/____ Initial Date

3.2.19 Commence containment inerting per procedure S57.1.A so that oxygen concentration is less than four percent by volume within 24 hours of placing the Reactor Mode Switch into "RUN". _____/_____ Initial Date

3.2.20 Verify or place the Reactor Mode Switch in "STARTUP". _____/_____ Initial Date

VERIFY THE REACTOR COOLANT SYSTEM TEMPERATURE AND PRESSURE ARE WITHIN TECH. SPEC. LIMITS BY PERFORMING ST-6-107-640-1(2) WITHIN 15 MINUTES PRIOR TO CONTROL ROD WITHDRAWAL AND DURING THE SYSTEM HEATUP.

3.2.21 When the "RWM Rod Sequence" for startup has been received from the Reactor Engineer or alternate, make the following announcement over the plant public address system: "UNIT ONE (TWO) REACTOR IS READY FOR STARTUP. ROD WITHDRAWAL WILL BEGIN IN TWO MINUTES." _____/_____ Initial Date

3.2.22 Commence rod withdrawal in accordance with the "RWM Rod Sequence" for startup. Take the reactor critical and commence adding heat per Appendix I to GP-2. _____/_____ Initial Date

FOLLOW BOTH PROCEDURES GP-2 AND GP-2, APPENDIX I CONCURRENTLY.

3.2.23 Close or verify closed the reactor head vent to CRW valves HV-41-1F001 (2F001) and 1F002 (2F002) before reaching a vessel water temperature of 200 degrees F. _____/_____ Initial Date

3.2.24 Continue rod withdrawal until 212 degrees F has been reached and the console reactor pressure indicators begin to respond. _____/____ Initial Date

3.3 HEATUP TO RATED TEMPERATURE AND PRESSURE

Plant status is the same as in the beginning of Section 3.2 with the following additions: the reactor is critical at 212 degrees F, the head vents to CRW are closed, the SRM's are withdrawn, the IRM's are nominal midscale on range 8, all four circulating water pumps are running, condenser vacuum is established, the main and RFP turbines are sealed, and the mode switch is in "STARTUP".

IRM RESPONSE TO INDIVIDUAL ROD WITHDRAWAL IS LOCAL AND RATHER SLOW UNTIL A "BLACK AND WHITE" ROD PATTERN IS REACHED. WHEN THE FIRST INTERIOR ROD IS WITHDRAWN AFTER ACHIEVING A BLACK AND WHITE PATTERN, IRM RESPONSE IS SIGNIFICANTLY MORE PRONOUNCED, AND RODS SHOULD NO LONGER BE FULLY WITHDRAWN IN THE CONTINUOUS NOTCH OVERRIDE MODE.

3.3.1 Continue rod withdrawal and maintain slightly less than 100 degrees F/hr heatup rate. _____/____ Initial Date

3.3.2 Prepare the main turbine for operation per procedure S01.1.A. _____/____ Initial Date

FOLLOW S01.1.A CONCURRENTLY WITH GP-2.

3.3.3 Place the main steam to Hotwell Steam Spargers in service by opening HV-01-109 (209) and by opening the controllers HV-C-05-110A,B,C (210A,B,C) as necessary to maintain respective condenser dissolved oxygen concentration within the limits prescribed by the plant chemist. This can be monitored in the MCR on Panel 10C652 (20C652) at ARSH-23-110 (210) but should be backed up by periodic sampling and analysis. (References: Letter entitled Deaerating Assist Steam Spargers", D.A. DiPaolo, 7/4/83, File: Equip 1-12-5; GE SIL No. 136, Supplement 3, Revision 1 Appendix A).

_____/_____
Initial Date

100 psig

3.3.4 As soon as the 100 psig isolation resets on the HPCI turbine, open the steam supply valves to both the HPCI and RCIC turbines slowly. Attempt to minimize thermal shock to the piping by pressurizing the steam supply lines through the warmup valve, over a nominal half hour period, per procedures S55.1.B and S49.1.B.

_____/_____
Initial Date

3.3.5 When reactor vessel level can no longer be maintained by CRD and RWCU systems, secure the RWCU blowdown flowpath by closing the Dump Valve Manual Control Valve HV-C-44-1F033 (2F033) and the Discharge to Main Condenser Valve HV-44-1F034 (2F034) or the Discharge to Radwaste Valve HV-44-1F035 (2F035), if applicable. Close the Orifice Bypass Valve HV-44-1F031 (2F031), if open. Ensure the RWCU Return Shutoff Valve HV-44-1F042 (2F042)is full open to return all RWCU flow to the reactor vessel.

_____/_____
Initial Date

3.3.6 If it is desired to manually control RPV level, commence feeding the reactor through the RFP Startup Bypass Valves HV-C-06-120 (220), 06-1019 (2019) and 06-1018 (2018). Modulate HV-C-06-120 (220) as necessary to maintain RPV level at a nominal 30 inches. The 1A (2A) RFP Discharge Bypass Valve LV-C-06-138A (238A) should be placed in "MANUAL" and closed to prevent the valve from modulating.

_____/_____
Initial Date

3.3.7 If it is desired to automatically control RPV level, ensure LV-C-06-138A (238A) is in "AUTO", with its setpoint at 30 inches. This will allow flow to pass through the 1A (2A) RFP to maintain RPV level. _____/_____ Initial Date

IF SMOOTH OPERATION OF LV-C-06-138A (238A) IS NOT IMMEDIATELY EVIDENT, IT MAY BE NECESSARY TO CONTROL RPV LEVEL WITH LIC-06-138A (238A) IN "MANUAL" UNTIL A TURBINE BYPASS VALVE IS AT LEAST 10 PERCENT OPEN.

<u>150 psig</u>

3.3.9 Verify EHC pressure regulator operational by observing bypass valve opening while reactor pressure is maintained at 150 psig. _____/_____ Initial Date

3.3.10 Transfer the operating set of air ejectors steam supply and the recombiner preheater steam supply to main steam per procedures S07.1.D and S69.1.D, respectively. _____/_____ Initial Date

3.3.11 Continue rod withdrawal to one full turbine bypass valve open if HPCI or RCIC operability test is required (once per operating cycle). Perform these tests per ST-6-055-320-1(2) or ST-6-049-320-1(2) if necessary. If no surveillance is required, proceed to next step as soon as turbine bypass valve starts to open. _____/_____ Initial Date

3.3.12 Using the bypass jack, open one turbine bypass valve 10 to 20 percent. Raise the EHC pressure setpoint to 600 psig. This setpoint ensures that a RFP will be operating prior to reactor pressure exceeding the condensate pump deliveredy capability. _____/_____ Initial Date

3.3.13 Continue rod withdrawal maintaining less than a 100 degrees F/hr heatup rate. _____/_____ Initial Date

3.3.14 Place isolated phase bus heater in service per procedure S34.1.A and continue preparing the turbine generator for operation. _____/_____ Initial Date

450 psig

3.3.15 Start a second condensate pump per procedure S05.1.B. _____/_____ Initial Date

3.3.16 Start the first RFP in accordance with procedure S06.1.A and commence feeding the reactor vessel. _____/_____ Initial Date

ENSURE THE FEEDWATER STARTUP FLUSH VALVES HV-41-109A (209A) and 109B (209B) ARE CLOSED WHENEVER REACTOR PRESSURE IS ABOVE 600 PSIG. (Reference: Memorandum entitled "LGS Open Items - Feedwater Isolation Valves", D. R. Helwig, 7/18/83, File: NUCL 9-6-B).

3.3.17 Start a second RFP per procedure S06.1.A, and place it in "standby" per S06.1.C. _____/_____ Initial Date

FOLLOW S06.1.A CONCURRENTLY WITH GP-2 FOR GUIDANCE ON METHODS OF REACTOR VESSEL LEVEL CONTROL.

600 psig

3.3.18	Carefully observe the arrival at 600 psig by an increase in turbine bypass valve opening.	____/____ Initial Date
3.3.19	Raise the EHC steam pressure setpoint to 920 psig.	____/____ Initial Date
3.3.20	Slowly start withdrawing control rods to increase reactor pressure from 600 psig to 920 psig in about one hour.	____/____ Initial Date
3.3.21	Verify that the main steam line low pressure annunciators clear at a nominal 831 psig.	____/____ Initial Date

920 psig

3.3.22	Observe arrival at 920 psig by turbine bypass valve opening increasing. When the bypass valve is open 30 to 40 percent, set the bypass valve jack back to zero.	____/____ Initial Date
3.3.23	Continue control rod withdrawal toward achieving two bypass valves full open.	____/____ Initial Date

1 BPV Open

3.3.24	Close the appropriate RFP turbine drains as required.	____/____ Initial Date

3.3.25 When one and one-half turbine bypass valves are open, adjust each APRM channel's indicated power to be equal to the percent thermal power as calculated by 2.8% times the number of bypass valves open. (e.g. with one and one-half BPVs open: % Power = 2.8% x 1.5 = 4.2%). At this time, also verify that the APRM downscale alarms are clearing and the IRM's read about 10% on range 10.

Initial / Date

3.3.26 When all APRM downscale alarm lights have cleared, place the reactor mode switch to "RUN" prior to exceeding the scram setpoints of 15 percent APRM power in "STARTUP" or 120 percent IRM scale. Ensure reactor pressure is maintained above a nominal 831 psig to prevent MSIV isolation.

Initial / Date

3.3.27 At the APRM recorders on panel 10C603 (20C603), verify "RUN" mode by checking the APRM scram/rod block setpoint has changed to the flow biased value.

Initial / Date

2 BPV's Open

3.3.28 Fully withdraw the IRM's and secure IRM and SRM detector drive power.

Initial / Date

3.3.29 If LV-C-06-138A(238A), the "A" RFP Discharge Bypass Valve, is being used to control RPV level, put the "stand-by" RFP in service and place the 1A(2A) RFP in "stand-by" per procedure S06.1.A. _____/____ Initial Date

3.4 STARTUP AND SYNCHRONIZATION OF THE MAIN UNIT

Plant is now in "RUN" mode, IRM's withdrawn, two turbine bypass valves open, two condensate pumps running, two reactor feed pumps running, turbine chest warm, recombiner in service, and drywell inerting is in process.

3.4.1 Notify the Load Dispatcher of expected synchronization and request permission to open both the 535 (235) and 635 (635) breakers and close the 11 (21) disconnect. _____/____ Initial Date

3.4.2 Roll the main turbine and bring it to 1800 rpm per procedure S01.1.A. _____/____ Initial Date

AT NO TIME DURING OPERATION SHOULD FIRST STAGE BOWL DIFFERENTIAL (INNER-OUTER) TEMPERATURE EXCEED 75 DEGREES F. INNER FIRST STAGE BOWL TEMPERATURE RISE IS ALSO LIMITED TO A MAXIMUM OF 150 DEGREES PER HOUR.

3.4.3 Continue to raise reactor power by control rod withdrawal using the "RWM Rod Sequence" for startup. _____/____ Initial Date

3.4.4 Dispatch an operator to 220KV (500KV) substation to clear the permit on generator disconnects. _____/____ Initial Date

3.4.5 Open both generator output breakers, 535 (235) and 635 (335). Then clear the permit on the generator disconnect, 11 (21), and close it. _____/_____ Initial Date

3.4.6 Synchronize the main generator to the grid per procedure S32.1.A. Pick up load until all the turbine bypass valves close. _____/_____ Initial Date

3.4.7 When the generator load reaches a nominal 100 MW, transfer house loads to the unit auxiliary transformer per procedure S91.6.B. _____/_____ Initial Date

3.4.8 Run load set up to 105 percent. _____/_____ Initial Date

3.4.9 Maintain close surveillance of generator cold gas temperature (nominal 40 to 46 degrees C), and turbine expansion as the machine is loaded. _____/_____ Initial Date

3.5 INCREASING POWER TO RATED

Plant is now at nominal 10% power with the generator synchronized. Rod withdrawal is continuing with the reactor recirculation pumps at minimum speed. Two condensate pumps are running. Two reactor feed pumps are running, but only one is delivering water to the vessel.

3.5.1 Open the sixth feedwater heater motor operated extraction steam isolation valve HV-02-119A (219A), for the heater associated with the operating RFP per procedure S02.1.A. _____/_____ Initial Date

3.5.2 Open all fifth feedwater heater extraction steam isolation valves HV-02-118A,B,C (218A,B,C) per procedure S02.1.A. _____/_____ Initial Date

50 - 100 MWe 10 Percent Power

3.5.3 Continue control rod withdrawal using the "RWM Rod Sequence" for startup. _____/_____ Initial Date

3.5.4 Close the Main Turbine Control Valve Above Seat Drain Valve HV-01-102 (202), and Below Seat Drain Valves HV-01-105A,B (205A,B) and HV-01-106A,B (206A,B). Close the Main Steam Line Startup Drain Valve HV-01-104 (204) and Main Stop Valve Above Seat Drain Valves HV-01-101A,B,C,D (201A,B,C,D). _____/_____ Initial Date

3.5.5 Close the Main Steam Line Drain Valves HV-41-1F016 (2F016), 1F019 (2F019) and 1F021 (2F021). _____/_____ Initial Date

3.5.6 Ensure that sufficient condensate demineralizers are available for the system flow. _____/_____ Initial Date

3.5.7 Transfer reactor vessel level control to the three-element mode at approximately 20 percent power. _____/_____ Initial Date

150 - 200 MWe 20 Percent Power

3.5.8 Open all fourth FW heater extraction steam isolation valves HV-02-112A,B,C (212A,B,C) per procedure S02.1.A. _____/_____ Initial Date

THIS PROCEDURE ASSUMES THAT THE BULK OF THE FUEL PRECONDITIONING HAS BEEN DONE. FUEL PRECONDITIONING IS HANDLED IN OTHER PROCEDURES. FUEL PRECONDITIONING IS AN ATTEMPT TO PREVENT FUEL CLAD FAILURES BY "LOOKING AT" EACH 6 INCH SEGMENT OF EVERY FUEL BUNDLE IN THE CORE AND INCREASING ITS POWER PRODUCTION ABOVE 8KW/FT AT A RATE OF 0.11 KW/FT PER HOUR. COMPUTER PROGRAM OD-11 DEALS WITH PRECONDITIONING.

Nominal 25 Percent Power

3.5.9 Check that the process computer program OD-3 (Core Thermal Power) is operable. The Reactor Engineer, or alternate, will give direction for further power ascension. _____/_____ Initial Date

3.5.10 Place the standby reactor feed pump in service. It is already running on the MGU at a discharge pressure of about 100 psig less than the other RFP, with its discharge valve open. Slowly increase its speed via the MGU until it begins to deliver water to the reactor. When the individual controller deviation meter reaches zero, place its MGU in "AUTO". Open the sixth FW heater extraction steam isolation valve for this RFP. _____/_____ Initial Date

3.5.11 Open all third FW heater extraction steam isolation valves HV-02-108A,B,C (208A,B,C) per procedure S02.1.A. _____/_____ Initial Date

3.5.12 Continue rod withdrawal toward the 100% power rod configuration as directed by the Reactor Engineer or alternate. _____/_____ Initial Date

3.5.13 Continue to increase power within PCIOMR limitations by increasing reactor recirculation flow as directed by the Reactor Engineer or alternate. _____/_____ Initial Date

3.5.14 Use the various process computer programs to ensure satisfactory operation of the core.

P-1	Periodic Log
OD-3	Core Thermal Power and APRM Calibration
OD-7	Control Rod Positions
OD-8	LPRM Console Readings
OD-6, Option 3	Critical Power Ratio
OD-6, Option 1,2	Thermal Data in Fuel Assembly
OD-6, Option 4	LHGR
OD-11, Option 00,3	Preconditioned Data
OD-11, Option 6	Core Analysis Log (Control Rod Withdrawal vs. Preconditioned Envelope). _____/_____ Initial Date

3.5.15	Start the third condensate pump per procedure S05.1.B.	_____/_____ Initial Date
3.5.16	Warm up the third reactor feed pump and place it in standby per procedure S06.1.A.	_____/_____ Initial Date
3.5.17	Check to ensure sufficient condensate demineralizers are operable and in service.	_____/_____ Initial Date
3.5.18	Place the third reactor feedpump in service at approximately 60 percent power.	_____/_____ Initial Date
3.5.19	Continue to increase power to rated conditions.	_____/_____ Initial Date
3.5.20	Continue to monitor core performance via the various process computer programs.	_____/_____ Initial Date

Full Load MWe

3.5.21	After 24 hours in the "RUN" mode, close the feedwater heater startup vent valves per procedure S02.1.A.	_____/_____ Initial Date

REVIEWED BY: _____ DATE _____
(Shift Supervision)

4.0 REFERENCES

4.1 Technical Specifications

4.2 Final Safety Analysis Report (FSAR)

4.3 G.E. Service Information Letters (SIL)

4.4 G.E. Turbine Information Letters (TIL)

4.5 NRC IE Bulletin 80-25

4.6 Memorandum entitled "Deaerating Assist Steam Spargers", D. A. DiPaolo, 7/4/83; File: EQUIP 1-12-5

4.7 Memorandum entitled "LGS Open Items - Feedwater Isolation Valves", D. R. Helwig, 7/18/83; File: NUCL 9-6-B

4.8 Bechtel Memorandum entitled "LGS Feedwater System Startup Review", D. L. Damon, 5/24/83; File: EQUIP 1-26