PRIORITY 2

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FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH.NAME AUTHOR AFFILIATION
MCCORMICK,M.J. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
Office of Nuclear Reactor Regulation, Director (Post 870411

SUBJECT: Forwards simulation facility certification,describing change to plant simulation facility performance testing plan,per 10CFR55.45(b)(5) & unit 2 simulation facility four-year rept on certification.

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NIAGARA MOHAWK

NINE MILE POINT NUCLEAR STATION/P.O. BOX 32, LYCOMING, N.Y. 13093/TELEPHONE (315) 343-2110

Martin J. McCormick Jr. P.E.
Vice President
Nuclear Safety Assessment and Support

August 24, 1994
NMP2L 1490

U. S. Nuclear Regulatory Commission
Director Nuclear Reactor Regulation
Washington, DC 20555-0001

Re: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

Subject: Unit 2 Simulation Facility Four Year Report on Certification

Gentlemen:

In accordance with the provisions of 10CFR55.45 (b) (5) (ii) and 10CFR55.45 (b) (5) (vi), we hereby submit the Nine Mile Point Nuclear Station Unit 2 Plant Simulation Facility four-year report on certification. We are also submitting, as required by 10CFR55.45(b)(5), NRC Form 474, Simulation Facility Certification, to describe a change to the Nine Mile Point Nuclear Station Unit 2 simulation facility performance testing plan.

The initial certification along with the performance testing plan for this facility was previously submitted to your office by letter dated August 24, 1990 (NMP2L 1248). A revision to that certification was submitted on June 28, 1991 (NMP 27687). That revision omitted two (2) normal operating tests from an updated test plan submitted with that revision. These tests should not have been omitted from the test plan. A Deviation Event Report has been written to determine the root cause and to track additional corrective action, including an evaluation of the Unit 1 simulator performance test plan for a similar situation. These two normal operating tests are being re-instated by the NRC Form 474 accompanying this four year report on certification. All normal operating tests were completed, including the two omitted from the updated test plan, in test year 1 (1990). All testing requirements of ANSI/ANS 3.5 - 1985 were met.

Additionally, the Unit 2 Updated Safety Analysis Report (USAR) states that the Unit 2 Simulator was designed and constructed in accordance with ANSI/ANS 3.5 - 1981, but it is not clear with regard to certification. The Unit 2 simulator was certified to ANSI/ANS 3.5 - 1985 as endorsed by Regulatory Guide 1.149. Action has been taken to revise the Unit 2 USAR to identify the standard used for certification.

Very truly yours,

M. J. McCormick, Jr.
VP Nuclear Safety
Assessment & Support

FW/kja

Attachment
Mr. T. T. Martin, NRC Regional Administrator, Region 1
Mr. Barry S. Norris, Senior Resident Inspector
Mr. M. L. Boyle, Acting Director, Project Directorate I-1, NRR
Mr. D. S. Brinkman, Senior Project Manager, NRR
Records Management 010005

A005
1/1

NRC FORM 474 (10-92) U.S. NUCLEAR REGULATORY COMMISSION

SIMULATION FACILITY CERTIFICATION

APPROVED BY OMB: NO. 3150-0138
EXPIRES: 10/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 120 HOURS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0138), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

INSTRUCTIONS: This form is to be filed for initial certification, recertification (if required), and for any change to a simulation facility performance testing plan made after initial submittal of such a plan. Provide the following information and check the appropriate box to indicate reason for submittal.

FACILITY	DOCKET NUMBER
NINE MILE POINT NUCLEAR STATION - UNIT 2	50- 410
LICENSEE	**DATE**
NIAGARA MOHAWK POWER CORPORATION	8/23/94

This is to certify that:

1. The above named facility licensee is using a simulation facility consisting solely of a plant-referenced simulator that meets the requirements of 10 CFR 55.45.
2. Documentation is available for NRC review in accordance with 10 CFR 55.45(b).
3. This simulation facility meets the guidance contained in ANSI/ANS 3.5, 1985, as endorsed by NRC Regulatory Guide 1.149.

If there are any EXCEPTIONS to the certification of this item, CHECK HERE [ ] and describe fully on additional pages as necessary.

NAME *(or other identification)* AND LOCATION OF SIMULATION FACILITY.

NINE MILE POINT NUCLEAR LEARNING CENTER
NMP2 PLANT REFERENCED SIMULATOR
R.D. #1 BOX 148
OSWEGO, NY 13126-9719

[ ] SIMULATION FACILITY PERFORMANCE TEST ABSTRACTS ATTACHED. *(For performance tests conducted in the period ending with the date of this certification.)*

DESCRIPTION OF PERFORMANCE TESTING COMPLETED. *(Attach additional pages as necessary and identify the item description being continued.)*

[ ] SIMULATION FACILITY PERFORMANCE TESTING SCHEDULE ATTACHED. *(For the conduct of approximately 25% of performance tests per year for the four-year period commencing with the date of this certification.)*

DESCRIPTION OF PERFORMANCE TESTING TO BE CONDUCTED. *(Attach additional pages as necessary and identify the item description being continued.)*

[X] PERFORMANCE TESTING PLAN CHANGE. *(For any modification to a performance testing plan submitted on a previous certification.)*

DESCRIPTION OF PERFORMANCE TESTING PLAN CHANGE *(Attach additional pages as necessary and identify the item description being continued.)*

Add the Normal Operating Tests for Plant Evolutions titled "Core Performance Testing" and "Reactor Trip Followed by Recovery to Rated Power" to the 4 year test plan. See section VI.B. of the Unit 2 Simulation Facility NRC Four Year Report on Certification that accompanies this correspondence.

[ ] RECERTIFICATION *(Describe corrective actions taken, attach results of completed performance testing in accordance with 10 CFR 55.45(b)(5)(v). (Attach additional pages as necessary and identify the item description being continued.)*

Any false statement or omission in this document, including attachments, may be subject to civil and criminal sanctions. I certify under penalty of perjury that the information in this document and attachments is true and correct.

SIGNATURE – AUTHORIZED REPRESENTATIVE	TITLE	DATE
J. McCormick	VP Nuclear Safety Assessment & Support	8/23/94

In accordance with 10 CFR 55.5, Communications, this form shall be submitted to the NRC as follows:

BY MAIL ADDRESSED TO: DIRECTOR, OFFICE OF NUCLEAR REACTOR REGULATION
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

BY DELIVERY IN PERSON TO THE NRC OFFICE AT: ONE WHITE FLINT NORTH
11555 ROCKVILLE PIKE
ROCKVILLE, MD

UNIT 2 SIMULATION FACILITY NRC FOUR YEAR REPORT ON CERTIFICATION

I. Facility — Nine Mile Point Nuclear Station, Unit 2 - Docket Number 50-410

II. Licensees — Niagara Mohawk Power Corporation
Rochester Gas and Electric Corporation
Central Hudson Gas & Electric Corporation
New York State Electric & Gas Corporation
Long Island Lighting Company

III. Name and Location of Simulation Facility
Niagara Mohawk Power Corporation
NMP-2 Plant Referenced Simulator
Nine Mile Point Nuclear Learning Center
R.D. #1 Box 148
Oswego, NY 13126-9719

IV. Pursuant to 10 CFR55.45 (b) (5) (ii), all performance test failures have been corrected.

V. Pursuant to 10CFR55.45 (b) (5) (vi), this is a description of the performance testing completed:

A. Annual performance testing was conducted in accordance with ANSI/ANS 3.5 1985 Section 5.4 "Simulator Testing" and Appendix A Section A3 "Simulator Tests" as follows:

1. Computer Real Time Test (ANSI Appendix A Section A3.1).
A test was completed satisfactorily each year for the previous four (4) year test period, 1990, 1991, 1992 and 1993. Test results are on file in the simulator data base annual ANSI 3.5 test reports.

2. Steady State Test (ANSI 3.5 Appendix A Section A3.2 and Appendix B Section B1.1).
   a. Simulator parameters were compared with reference plant parameters at approximately 25%, 75% and 100% rated thermal power each year for the previous four (4) year period, 1990, 1991, 1992 and 1993. The simulator performance meets or exceeds the performance criteria of ANSI 3.5, Section 4.1.
   b. Simulator stability tests were performed each year for the previous four (4) year test period, 1990, 1991, 1992 and 1993. The simulator meets or exceeds the performance criteria of ANSI 3.5, Section 4.1.
3. Normal Operation (ANSI 3.5, Section 3.1.1, and appendix A, Section A3.2).
   a. Normal plant evolutions listed below (ANSI 3.5, Section 3.1.1) were completed in 1990. Performance tests satisfactorily met the acceptance criteria of ANSI 3.5, Section 4.2.1.
      1) Plant startup - cold to hot standby
      2) Nuclear startup from hot standby to rated power
      3) Turbine startup and generator synchronization
      4) Reactor trip followed by recovery to rated power
      5) Operation at hot standby
      6) Load changes
      7) Startup, shutdown and power operations with less than full reactor coolant flow
      8) Plant shutdown from rated power to hot standby and cooldown to cold shutdown conditions
      9) Surveillance tests as selected by the Simulator Configuration Control Board (SCCB)
      10) Core performance testing

b. The NRC Form 474 "Simulator Facility Certification" test plan was revised in June 1991 to conduct the ANSI 3.5, Section 3.1.1 Normal Plant evolutions at a rate of approximately 25% per year for the four (4) year test period. Test years two (2), three (3) and four (4) normal plant evolutions tests were completed in 1991, 1992 and 1993, and satisfactorily met the performance criteria requirements of ANSI 3.5, Section 4.2.1.

4. Transient tests (ANSI 3.5, Section 5.4.2, Appendix A, Section A.3.3, and Appendix B, Section B.1.2).

Transient tests listed below were performed each year of the previous four (4) year test period. The transient test parameters were compared with reference plant data where available, or best engineering estimate when plant data was not available, by a panel of experts. The SCCB verified the test results were satisfactory in accordance with ANSI 3.5, Section 4.2.1 Performance Criteria. Test performance discrepancies noted were corrected in accordance with the Simulator Configuration Control procedure.

- Manual Scram
- Simultaneous trip of all feedwater pumps
- Simultaneous closure of all Main Steam Isolation Valves
- Simultaneous trip of all recirculation pumps
- Single recirculation pump trip
- Main Turbine trip (maximum power level which does not result in immediate reactor scram)
- Maximum rate power ramp down to approximately 75% and back up to 100%

- Maximum size reactor coolant system rupture combined with loss of all offsite power
- Maximum size unisolable main steam line rupture
- Simultaneous closure of all Main Steam Isolation Valves combined with single stuck open safety/relief valve

5. All simulator malfunction tests were performed at a rate of approximately 25% per year for the four (4) year test period in accordance with the original NRC Form 474 submittal (ANSI 3.5, Section 4.2.2, Section 3.1.2, Appendix A, Section 3.4). Discrepancies noted were corrected in accordance with the Simulator Configuration Control Procedure. All malfunctions satisfactorily meet the ANSI 3.5, Section 4.2.1 (b) Performance Criteria.
6. The reference plant modifications and simple design changes listed below, were implemented in the simulator during the previous four (4) year reporting period. Special acceptance test procedures were written and performed for each modification with satisfactory results in accordance with ANSI 3.5, Section 5.4.1 prior to turnover to training. No other reference plant modifications during this four (4) year reporting period had impact on the simulator as determined by the SCCB.

MOD #	TITLE
PN2Y86MX001	Addition of INOP/Bypass indication for HPCS Test Switch 43LS.
PN2Y86MX002	SPDS
PN2Y86MX084	Human factors labeling study implementation.
PN2Y86MX085	Elimination of nuisance annunciators in the Control Room.

MOD #	TITLE
PN2Y87MX035	Human factors first refuel commitments.
PN2Y87MX038	Addition of GAI-Tronics.
PN2Y87MX259	Replace 2FWS-LV10 A, B, C hydraulics with electrical actuators.
PN2Y88MX008	Appendix "R" valves (high/low interface). Correction of nuisance alarms.
PN2Y88MX028	MSR blanketing steam valve interlock removal.
PN2Y88MX058	Addition of two valves to the WCS System for Feedwater Line stratification prevention.
PN2Y88MX059	CRD to RWCU piping installation.
PN2Y88MX069	Condensate Storage Tank Level Set Point Change Via 2CNS-LS11A/11B relocation.
PN2Y89MX079	Change Main Turbine from Full Arc to Partial Arc Admission.
PN2Y88MX110	Reactor recirculation pump stuffing box mod.
PN2Y88MX158	Add keylock test switch in HPCS injection valve logic.
PN2Y88MX174	Division I and II EDG response to a loss of off-site power.
PN2Y88MX190	Addition of GE 3D Monicore Core Monitoring System.
PN2Y88MX191	NUMAC Rod Worth Minimizer.

MOD #	TITLE
PN2Y89MX006	Change panel meter scales for Division I CMS System Monitors.
PN2Y89MX024	Removal of seal-in circuit for 2CNM-MOV32, A, B, C.
PN2Y89MX026	Replacement of RIS Level Differentiator.
PN2Y89MX039	Installation of NUMAC Main Steam Line Radiation Monitors.
PN2Y89MX078	Addition of Oxygen Injection System in to Feedwater System.
PN2Y89MX080	Change of interlocks for reboiler drain valves.
PN2Y89MX094	CMS target rock solenoid valve upgrade.
PN2Y91MX042	Replacement of circulating water system butter fly valves.
PN2Y92MX004	Instrument Air System upgrade.
PN2Y92MX006	Revise logic for service water valves MOV 95A/B and MOV 66A/B.
SC2-0141-90	Retire Circulating Water System conductivity equipment in place.
SC2-0005-91	Change reactor recirc flow control valve minimum position for recirc pump start.
SC2-0035-91	Change out control room typers.
SC2-0036-91	Change PMS computer character set.
SC2-0079-91	SRV Tailpipe Temperature Setpoint.
SC2-0080-91	Change reactor plant sample system conductivity recorder scales.

MOD #	TITLE
SC2-0123-91	Remove bank limit inputs to "Rod Worth Minimizer Rod Block" annunciator.
SC2-0155-91	Change setpoint for the "Clean Steam Reboiler Supply Pressure Low" alarm.
SC2-0241-91	Replacement of turbine supervisory recorders.
SC2-0375-92	Revise RRCS System and SLC System Logic.
SC2-0457-91	Replacement of NSSS Isolation Placards.
SC2-0018-92	Change setpoint of RCIC turbine exhaust pressure trip.
SC2-0025-92	Change setpoint of IAS jacket water temperature alarm.
SC2-0094-92	NSSS annunciator power supply load redistribution.
SC2-0163-92	Change configuration of Balance of Plant (BOP) annunciator power supplies.
SC2-0167-92	Change 2ICS*MOV143 motor operating gear (affects valve stroke time).
SC2-0253-92	Removal of SWP System to CWS System low pressure alarm.
SC2-0261-92	Revise the HIGH temperature alarm setpoint for recorder E31-R611.
SC2-0278-92	Gear set change for RHS*MOV116.
SC2-0006-93	Gear set change for RHS*MOV115 and ICS*MOV116.

MOD #	TITLE
SC2-0015-93	Revise the HIGH and ALERT alarm setpoints from radiation monitors HVR*CAB14A 2 and *CAB32A 2.
SC2-0048-93	Tie in the Unit 2 simulator with the EOF and TSC.

7. Simulator enhancements, listed below, were implemented during the previous four (4) year reporting period to improve the simulator as a training tool. Special acceptance test procedures were written and performed for each enhancement with satisfactory results in accordance with ANSI 3.5, Section 5.4.1 prior to turn over to training.

ENHANCEMENT #	TITLE
PN2Y88EN015	Incorporate I/O Stop Time.
PN2Y90EN001	Provide Rodline on the PMS OD-3 and P-1 Edits.
PN2Y90EN002	Add Remote SLS Valves V45 nd V46.
PN2Y90EN003	Add variable malfunction for Loss of Suppression Pool Level.
PN2Y90EN006	Place additional CSO Area CRT"s in Service.
PN2Y90EN007	Improve Monitored Parameter Heat Up/Cool Down Rate.
PN2Y90EN010	Add Video Taping Capability.
PN2Y90EN013	Add Remote Function to Close/Open Major Switchgear Breakers.

ENHANCEMENT #	TITLE
PN2Y90EN016	Add Recorder Cycle Mark on Simulator Reset.
PN2Y90EN019	Make I/O's on Analog Read Outs Rampable.
PN2Y90EN021	Revise Malfunction Time Delay to include seconds.
PN2Y90EN022	Add Remote Function to adjust EHC Pressure Regulator Bias Control.
PN2Y90EN024	Add Remote Function to Change Switchgear Breaker Control Power to other battery.
PN2Y90EN026	Add "P-1 Running" to PMS Alarm Display.
PN2Y90EN027	DRMS Phase II, addition of 2CEC*PNL880A thru D
PN2Y90EN028	Add Remote Function to manually open CSH, RHS, SWP, CSL, and ICS Valves.
PN2Y90EN029	Change Malfunction MS05 to include the Outboard MSIV's.
PN2Y90EN030	Add Malfunctions to fail FWS Pumps to trip on L8 and fail CSH Injection Valve L8 Trip Unit.
PN2Y90EN032	Add Pass Word Protection to Locked IC's (On-Screen Description).
PN2Y90EN033	Add Malfunction for CRD Pump Trip on Low Suction Pressure.

ENHANCEMENT #	TITLE
PN2Y90EN034	Add Malfunction for Unisolable Steam Leak into the Secondary Containment.
PN2Y90EN036	Add Malfunction to cause Reference Leg Ruptures on Level Indications (includes initiation and failure of ECCS Division I/II and Containment Isolation Groups 3/8/9).
PN2Y90EN037	Add Remote Function for Local Starting of EDG's.
PN2Y90EN038	Add Variable Malfunction for Production of Hydrogen and Oxygen.
PN2Y90EN039	Add Malfunction to Fail Turbine Control Valves "As-Is".
PN2Y90EN041	Add Computer Points for ARP's and Malfunctions.
PN2Y90EN042	No transfer to Reserve Power.
PN2Y90EN043	Restore Div I/II DC Components.
PN2Y90EN045	Add Malfunctions for Breaks in ECCS Suction.
PN2Y90EN049	Simulate SLC Injection Via Hydro Pump.
PN2Y90EN050	Change I/O to Malfunction for Failing DW Spray Valve.
PN2Y90EN051	Malfunction to Fail DW Vacuum Breakers.
PN2Y90EN052	Malfunction for SRV Tail Pipe Break.

ENHANCEMENT #	TITLE
PN2Y90EN054	Malfunction for Fires in Reactor Building.
PN2Y90EN056	Add New RMS Monitors to Remote List.
PN2Y90EN058	Remote to Open HPCS Injection Valve MOV107 Manually.
PN2Y90EN060	Add Remote Function to make CSH Injection Valve Throttleable.
PN2Y90EN062	Add remotes for bypassing ARC-MOV15A/B
PN2Y90EN063	FW Line Break Upstream on HCV54A Inside Drywell.
PN2Y90EN064	Overload Trip Malfunction for any or all Drywell Unit Cooler Fans.
PN2Y90EN065	Add Remote Functions to provide High Pressure Drywell Relief Capabilities.
PN2Y90EN066	RBCLC to DRS Line Break Inside Drywell.
PN2Y90EN067	Add Remote for Manual Restart of RPS MG sets following Loss of Power.
PN2Y90EN069	Add remote to CS pages to open Manual Valves V-30 and V-31 (Demin Header Supplies).
PN2Y91EN003	Add capability to throttle 2FWS-MOV22A/B/C.

ENHANCEMENT #	TITLE
PN2Y91EN008	Add malfunction to fail steam flow input and/or feed flow input signals to the feed water level control system.
PN2Y91EN009	Add malfunctions for RCS hydraulic power unit (HPU) failures.
PN2Y91EN010	Addition of radiation monitoring remote functions and detector status options.
PN2Y91EN013	Add instructor station warning light for simulator operating limits and delete the existing annunciator warning.
PN2Y91EN016	Add second instructor station GAI-Tronics phone.
PN2Y91EN017	Revise main steam leak inside and outside containment malfunctions to be variable logrmithic like RR19, up to the capacity of one MSL.
PN2Y91EN019	Add a malfunction to break the nitrogen supply line at the SRV for the ADS Valves.
PN2Y91EN025	Allow throttle of RWCU filter flow when removing/restoring filter demin.
PN2Y91EN029	Addition of GEMS recorder.
PN2Y91EN031	Change malf. MS13 to defeat all group 1 isolations instead of just MSIVs.
PN2Y91EN032	Remodel malfunction RD15.
PN2Y91EN033	Dark tint windows on instructor station.

ENHANCEMENT #	TITLE
PN2Y91EN036	Develop method to fail annunciator power.
PN2Y91EN037	Add Remote Function to start and stop the problem time clock on PCM.
PN2Y91EN039	Add remote function for manual (Local) reset of RCIC trip throttle valve with a Div I LOCA signal present.
PN2Y91EN040	Add remote function for manual (Local) reset of RCIC trip throttle valve with a Div I LOCA signal present.
PN2Y91EN045	Addition of computer points for ATP's and malfunctions.
PN2Y92EN002	Addition of computer points for ATP's and malfunctions.
PN2Y92EN005	Change model of CRD suction filter.
PN2Y92EN006	Relocation of dimmer switch for Unit 2 simulator lighting to the Instructor Station booth.
PN2Y92EN008	Addition of remote functions that allow manual operation of valves without turning off power.
PN2Y92EN009	Addition of malfunctions that cause a loss of power to ADS and SRV solenoid valves.
PN2Y92EN010	Model tip withdrawal for non-selected channels.

ENHANCEMENT #	TITLE
PN2Y92EN011	Model valves 2RDS-V589 A and B for scram discharge volume vents and drains.
PN2Y92EN012	Model valves 2IAS-V137 and V138 on outlet of tanks 4 and 5.
PN2Y92EN013	Addition of malfunctions that cause the reactor feedwater pumps to have high motor winding temperatures.
PN2Y92EN014	Addition of group display on SPDS computer for monitoring service water temperatures and reactor building temperatures.
PN2Y92EN016	Installation of "Stop Problem Time" pushbuttons on simulator panels.
PN2Y92EN017	Add malfunctions for NUMAC main steam line radiation monitors.
PN2Y92EN018	Change format of I/O override book.
PN2Y92EN019	Addition of SRV fuses to back panels.
PN2Y92EN020	Add electrical malfunctions for failure of various UPS's.
PN2Y92EN021	Addition of malfunctions for RPV reference leg rupture and transmitter failures.
PN2Y92EN023	Addition of remote functions to inhibit RCIC isolation/trip on high room temperature.

ENHANCEMENT #	TITLE
PN2Y92EN024	Correction of instrument and indicating light power supplies to support station blackout procedure.
PN2Y92EN025	Addition of remote functions to shed electrical loads IAW the station blackout procedure.
PN2Y92EN026	Addition of remote function to cause the turbine to roll off the turning gear.
PN2Y92EN027	Addition of malfunctions that cause variable sized steam leaks in the Turbine Building.
PN2Y92EN028	Addition of malfunction that causes steam leakage past one pair of MSIV's
PN2Y92EN029	Addition of malfunction that causes a turbine trip failure.
PN2Y92EN030	Addition of malfunctions that causes minimum flow valves on various ECCS pumps to fail shut.
PN2Y92EN032	Addition of remote functions for RWCU pump discharge valves.
PN2Y92EN033	Increase the severity of malfunction PC02.
PN2Y92EN034	Change malfunction CS01 into two malfunctions CS01A and B (high drywell pressure and low reactor water level inadvertent initiation).
PN2Y92EN035	Make malfunction TU02 variable.

ENHANCEMENT #	TITLE
PN2Y93EN006	Addition of remote functions for starting and stopping radiation monitor sample pumps CMS10A and CMS10B.
PN2Y93EN007	Addition of remote functions for opening and closing of low pressure ECCS water leg pump discharge valves.
PN2Y93EN008	Expand malfunction AD07 to include MSS*PSV128.
PN2Y93EN009	Change remote function RM25 from controlling radiation monitor RMS137 to RMS138.
PN2Y93EN010	Addition of malfunctions that cause non-condensable gases to come out of solution in four of the major reference legs of the reactor.

VI. Pursuant to 10CFR55.45 (b) (5) (vi), the performance testing schedule for the subsequent four (4) year period, which includes a schedule to conduct approximately 25 percent of the performance tests per year, is as follows:

A. The following tests will be performed each year of the subsequent four (4) years:

1. Computer Real Time Test (ANSI 3.5 Appendix A, Section A.3.1).
2. Steady State Test (ANSI 3.5, Appendix A, Section A3.2 and appendix B, Section B1.1).
3. Transient Tests (ANSI 3.5, Section 5.4.2, Appendix A, Section A3.3, and appendix B, Section B 1.2).

4. Special tests such as reference plant initiated simulator modifications, reference plant simple design changes causing a simulator modification, simulator enhancements, and any other tests requested by the SCCB.

B. The remainder of the ANSI 3.5 required tests will be performed at approximately 25% per year for the subsequent four (4) year test period as follows:

NOTE: Normal Operating Tests for Plant Evolutions titled "Core Performance Testing" and "Reactor Trip Followed by Recovery to Rated Power" are added as line items (B.1.a.2 and B.1.a.3) respectively. Added words to include operations in single loop to section (B.4.a.1). This is done to clarify that the Test Plan for Normal Plant Evolutions is in accordance with section 3.1.1 of ANSI/ANS 3.5 - 1985.

1. Test year number one (1), 1994
   a. Normal Operation Tests
      1) Plant Startup - Cold to Hot Standby
      2) Core performance testing
      3) Reactor trip followed by recovery to rated power
      4) SCCB selected surveillance tests:

N2-OSP-CNT-R003	Containment Isolation Valve Isolation Actuation
N2-OSP-RMC-@005	One Rod Out Refuel Position Interlock Function Test
N2-OSP-RMC-R001	Reactor Mode Switch Shutdown Position Rod Block
N2-OSP-SWP-Q002	Service Water Pump Operability
N2-OSP-SWP-R003	Service Water Valve Operability

   b. Malfunction tests listed in Attachment A.

2. Test year number two (2), 1995

   a. Normal Operation Tests

      1) Nuclear startup from hot standby to rated power

      2) Turbine startup and generator synchronization

      3) Loads changes

      4) SCCB selected surveillance tests:

N2-OSP-ADS-M001	ADS Manual Inhibit Function Test
N2-OSP-ADS-R001	ADS Valve Operability (Test of only one SRV is required)
N2-OSP-CSH-Q002	HPCS Pump and Valve Operability
N2-OSP-CSL-Q002	LPCS Pump and Valve Operability
N2-OSP-EGS-M001	Diesel Generator and Air Start Operability (Division I and II)
N2-OSP-EGS-M002	Div. III Diesel Generator and Air Start Operability

   b. Malfunction tests listed in Attachment B.

3. Test year number three (3), 1996

   a. Normal Operation Tests

      1) Plant Shutdown from rated power to hot standby and cooldown to cold shutdown conditions.

      2) SCCB selected surveillance tests:

N2-OSP-ISC-M@002	Drywell Vacuum Breaker Operability
N2-OSP-MSS-CS001	Main Steam Isolation Valve Operability

N2-OSP-RPS-M001	Turbine Control Valve Fast Closure Scram Function Test
N2-OSP-RPS-M002	Turbine Stop Valve Closure RPS Logic
N2-OPS-RPS-M004	Manual Scram Channel Functional Test
N2-OSP-SLS-Q002	Standby Liquid Control Motor Operated Valve Operability

b. Malfunction tests listed in Attachment C.

4. Test year number four (4), 1997

a. Normal Operations Tests

1) Single Recirc loop startup from hot standby to rated power, operation at rated power, and single loop shutdown from rated power to hot standby.

2) SCCB selected surveillance tests:

N2-OSP-HVR-Q002	Reactor Building Vent System Automatic Isolation
N2-OSP-RDS-Q001	Scram Discharge Volume Vent and Drain Valve Operability
N2-OSP-RHS-Q004	RHR System Loop "A" Pump and Valve Operability
N2-OSP-RHS-Q005	RHR System Loop "B" Pump and Valve Operability
N2-OSP-RHS-Q006	RHR System Loop "C" Pump and Valve Operability
N2-OSP-SFC-Q001	Spent Fuel Pool Cleanup Pump and Valve Operability

b. Malfunction tests listed in Attachment D.

ATTACHMENT A

Unit 2 Simulator Malfunction Test Year - 1 1994

MALF NUMBER	TITLE
AD01	ADS Fails to Initiate
AD03	ADS/Relief Valve Failure - Stuck (1-18 or any or all)
AD09	SRV Solenoid PWR Failure (AC/B)
CS02	High Pressure Core Spray (CSH) Fails to Auto Start
CS03	High Pressure Core Spray (CSH) Diesel Engine Failure
CS06	Low Pressure Core Spray (CSL) Pump Trip
CU05	Reactor Water Cleanup (WCS) Filter Demineralizer Resin Depletion
CU07	Coolant Leak Outside Primary Containment
CW03	Turbine Building Closed Loop Cooling Water (CCS) Pump Trip
ED01	Main Transformer Loss of Cooling
ED02	Loss of Offsite 115KV Power Source(s) (Line 5/6)
ED06	600 V Normal Bus (NJS) Fault (2NJS-US1 --> US10)
ED11	24 VDC Normal Battery Bus Fault (3A or 3B)
EG13	Main Generator Loss of Load
EG14	Main Generator AVR Failure - Oscillations

MALF NUMBER	TITLE
EG15	No Transfer To Reserve Power
FP02	Control Room Fire Detector Failure
FP16	Fire at Turbine Bearing # 8
FW01	Condensate Pump Trip (A, B, C or Any)
FW03	Feedwater Pump Trip (A, B, C, or Any)
FW06	Feedwater Low Pressure Low Flow Valve (LV137) Failure - as is
FW23	Condensate Demineralizer High Differential Pressure
FW27	Feedwater Heater Drain Pump - Trip
FW31	Feedwater Line Break Inside Drywell
MC01	Main Condenser Air Inleakage
MS03	Steam Leakage Inside the Primary Containment
MS05	Main Steam Line Isolation Valve Failure - Open
MS07	Turbine Steam Seal Regulator Fails Closed
MS10	Loss of Extraction Steam to Feedwater Heater
MS13	MSIV Isolation Failure
MS14	MSL Rad Monitor Failed Downscale
MS15	MSL Rad Monitor Failed Upscale
MS16	MSL Rad Monitor Failed Inop
NM01	Source Range Monitor Channel Failure - Upscale
NM05	Source Range Monitor Channel Detector Stuck
NM09	Intermediate Range Monitor Channel Failure - Inoperative

MALF NUMBER	TITLE
NM14	Local Power Range Monitor Failure (X-Y-J) - Upscale
NM16	Rod Block Monitor Channel Failure - Upscale
NM22	LPRM Failure - Drift + Or - 25%
PC07	Hydrogen Generation in Drywell
PC08	Oxygen Generation in Drywell
PC09	H2-O2 Burn/Deflagration In Drywell
PC13	Fire In Reactor Building
RC01	Reactor Core Isolation Cooling Auto Start Failure
RC05	Reactor Core Isolation Cooling System Turbine Speed Controller Failure - As Is
RC09	Reactor Core Isolation Cooling Flow Transmitter Failure - As Is
RC13	ICS*MOV143 Valve Fails Shut
RD02	Rod Drive Control System Failure - Timer Malfunction
RD03	Rod Drive Control system Fails To Insert
RD04	Control Rod Failure (XX-YY)
RD08	Control Rod (XX-YY) Failure - Uncoupled
RD13	Control Rod Drive Flow Control Valve Failure - Opened
RD16	Scram Discharge Volume Rupture
RH01	Residual Heat Removal Pump Trip (A, B, C, or Any)
RH03	Residual Heat Removal Steam Dump Valve Failure - Closed

MALF NUMBER	TITLE
RH09	RHS*MOV15A/B Jammed
RH13	Div I/II ECCS Inadvertently Initiates
RP01	Spurious Reactor Scram
RP02	Reactor Protection System Failure to Scram - Automatic
RP05	Loss of Normal Power to RPS Channel
RP11	RRCS Failure of Recirc Pump Trip/Downshift
RR02	Rector Recirculation Master Flow Controller Failure - Low
RR06	Reactor Recirculation Loop Flow Controller Failure - As Is
RR07	Reactor Recirculation Flow Unit - Failure - Upscale
RR10	Reactor Recirculation Pump Bkr Trip
RR15	Failure of Reactor Recirc Pump Inner Seal
RR22	Reactor Vessel Pressure Recorder Failure - Downscale
RR26	Reactor Vessel Pressure Indicator Failure - As Is
RR27	RPV Level Instruments All Fail Upscale
RR34	RX Vessel Nozzle N14 20 DEG Rupture DW/RB
RR39	RX LT12B (B22-N095B) Fails Downscale
RR43	RX FT11C (C33-N003C) Fails Upscale/Downscale
RW01	Rod Worth Minimizer Failure
RX01	Fuel Cladding Failure

MALF NUMBER	TITLE
RX02	Increased Rod Worth For Any Control Rod (XX-YY)
TC03	EHC System Seam Pressure Regulator Failure - Oscillation
TC08	Main Turbine Bypass Valve Failure - Closed
TC13	Main Turbine Control Valve Failure - As Is
TU04	Exhaust Hood Spray Valve Failure - Closed
TU05	Main Turbine Bearing Oil Pressure Low

ATTACHMENT B

U2 Simulator Malfunction Test Year - 2 1995

MALF NUMBER	TITLE
AD02	Relief Valve Failure (1-18 or Any or All)
AD04	ADS/Relief Valve Failure - Leaks (1-18 or Any or All)
AD05	ADS/Relief Valve Failure - Open (1-18 or Any or All)
AD07	ADS Valve Tail Pipe Rupture
CS04	High Pressure Core Spray (CSH) Injection Valve Fails to Open
CS07	Low Pressure Core Spray (CSL) Injection Valve Fails to Open
CS08	CSH*MOV105 Valve Fails Shut
CU01	Reactor Water Clean-Up Pump Trip
CU02	Reactor Water Cleanup Drain Flow Control Valve Fail-Open
CW04	Circulating Water (CWS) Pump Trip
DG01	Diesel Generator Fail to Start
ED03	13.8 KV Bus (NPS) Fault (SWGR 001, 002, 003)
ED07	600 V Emergency BUs (EJS) Fault (US1 and/or US3)
ED12	UPS Fault 2VBB-UPSA/B
ED14	UPS Fault 2VBB-UPS1G
EG01	Main Generator Trip

MALF NUMBER	TITLE
EG02	Main Generator Auto Voltage Regulator Failure - Increase
EG08	Main Generator and Emergency Hydrogen Seal Oil Pump Failure
FP03	Turbine Building Fire Detector Failure
FP07	Engine Driven Fire Pump Failure
FP15	Fire in Normal Station Service Transformer (2STX-XNS1)
FP17	Fire in Division II Diesel Room
FP19	Fire in Relay Room
FW02	Condensate Booster Pump Trip (A, B, C or Any)
FW07	Feedwater High Pressure Low Flow Valve (LV55A or B) Failure - Open
FW10	Feedwater High Pressure High Flow Valve Failure - Open (A, B, C or Any)
FW14	Feedwater Master Controller Failure - Low
FW15	Feedwater Master Controller Failure - As Is
FW24	Condensate Recirculation Valve Failure - Open
FW28	Reactor Vessel level Narrow Range Transmitter Failure - Upscale

MALF NUMBER	TITLE
FW32	Feedwater Line Break Inside Steam Tunnel
FW33	Feedwater Check Valves Fail Open
MC03	Hotwell Level Controller Failure - High
MS04	Steam Line Rupture Inside Primary Containment
MS11	Loss of Steam to Moisture Separator Reheater (A, B, or Both)
NM02	Source Range Monitor Channel Failure - Downscale
NM06	Intermediate Range Monitor Channel Failure - Upscale
NM10	Intermediate Range Monitor Channel Detector Stuck
NM15	Local Power Monitor Failure - downscale (X - Y - J)
NM17	Rod Block Monitor Channel Failure - Downscale
NM23	APRM Upscale Neutron Trip
OG01	Explosion in Air Ejector Discharge Piping
PC02	Primary Containment Leakage
PC03	Primary Containment Isolation
PC10	Drywell/Wetwell Vacuum Breaker Pair Failed Open
PC14	DW UC1A-D Electrical Fault

MALF NUMBER	TITLE
RC02	Reactor Core Isolation Cooling Failure - Isolation of RCIC System
RC06	Reactor Core Isolation Cooling Turbine Trip
RC12	RCIC Steam Leak in Reactor Building Elevation 215
RD05	Control Rod Failure (XX - YY) - Drift Out
RD09	Control Rod Failure (XX - YY) - Scrammed
RD11	Control Rod XX - YY Failure - RPIS
RD18	Online CRD Suction Filter Clogged
RH05	Residual Heat Removal Heat Exchanger Level Controller Failure - Upscale
RH07	RHR Pump Suction Line Rupture
RH10	RHS*MOV25A/B Jammed
RH15	RHS*MOV4A Valve Fails Shut
RP03	Reactor Protection System Failure to Scram
RP07	RRCS 25 Second Timer Failure
RP09	RRCS Spurious Initiation
RP12	RRCS Divisional Failure
RR03	Reactor Recirculation Master FLow Controller Failure - As Is
RR08	Reactor Recirculation Flow Unit Failure - Downscale

MALF NUMBER	TITLE
RR11	Reactor Recirculation Pump Seizure
RR16	Recirculation Pump Upper Seal Failure
RR23	Reactor Vessel Pressure Recorder Failure - As Is
RR28	HPU A PMP Number 1 Failure
RR31	HPU B PMP Number 2 Failure
RR35	RX Vessel Nozzle N14 340 DEG Rupture DW/RB
RR40	RX LT9B (B22-N091B) Fails Upscale/Downscale
RR44	RX Vessel Nozzle N11 Fails Beyond 2ISC*EFV22
RW03	Rod Sequence Control System Total Failure
RX03	Change in Core Reactivity
SL01	Standby Liquid Control Pump (A, B or Both)
SL03	SLC Pump Suction Valve Fails to Open
TC04	Main Turbine Acceleration Control Failure
TC05	All Turbine Bypass Valves Fail - Open
TC09	Number One Turbine Bypass Valve Failure - Sticks Open
TU01	Main Turbine Bearing High Temperature
TU06	Main Turbine Thrust Bearing Wear

ATTACHMENT C

Unit 2 Simulator Malfunction Test Year - 3 1996

MALF NUMBER	TITLE
AD06	TMI Accident - BWR Equivalent
CS01	High Pressure Core Spray (CSH) - Inadvertent Initiation
CS05	High Pressure Core Spray (CSH) Pump Trip
CS09	CSL*MOV107 Valve Fails Shut
CU03	Reactor Water Cleanup Drain Flow Control Valve Fail - Closed
CU06	Reactor Water Cleanup Non-Regenerative heat Exchange Tube Leak
CU08	Reactor Water Cleanup (WCS) Isolation Failure
CW05	Circulating Water Expansion Joint Leakage
DG02	Diesel Generator Trip
ED04	4.16 KV Normal Bus (NNS) Fault (SWGR 11 --> 18)
ED08	125 VDC Normal Bus (BYS) Fault (SWGR 001A, B, C)
ED13	UPS Fault 2VBS*UPS2A/B
EG03	Main Generator Auto Voltage Regulator Failure - Decrease
EG04	Main Generator Core Internal Heating
EG06	Main Generator Stator Cooling Pump Trip (A/B)
EG09	Turning Gear Oil Pump Failure

MALF NUMBER	TITLE
EG11	Power Grid Network Load Transient - Decrease
FP04	Diesel Room Fire Detector Failure
FP08	Electric Fire Pump Failure
FP11	Loss of CO2 From Storage Tank (TK1, TK2, Both)
FP13	Hose Reel Foam Concentrate Pump Failure (1A, 1B, Both)
FP18	Fire In Division I Battery Room
FW04	Feedwater Low Pressure Low Flow Valve (LV1370) Failure - Open
FW08	Feedwater High Pressure Low Flow Valve (LV55A and/or B) Failure - Closed
FW11	Feedwater High Pressure High Flow Valve Failure - Closed (A, B, C or Any)
FW16	Feedwater Pump Recirculation Valve Failure - Open
FW20	Condensate Demineralizer Resin Depletion
FW25	Condensate Recirculation Valve Failure - Closed
FW29	Reactor Vessel Narrow Range Transmitter Failure - Downscale
FW36	Feed Pump Motor Overheating
MC04	Hotwell Level Controller Failure - Low
MS01	Steam Leakage Outside Primary Containment
MS09	Moisture Separator Reheater High Level - (A, B, or Both)

MALF NUMBER	TITLE
MS12	Reactor Vessel Isolation
MS18	Steam Line Rupture in Turbine Bldg.
MS19	Steam Leakage in Turbine Bldg.
NM03	SRM Recorder Failure
NM07	Intermediate Range Monitor Channel Failure - Downscale
NM11	Average Power Range Monitor Channel Failure - Upscale
NM19	Rod Block Monitor Failure
NM20	Average Power Range Monitor Channel Failure
OG02	Offgas Recombiner Preheater Steam Supply Valve Failure - Closed
PC04	Standby Gas Treatment Train Exhaust Fan Trip
PC06	Secondary Containment Isolation Failure
PC11	Drywell/Wetwell Vacuum Breaker Pair Failed Closed
PC15	DW UC2A-D Electrical-Fault
PC17	Group 8&9 Div I/II Isolation Failure (PN2Y90EN036)
RC03	Reactor Core Isolation Cooling Turbine Speed Controller Failure - High
RC07	Reactor Core Isolation Cooling Flow Transmitter Failure - High
RD06	Control Rod Failure (XX-YY) - Accumulator Trouble
RD10	Control Rod Failure (XX-YY) - Slow Scram Time

MALF NUMBER	TITLE
RD12	CRD Feed PUmp Trip
RD15	Loss of CRD Instrument Air Pressure
RH06	Residual Heat Removal Heat Exchanger Level Controller Failure - Downscale
RH08	Group 5 Isolation Failure (RHS*MOV122/113)
RH11	RHS*MOV33A/B Jammed
RH14	Div I/II ECCS Fails to Initiate
RH16	RHS*MOV4B Valve Fails Shut
RP04	Anticipated Transient Without Scram
RP08	RRCS 98 Second Timer Failure
RP13	RRCS Inadvertent Alternate Rod Insertion
RR04	Reactor Recirculation Loop Flow Controller Failure - High
RR09	Reactor Recirculation Flow Unit Failure - As Is
RR12	Reactor Recirculation Low Frequency Motor Generator Set Drive Motor Bkr Trip
RR14	Reactor Recirculation Low Frequency MG Set Voltage Regulator Fails - Low
RR18	Jet Pump Failure
RR19	Coolant Leakage Inside Primary Containment
RR24	Vessel Pressure Indicator Failure - Upscale
RR29	HPU A Pump Number 2 Failure
RR32	HPU A Oil Temp Fail High

MALF NUMBER	TITLE
RR36	Rx PT4B (B22-N078B) Fails Upscale/ Downscale
RR41	RX PT15C (C72-N050A) Fails Upscale/ Downscale
RW04	Rod Worth Minimizer - Control Rod Bypass
RX04	Core Power Instability When Operating in the Restricted Zone
TC01	EHC System Pressure Regulator Failure - High
TC06	All Turbine Bypass Valves Fail Closed
TC10	Main Turbine Governor Failure - High
TC12	Main Turbine Control Valve Failure - Closed
TU02	Main Turbine Bearing High Vibration
TU07	Spurious Main Turbine Trip

ATTACHMENT D

Unit 2 Simulator Malfunction Test Year - 4 1997

MALF NUMBER	TITLE
AD08	ADS Valve N2 Supply Severed (A Through G or any)
CU04	Reactor Water Cleanup Drain Flow Control Valve Fail-As Is
CW02	Reactor Building Closed Loop Cooling Water (CCP) Pump Trip
CW07	Unisolable SW Break Loop A in RHR HX Room
CW08	Isolable SW Break Loop B in RHR HX Room
DG03	Diesel Generator Load Sequence Timer Failure (Div. I/II)
ED05	4.16 KV Emergency Bus (ENS) Fault (101, 102, 103)
ED09	125 VDC Emergency Bus Fault (2BYS*SWG002A, B, or C)
EG05	Main Generator Hydrogen Cooling System Leakage
EG07	Main Generator Stator Cooling Demineralizer - Resin Depletion
EG10	Power Grid Network Load Transient - Increase
EG12	Main Generator Isophase Bus Duct Fan Trip (A/B)
FP01	Turbine Island Fire Detector Failure

MALF NUMBER	TITLE
FP05	Cable Spreading Room Fire Detector Failure
FP06	Reactor Building Fire Detector Failure
FP09	Auxiliary Fire Pump Failure (A, B, Both)
FP12	Fixed System Foam Concentrate Pump Failure (1A, 1B, Both)
FP14	Halon Bank Failure
FW05	Feedwater Low Pressure Low Flow Valve (LV137) Failure - Closed
FW09	Feedwater High Pressure Low Flow Control Valve (LV55A and/or B) Failure - As Is
FW12	Feedwater High Pressure High Flow Valve Failure - As Is (A, B, C, or Any)
FW13	Feedwater Master Controller Failure - High
FW22	Feedwater Heater Tube Leak - Feedwater Heater (A1, B1, C1)
FW26	Condensate Recirculation Valve Failure - As Is
FW30	Reactor Vessel Narrow Range Transmitter Failure - As Is
FW34	Feedwater Loop Flow Transmitter Fails to FW Control System (Both A, B, or Both)
FW35	Steam Flow Input Fails to FW Control System
IA01	Loss of Instrument Air
MC02	Main Condenser Tube Leak

MALF NUMBER	TITLE
MC05	Hotwell Reflood Valve Fail - Open
MS02	Steam Line Rupture Outside Primary Containment (DBA)
MS06	Main Steam Line Isolation Valve Failure - Closed
MS08	Steam Jet Air Ejector Steam Supply Valve Failure - Closed
MS17	MSIV Leakage
NM04	SRM Channel Inoperative
NM08	Intermediate Range Recorder/APRM Recorder Channel Failure - Inoperative
NM12	Average Power Range Monitor Channel Failure Downscale
NM21	Traversing In-Core Probe Failure - Stuck In Core
OG03	Offgas Discharge Isolation Valve Failure - Closed
PC01	Loss of Drywell Cooling
PC05	DBA Hydrogen Recombiner Blower Failure
PC12	Suppression Pool to Rx. Bldg. Leak
PC16	DW UC3A-B Electrical Fault
PC18	Group 8 & 9 Div I/II Isolation Occurs
RC04	Reactor Core Isolation Cooling Turbine Speed Controller Failure - Low
RC08	Reactor Core Isolation Cooling Flow Transmitter Failure - Low
RC10	Reactor Core Isolation Cooling System - Spurious Initiation
RC11	RCIC Isolation Failure

MALF NUMBER	TITLE
RD01	Rod Position Information System Failure - INOP
RD07	Control Rod Failure (XX-YY) - Stuck
RD14	CRD Flow Control Valve Failure - Closed
RD17	Partial Insertion of One Bank of Control Rods Under Scram Conditions
RH02	Residual Heat Removal Low Pressure Coolant Injection Valves - Fail to Open
RH04	Residual Heat Removal Heat Exchanger Tube Leak
RH12	RHS*MOV38A/B Jammed
RH17	RHS*MOV4C Valve Fails Shut
RP06	Loss of Motor Generator
RP10	RRCS Failure of FWC Runback
RP14	RRCS ARI Failure/Defeated
RR01	Reactor Recirculation Master Flow Controller Failure - High
RR05	Reactor Recirculation Loop Flow Controller Failure - Low
RR13	Reactor Recirculation Pump High Speed to Low Speed Auto Transfer Incomplete
RR17	Reactor Recirculation Pump Discharge Valve Failure
RR20	Reactor Recirculation Loop Rupture - DBA LOCA
RR21	Reactor Vessel Pressure Recorder Failure - Upscale
RR25	Reactor Vessel Pressure Indicator Failure - Downscale

MALF NUMBER	TITLE
RR30	HPU B Pump Number 1 Failure
RR33	HPU B Oil Temp Fail High
RR38	RX LT7C (B22-N080A) Fails Downscale
RR42	RX LT11C (B22-N081C) Fails Upscale/ Downscale
RR45	Ref Leg Non-Cond Bubble
RW02	Rod Sequence Control System Failure- Does Not Enforce Notch Logic
SL02	2SLS-VEX3A, 2SLS-VEX3B or Both Fail to Fire When SLC Pump Is Turned On
TC02	EHC System Pressure Regulator Failure - Low
TC07	Main Turbine Bypass Valve Failure - Open
TC11	Main Turbine Governor Failure - Low
TC14	Turbine Fails to Trip
TU03	Main Turbine High Eccentricity