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SUBJECT: Forwards Donald C Cook Nuclear Plant Simulation Facility
 Four Year Rept.

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AEP:NRC:1134A

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
DONALD C. COOK NUCLEAR PLANT
SIMULATION FACILITY FOUR YEAR REPORT

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Attn: W. T. Russell

August 31, 1994

Dear Mr. Russell:

In accordance with 10CFR55.45, (b)(5)(ii), Indiana Michigan Power Company hereby submits the Cook Nuclear Plant Simulation Facility four year report. The attached report encompasses both Cook Nuclear Plant Unit 1 (50-315) and Cook Nuclear Plant Unit 2 (50-316). Additionally, although not required by 10CFR55.45, included for your convenience is Form NRC-474 for both units.

Sincerely,

A handwritten signature in cursive script that reads "E. E. Fitzpatrick".

E. E. Fitzpatrick
Vice President

Attachment

ar

cc: A. A. Blind
Frank Collins - NRR/LPEB
G. Charnoff
J. B. Martin - Region II
NFEM Section Chief
NRC Resident Inspector - Bridgman
J. R. Padgett

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ATTACHMENT TO AEP:NRC:1134A

DONALD C. COOK NUCLEAR PLANT
SIMULATION FACILITY FOUR YEAR REPORT

SIMULATION FACILITY CERTIFICATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THE INFORMATION COLLECTION REQUEST: 150 HOURS, FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (A1010 7710, U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545-0001, AND TO THE PAPERWORK REDUCTION PROJECT (1600-0154), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503).

INSTRUCTIONS: This form is to be used 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 DONALD C. COOK NUCLEAR PLANT

DOCKET NUMBER
80-315

LICENSEE
INDIANA MICHIGAN POWER COMPANY

DATE
8/24/94

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 83.45.
2. Documentation is available for NRC review in accordance with 10 CFR 83.45(d).
3. This simulation facility meets the guidance contained in ANSI/ANS 8.3, 1990, as endorsed by NRC Regulatory Guide 1.14b.
- If there are any EXCEPTIONS to the completion of this item, CHECK HERE ☐ and describe fully on additional pages as necessary.

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

COOK NUCLEAR PLANT TRAINING CENTER
ONE COOK PLACE
BRIDGMAN, MI 49106

X 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.)

No performance testing was performed specific to the Unit One "Training Load" during the last four year period. Performance testing of the simulator was performed in accordance with the testing schedule per the original certification submittal on Unit Two "Training Load". Refer to the Cook Nuclear Plant Simulator Four Year Report Unit Two for performance testing abstract and completion dates.

18 SIMULATION FACILITY PERFORMANCE TESTING SCHEDULE ATTACHED. (For the conduct of approximately 28% 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.)

No performance testing will be performed specific to a Unit One "Training Load". Refer to the Cook Nuclear Plant Simulator Four Year Report Unit Two pages 26 thru 34 for the schedule of certification testing to be performed over the next four year period on the Unit Two "Training Load". Approximately 25% of all malfunction testing is schedule annually.

☒ 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.)

See Cook Nuclear Plant Simulator Four Year Report Unit Two, for a description of new performance tests added to the testing schedule for the next four years.

RECOGNITION (Describe successful actions taken, attach results of completed performance testing in accordance with 10 CFR 63.437(c)(4). 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 OF AUTHORIZED REPRESENTATIVE

FILE

DATE

Vice President

8/31/94

In accordance with 10 CFR 85.8, Communications, this form shall be submitted to the NRC as follows:
BY MAIL, ADDRESSED TO: DIRECTOR, OFFICE OF NUCLEAR REACTOR REGULATION

BY DELIVERY IN PERSON
TO THE NRO OFFICE AT:

ONE WHITE PLANT NORTH
11445 ROCKVILLE PIKE
ROCKVILLE, MD

DONALD C. COOK NUCLEAR PLANT SIMULATOR

FOUR YEAR REPORT

UNIT ONE

A. Purpose

The Cook Nuclear Plant simulator is used in the licensing of operations personnel and is therefore required to meet the criteria established in 10 CFR 55 Subpart E, Section 55.45.

To comply with 10 CFR 55.45, a report to the Commission which identifies simulator testing status must be submitted by the fourth anniversary of original certification. The purpose of this report is to satisfy this reporting requirement for Cook Nuclear Plant simulator.

This report addresses the use of Cook Nuclear Plant simulator for training on Cook Nuclear Plant Unit 1.

B. References

1. Title 10, Code of Federal regulations, Part 55, "Operator Licenses", Subpart E, Section 45.
2. U. S. Nuclear Regulatory Guide 1.149 "Nuclear Power Plant Simulation Facilities for use in Operator License Examinations.
3. ANSI 3.5, 1985, "Nuclear Power Plant Simulators for use in Operator Training.

C. Reporting Requirements

The requirements of this report as outlined in 10 CFR 55 are:

1. Identification of any uncorrected performance test failures and a schedule for correction of such performance failures, if any. Subpart E, Section 55.45 (b)(5)(ii).
2. A description of performance testing completed for the simulation facility. Subpart E, Section 55.45 (b)(5)(vi).

3. A description of the performance tests, if different, to be conducted on the simulation facility during the subsequent four year period. Subpart E, Section 55.45 (b)(5)(vi).
4. A schedule for the conduct of approximately 25 percent of the performance tests per year for the subsequent four-years. Subpart E, Section 55.45 (b)(5)(vi).

D. Discussion

The Cook Nuclear Plant simulator functions to provide training for both Units of the Cook Nuclear Plant. Unit 2 four-year report is also provided herein. The simulator is modelled to Cook Nuclear Plant Unit 2.

The initial certification report provided a demonstration that the differences between the units were not so significant that they impacted the ability of the simulation facility to meet the requirements and guidance of ANSI/ANS-3.5 1985 per NRC Regulatory Guide 1.149. The simulator was certified as acceptable for training on both units based upon this study and a commitment made to maintain a Unit 1 "training load". The Unit 1 "training load", although developed, has not been used for training during the course of the four-year period from initial certification to present. Training commitments for simulator usage, simulator equipment limitations, and simulator staffing limitations preclude maintaining a Unit 1 "training load". Based upon the following rationale, Cook Nuclear Plant proposes to no longer maintain a Unit 1 "training load".

1. An evaluation was performed on the Unit 1 specific plant modifications installed in Unit 1 from January 1, 1990, to present, to determine the impact of those changes upon the original certification differences study. This evaluation determined that as a result of a change to Unit 1 control room, training on Cook Nuclear Plant Unit 2 simulator would not be likely to result in an operator error resulting in a challenge to a critical safety function in Unit 1. Design changes specific to Unit 1 will be reviewed to ensure no differences exist between the simulator and Unit 1 that would affect the ability for safe operation of Unit 1.
2. A review was performed of all Unit 1 plant condition reports with training qualification methods/content causal codes with operations identified as the involved department. This review identified no cases in which training on the Unit 2 simulator resulted in an error in operation of Unit 1.

3. Both units use Westinghouse Owners Group based emergency operating procedures (EOPs) and in September 1993 both unit's abnormal operating procedures (AOPs) were standardized to the EOP two column format. Except for some set point differences between units, these procedures are virtually identical between units. Extensive training was performed on the simulator in the use of the new AOPs.
4. During the four-year period from initial certification to present, Unit 1 had fewer reactor trips than Unit 2 (two trips on Unit 1 vs nine on Unit 2). A review of trip causes showed no operator error induced trips on Unit 1 and only one on Unit 2 in which operator action was contributory. This data shows that not performing Unit 1 specific simulator training had no significant impact on normal operating performance.
5. During the four-year period from initial certification to present, Unit 1 set a plant operating continuous run record of 470 days.
6. Where design changes affect both units, installation on the simulator is completed prior to installation in either Cook Nuclear Plant unit when training could be enhanced and overall plant operation improved. An example of this philosophy is that a major modification consisting of replacement of Foxboro H Line equipment with Taylor Mod 30 controllers was performed during the 1994 Unit 1 refueling outage. This modification was installed on the simulator in October 1993, training was conducted on the simulator relative to the new controllers, and an essentially error free startup was conducted on Unit 1 at the completion of the outage. This modification is scheduled for Unit 2 in September 1994.

E. Implementation

Requirement #1: Uncorrected performance tests failures and a schedule for correction of such performance failures.

Refer to Cook Nuclear Plant Simulator Four Year Report Unit 2 for a list of performance test failures and scheduled correction dates.

Requirement #2: Description of performance testing performed in the last four-year period.

No performance testing was performed specific to the Unit 1 "training load" during the last four year period. Performance testing of the simulator was performed in accordance with the testing schedule per the original certification submittal on Unit 2 "training load". Refer to Cook Nuclear Plant Simulator Four-Year Report Unit 2 for performance testing abstract and completion dates.

Requirement #3: Description of performance tests, if different, to be conducted on the simulation facility during the subsequent four year period.

Refer to Cook Nuclear Plant Simulator Four Year-Report Unit 2, (pages 26 thru 34) for a complete list of certification tests to be performed on the simulator in the next four-year period. New tests added to the simulator include:

- CG10: CCW Inleakage to RCP Lower Bearing Oil Reservoir
- RC12: RCP Lower Bearing Oil Reservoir Leak
- RC29: Steam Generator Blowdown Leak Upstream of Containment Isolation Vlv
- RM03: Eberline Radiation Monitor Failures
- RP21: Failure of Feedwater Isolation to Occur
- RX29: Feedpump Discharge Pressure Transmitter (FPC-250) Failure
- TRANSIENT 11: Load Rejection

Requirement #4: Schedule for the conduct of approximately 25 percent of the performance tests per year for the subsequent four years.

No performance testing will be performed specific to a Unit 1 "training load" per "D. Discussion" above. Refer to Cook Nuclear Plant Simulator Four-Year Report Unit 2 , (pages 26 thru 34) for the schedule of certification testing to be performed over the next four-year period on the Unit 2 "training load". Approximately 25% of all malfunction testing is scheduled annually.

NRC FORM 474

(10-82)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3180-0122
EXPIRES: 10/31/95

SIMULATION FACILITY CERTIFICATION

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 (RMRS 7714, U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20535-0001, AND TO THE PAPERWORK REDUCTION PROJECT (P100-0134), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

INSTRUCTIONS: This form is to be used 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 DONALD C. COOK NUCLEAR PLANT	DOCKET NUMBER 80-316
LICENSEE INDIANA MICHIGAN POWER COMPANY	DATE 8/24/94

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 85.45.
2. Documentation is available for NRC review in accordance with 10 CFR 85.45(b).
3. This simulation facility meets the guidance contained in ANSI/ANS 8.4, 1980, as endorsed by NRC Regulatory Guide 1.14a.

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:

COOK NUCLEAR PLANT TRAINING CENTER
ONE COOK PLACE
BRIDGMAN, MI 49106

☒ 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.)

See attached, Cook Nuclear Plant Simulator Four Year Report Unit Two, pages 12 thru 25.

☒ 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.)

See attached, Cook Nuclear Plant Simulator Four Year Report Unit Two, pages 26 thru 34.

☒ PERFORMANCE TESTING PLAN CHANGE. (For any modification to a performance testing plan submitted on a previous certification.)

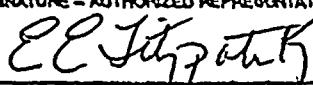
DESCRIPTION OF PERFORMANCE TESTING PLAN CHANGE (Attach additional pages as necessary and identify the item description being continued.)

New performance tests added to the testing schedule include:

CC10: CCW Inleakage to RCP Lower Bearing Oil Reservoir.	RC29: Steam Generator Blowdown Leak Upstream of Containment Isolation Valve.
RC12: RCP Lower Bearing Oil Reservoir Leak.	RP21: Failure of Feedwater Isol. to Occur.
RM03: Eberline Rad. Monitor Failures	RX29: Feedpump Discharge Pressure Transmitter (EPC-250) Failure.
	TRANSIENT 11: Load Rejection.

RECERTIFICATION (Describe corrective actions taken, attach results of completed performance testing in accordance with 10 CFR 85.45(b)(4)(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 Vice President	DATE 8/31/94
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In accordance with 10 CFR 85.8, 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 20535-0001

BY DELIVERY IN PERSON
TO THE NRC OFFICE AT:

ONE WHITE PLAIN NORTH
11555 ROCKVILLE PIKE
ROCKVILLE, MD

DONALD C. COOK NUCLEAR PLANT SIMULATOR

FOUR-YEAR REPORT

UNIT TWO

A. Purpose

The Cook Nuclear Plant simulator is used in the licensing of operations personnel and is therefore required to meet the criteria established in 10 CFR 50.55 Subpart E, Section 55.45.

To comply with 10 CFR 55.45, a report to the Commission which identifies simulator testing status must be submitted by the fourth anniversary of original certification. The purpose of this report is to satisfy this reporting requirement for the Cook Nuclear Plant simulator.

B. References

1. Title 10, Code of Federal regulations, Part 55, "Operator Licenses", Subpart E, Section 45.
2. U. S. Nuclear Regulatory Guide 1.149 "Nuclear Power Plant Simulation Facilities for use in Operator License Examinations.
3. ANSI 3.5, 1985, "Nuclear Power Plant Simulators for use in Operator Training.

C. Reporting Requirements

The requirements of this report as outlined in 10 CFR 50.55 are:

1. Identification of any uncorrected performance test failures and a schedule for correction of such performance failures, if any. Subpart E, Section 55.45 (b)(5)(ii).
2. A description of performance testing completed for the simulation facility. Subpart E, Section 55.45 (b)(5)(vi).

3. A description of the performance tests, if different, to be conducted on the simulation facility during the subsequent four-year period. Subpart E, Section 55.45 (b)(5)(vi).
4. A schedule for the conduct of approximately 25 percent of the performance tests per year for the subsequent four years. Subpart E, Section 55.45 (b)(5)(vi).

D. Implementation

Requirement #1: Uncorrected performance tests failures and a schedule for correction of such performance failures.

Uncorrected performance test failures include:

DR 93413 and 94068: Slight Tave increase following reactor trip. This increase is extremely short in duration and has very little training impact.

DR 94074: Pressurizer surge line temperature response is too rapid with pressurizer insurge and outsurge conditions.

DR 94078: Identify reason for and correct as necessary containment pressure spikes during large break LOCA.

DR 94066: Main generator seal oil response is incorrect when a seal oil leak is inserted.

DR 94128: Condenser Delta T values do not match plant information at low power.

DR 94214: Auxiliary feed line leak would not isolate properly.

DR 94252: Reactor head leak is collected in the wrong containment sump.

These DR's are scheduled for completion within one year of origination dates.

DR 93413	Completion date:	11/08/94
DR 94068	Completion date:	01/24/95
DR 94074	Completion date:	01/27/95
DR 94078	Completion date:	01/31/95
DR 94066	Completion date:	01/22/95
DR 94128	Completion date:	03/31/95
DR 94214	Completion date:	06/04/95
DR 94252	Completion date:	08/13/95

Requirement #2: Description of performance testing performed in the last four-year period.

ANSI 3.5, 1985 Appendix A lists the requirements relative to certification testing for nuclear plant simulators. These requirements fall into four separate categories.

1. Computer Real Time Test-verification of real time simulation by the simulator.
2. Steady State and Normal Plant Evolution Performance Tests
 - a) Steady State Tests-verification of simulator stability and verification that process parameter values reflect actual reference plant values.
 - b) Normal Plant Evolutions Performance Tests-verification of simulator ability to perform in accordance with reference plant operating procedures.
3. Transient tests-verification of simulator's ability to reproduce defined transients
4. Malfunction testing-testing of each generic malfunction to verify simulator response and system interaction.

Computer Real Time Test.

ANSI 3.5, 1985 requires real time verification to ensure the simulation dynamic performance is in the same time base relationships, sequences, durations, rates and accelerations as the dynamic performance of the reference plant.

The Cook Nuclear Plant simulator uses Real Time Executive Tasks (RTEX) to ensure that the simulator remains in real time during all simulation. This task uses a frame counter routine to ensure an overtime abort and simulator "freeze" condition occurs if the Real Time Executive Task fails to execute in allotted time period.

Simulator real-time tests have been performed annually with no failures identified. See pages 12 thru 25 for test performance dates.

Steady State and Normal Plant Evolutions Testing.

To ensure compliance with the standard regarding simulator steady state operation, the simulator has been operated at one hour intervals without operator action at power levels of 30%, 60%, 90%, and 100% as per the original certification testing schedule. Computed values were collected at half second intervals over the one hour time period for each power level. This data has been verified accurate against actual plant data and heat balance information to be within the tolerances for critical and non-critical parameters as established in ANSI 3.5, 1985. This data has also been plotted and verified not to vary more than 2% from initial values.

Refer to page 16 for steady state test abstract and completion dates.

Normal plant evolutions are tested and verified against the criteria established in ANSI 3.5 Section 3.1.1 annually per original certification schedule. These tests are performed in accordance with approved plant procedures as listed on page 15.

In addition to testing performed by simulator personnel, these evolutions have been tested as an integral step of the Reactor Operation Replacement training program. This program involves continuous operation (per approved plant procedures) of the simulator from full power to half loop conditions, and from half loop back to full power operation by instructors and SRO candidates with numerous years of plant operating experience.

ANSI 3.5 tests not listed or performed on a regular schedule are clarified below.

Core performance testing (3.1.1.9) is performed on the simulator when core cycle upgrades are made on the simulator (same cycle as the reference plant).

Operations surveillance tests (3.1.1.10) are performed on an as needed basis within the operations training program using approved plant procedures.

Transient Testing.

All transient tests required by ANSI 3.5, Appendix B section B.2.2 have been conducted on the simulator per the original certification schedule.

The data collected in the performance of these tests is collected at one half second intervals and has been compared to actual data where existing data was available.

These tests have been reviewed by a team of subject matter experts made up of operations and simulator personnel.

Refer to pages 17 and 18 for transient test abstracts and completion dates.

Malfunction Testing.

The Cook Nuclear Plant simulator has 310 malfunctions used to introduce transients and/or faults into the simulator for operator training. All malfunctions have been tested in the previous four year period with approximately 25% tested annually.

Refer to pages 19 thru 25 for malfunction test abstracts and completion dates.

Requirement #3: Description of performance tests, if different, to be conducted on the simulation facility during the subsequent four year period.

Refer to pages 26 thru 34 for a complete list of certification tests to be performed on the simulator in the next four year period. New tests added to the simulator include:

CC10: CCW Inleakage to RCP Lower Bearing Oil Reservoir
RC12: RCP Lower Bearing Oil Reservoir Leak
RC29: Steam Generator Blowdown Leak Upstream of Containment Isolation Vlv
RM03: Eberline Radiation Monitor Failures
RP21: Failure of Feedwater Isolation to Occur
RX29: Feedpump Discharge Pressure Transmitter (FPC-250) Failure
TRANSIENT 11: Load Rejection

Requirement #4: Schedule for the conduct of approximately 25 percent of the performance tests per year for the subsequent four years.

Pages 26 thru 34 outline the schedule for certification testing to be performed over the next four year period. Approximately 25% of all malfunction testing is scheduled annually.



11/11/11

DONALD C. COOK NUCLEAR PLANT SIMULATOR CERTIFICATION TESTING

The following pages consist of testing information relative to the Cook Nuclear Plant simulator certification requirements. The sections are:

- Computer Real Time testing
- Normal Plant Evolution (NPE) testing
- Steady State Testing
- Transient Testing
- Malfunction testing

All testing has been completed per requirements of ANSI 3.5, 1985 as amended by Regulatory Guide 1.149.

Deviations from test schedule submitted in the original certification report follow.

Special Transient Test ST-3 scheduled for completion in third quarter of 1991 was not completed or all data pertaining to the test was lost. Test was not identified as being delinquent until it became due in the third quarter of 1992. This is an in-house test and not a requirement of ANSI 3.5 appendix A.

Special Transient Tests ST-1 and ST-2 and Steady State Test SS-01 scheduled for completion in the first and second quarters of 1991 were not completed until the fourth quarter of same year. Review of yearly test completion identified incomplete tests and they were immediately rescheduled.

Special Transient Tests ST-4 scheduled for completion in the fourth quarter of 1992 was not completed until January 15, 1993. Test data review identified plant data corresponded to 90% thermal power, original test performed as scheduled was run at 100% power. Test was immediately rescheduled and completed at the proper power level.

Malfunction Tests ED12, IA04, RH07, TC12, RM01 scheduled for completion in the first and second quarters of 1991 were completed in the fourth quarter of 1991. Test review identified no documentation of these tests as being performed and they were immediately rescheduled.

Malfunction test RP12 was not performed in the fourth quarter of 1990. Test was inadvertently scheduled for both the third and fourth quarters of 1990. Test was completed as scheduled in the third quarter.

Malfunction test CC08 scheduled for completion in second quarter of 1992 was completed in the first quarter of 1992 as part of additional simulator testing.

Malfunction test FW49 scheduled for completion in the first quarter of 1993 has been deleted.

COOK NUCLEAR PLANT SIMULATOR
REAL TIME TEST REPORT

TEST NO.	TITLE	DATE
CRT-1	COMPUTER REAL TIME TEST	11/05/91
CRT-1	COMPUTER REAL TIME TEST	01/04/92
CRT-1	COMPUTER REAL TIME TEST	03/12/93
CRT-1	COMPUTER REAL TIME TEST	01/12/94

COOK NUCLEAR PLANT SIMULATOR
NORMAL PLANT EVOLUTION PERFORMANCE TESTING

TEST NUMBER	DESCRIPTION	PROCEDURE	DATE COMPLETE
NPE-1	RCS FILL AND VENT	02-OHP-4021.002.001	03/31/81
	RCS FILL AND VENT	02-OHP-4021.002.001	01/04/82
	RCS FILL AND VENT	02-OHP-4021.002.001	02/07/83
	RCS FILL AND VENT	02-OHP-4021.002.001	01/17/84
NPE-2	HEATUP FROM MODE 5 TO MODE 3	02-OHP-4021.001.001	06/30/81
	HEATUP FROM MODE 5 TO MODE 3	02-OHP-4021.001.001	04/12/82
	HEATUP FROM MODE 5 TO MODE 3	02-OHP-4021.001.001	06/11/83
	HEATUP FROM MODE 5 TO MODE 3	02-OHP-4021.001.001	06/26/84
NPE-3	REACTOR STARTUP	02-OHP-4021.001.002	09/30/81
	REACTOR STARTUP	02-OHP-4021.001.002	04/18/82
	REACTOR STARTUP	02-OHP-4021.001.002	09/23/83
NPE-4	POWER ESCALATION	02-OHP-4021.001.006	12/31/81
	POWER ESCALATION	02-OHP-4021.001.006	10/23/82
	POWER ESCALATION	02-OHP-4021.001.006	11/19/83
NPE-5	POWER REDUCTION	02-OHP-4021.001.003	06/28/81
	POWER REDUCTION	02-OHP-4021.001.003	04/18/82
	POWER REDUCTION	02-OHP-4021.001.003	05/28/83
	POWER REDUCTION	02-OHP-4021.001.003	06/27/84
NPE-6	PLANT COOLDOWN	02-OHP-4021.001.004	09/30/81
	PLANT COOLDOWN	02-OHP-4021.001.004	08/20/82
	PLANT COOLDOWN	02-OHP-4021.001.004	09/10/83
NPE-7	RCS DRAIN TO HALF LOOP	02-OHP-4021.002.005	12/31/81
	RCS DRAIN TO HALF LOOP	02-OHP-4021.002.005	12/12/82
	RCS DRAIN TO HALF LOOP	02-OHP-4021.002.005	12/15/83

COOK NUCLEAR PLANT SIMULATOR
STEADY STATE TESTING REPORT

TEST NO.	TITLE	DATE
SS-01	30% POWER STEADY STATE TEST	12/07/91
SS-01	30% POWER STEADY STATE TEST	03/26/92
SS-01	30% POWER STEADY STATE TEST	03/16/93
SS-01	30% POWER STEADY STATE TEST	03/28/94
SS-02	60% POWER STEADY STATE TEST	06/27/91
SS-02	60% POWER STEADY STATE TEST	06/24/92
SS-02	60% POWER STEADY STATE TEST	06/18/93
SS-02	60% POWER STEADY STATE TEST	06/26/94
SS-03	90% POWER STEADY STATE TEST	07/22/91
SS-03	90% POWER STEADY STATE TEST	08/28/92
SS-03	90% POWER STEADY STATE TEST	09/20/93
SS-04	100% POWER STEADY STATE TEST	12/07/91
SS-04	100% POWER STEADY STATE TEST	12/29/92
SS-04	100% POWER STEADY STATE TEST	11/30/93

COOK NUCLEAR PLANT SIMULATOR
TRANSIENT TESTS

TEST NUMBER	DESCRIPTION	DATE
TRANSIENT 01	MANUAL REACTOR TRIP	04/05/91
TRANSIENT 01	MANUAL REACTOR TRIP	02/17/92
TRANSIENT 01	MANUAL REACTOR TRIP	03/12/93
TRANSIENT 01	MANUAL REACTOR TRIP	01/22/94
TRANSIENT 02	TRIP OF ALL MAIN FEEDPUMPS	06/17/91
TRANSIENT 02	TRIP OF ALL MAIN FEEDPUMPS	06/22/92
TRANSIENT 02	TRIP OF ALL MAIN FEEDPUMPS	06/11/93
TRANSIENT 02	TRIP OF ALL MAIN FEEDPUMPS	06/26/94
TRANSIENT 03	CLOSURE OF ALL MSIV'S	10/23/91
TRANSIENT 03	CLOSURE OF ALL MSIV'S	08/28/92
TRANSIENT 03	CLOSURE OF ALL MSIV'S	09/23/93
TRANSIENT 04	TRIP OF ALL RCP'S	11/16/91
TRANSIENT 04	TRIP OF ALL RCP'S	10/26/92
TRANSIENT 04	TRIP OF ALL RCP'S	10/26/93
TRANSIENT 05	TRIP OF RCP #23	04/05/91
TRANSIENT 05	TRIP OF RCP #23	02/17/92
TRANSIENT 05	TRIP OF RCP #23	03/12/93
TRANSIENT 05	TRIP OF RCP #23	01/22/94
TRANSIENT 06	MAIN TURBINE TRIP W/O RX TRIP	06/17/91
TRANSIENT 06	MAIN TURBINE TRIP W/O RX TRIP	06/22/92
TRANSIENT 06	MAIN TURBINE TRIP W/O RX TRIP	06/21/93
TRANSIENT 06	MAIN TURBINE TRIP W/O RX TRIP	06/26/94
TRANSIENT 07	MAX POWER RAMP 100%-75%-100%	11/16/91
TRANSIENT 07	MAX POWER RAMP 100%-75%-100%	08/28/92
TRANSIENT 07	MAX POWER RAMP 100%-75%-100%	09/17/93
TRANSIENT 08	MAX SIZE LOCA WITH BLACKOUT	12/10/91
TRANSIENT 08	MAX SIZE LOCA WITH BLACKOUT	10/26/92
TRANSIENT 08	MAX SIZE LOCA WITH BLACKOUT	12/06/93
TRANSIENT 09	MAX SIZE MAIN STEAMLINE RUPTURE	04/05/91
TRANSIENT 09	MAX SIZE MAIN STEAMLINE RUPTURE	02/17/92
TRANSIENT 09	MAX SIZE MAIN STEAMLINE RUPTURE	03/12/93
TRANSIENT 09	MAX SIZE MAIN STEAMLINE RUPTURE	01/21/94
TRANSIENT 10	SLOW RCS DEPRESSURIZATION TO SATURATION	06/17/91
TRANSIENT 10	SLOW RCS DEPRESSURIZATION TO SATURATION	10/26/92
TRANSIENT 10	SLOW RCS DEPRESSURIZATION TO SATURATION	06/14/93
TRANSIENT 10	SLOW RCS DEPRESSURIZATION TO SATURATION	06/26/94

COOK NUCLEAR PLANT SIMULATOR
SPECIAL TRANSIENT TESTING

TEST NUMBER	DESCRIPTION	DATE
ST-01	NATURAL CIRC. COOLDOWN W/VESSEL HEAD VOID FORMATION	12/30/91
ST-01	NATURAL CIRC. COOLDOWN W/VESSEL HEAD VOID FORMATION	02/25/92
ST-01	NATURAL CIRC. COOLDOWN W/VESSEL HEAD VOID FORMATION	03/12/93
ST-01	NATURAL CIRC. COOLDOWN W/VESSEL HEAD VOID FORMATION	03/30/94
ST-02	ANTICIPATED TRANSIENT WITHOUT SCRAM (ATWS)	12/09/91
ST-02	ANTICIPATED TRANSIENT WITHOUT SCRAM (ATWS)	06/24/92
ST-02	ANTICIPATED TRANSIENT WITHOUT SCRAM (ATWS)	06/11/93
ST-02	ANTICIPATED TRANSIENT WITHOUT SCRAM (ATWS)	06/10/94
ST-03	STEAM GENERATOR TUBE RUPTURE	08/28/92
ST-03	STEAM GENERATOR TUBE RUPTURE	09/24/93
ST-04	UNIT 2 REACTOR TRIP, NOVEMBER 13, 1985	12/30/91
ST-04	UNIT 2 REACTOR TRIP, NOVEMBER 13, 1985	01/15/93
ST-04	UNIT 2 REACTOR TRIP, NOVEMBER 13, 1985	12/06/93

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST REPORT

YEAR	TEST NUMBER	TITLE	DATE TESTED
1990	CC02	CCW PUMP FAILURE TO AUTO START	09/05/90
1990	CC06	SEAL WATER HX TUBE LEAK	09/05/90
1990	CH01	CONTAIN. PRESS. RELIEF VLV FAILURE	10/01/90
1990	CS03	REFUELING WATER STORAGE TANK LEAK	10/01/90
1990	CV04	LETDOWN LINE ORIFICE ISO. VLV FAILURE	10/01/90
1990	CV09	LETDOWN TEMPERATURE CONTROL FAILURE	11/13/90
1990	CV13	CHARGING PUMP TRIP	10/01/90
1990	CV17	VOLUME CONTROL TANK LEAKAGE	10/01/90
1990	CV26	REACTOR COOLANT PUMP #1 SEAL FAILURE	10/02/90
1990	CV31	BACKPRESSURE CONT VLV FAILURE-QRV-200	10/03/90
1990	CW02	CW PUMP DISCHARGE VALVE FAILURE	09/05/90
1990	ED03	LOSS OF RESERVE AUXILIARY TRANSFORMER	10/02/90
1990	ED06	LOSS OF 600 VAC BUS	03/25/90
1990	ED07	LOSS OF 480 VAC BUS	11/21/90
1990	ED11	LOSS OF 250 VDC BUS	03/25/90
1990	ED15	LOSS OF VITAL INST BUS STATIC SWITCH	03/25/90
1990	ED16	AUXILIARIES AUTO BUS TRANSFER FAILURE	10/03/90
1990	ED19	ELECTRICAL GRID LOAD REJECTION	07/16/90
1990	ED20	ANN PANEL POWER SUPPLY FAILURE	09/06/90
1990	ED24	LOSS OF 250 VDC TRAIN "N" BATTERY	09/07/90
1990	EG03	MG AUTO VOLTAGE REG FAILURE TO MANUAL	09/07/90
1990	EG07	DG SPEED CONTROL FAILURE	10/03/90
1990	EG11	DIESEL GENERATOR FAILURE TO TRIP	09/11/90
1990	EG15	MG SEAL OIL UNIT PIPING RUPTURE	09/11/90
1990	FP05	CONTROL ROOM CABLE VAULT FIRE	09/11/90
1990	FW05	MAIN FEEDPUMP TURBINE TRIP	10/03/90
1990	FW18	HP HTR #6 LVL CONTROL VALVE FAILURE	09/12/90
1990	FW22	HP HTR #5 LVL CONTROL VALVE FAILURE	09/24/90
1990	FW26	LP HTR #4 LVL CONT TRANSMITTER FAIL	10/24/90
1990	FW30	LP HTR #3 LVL CONTROL VALVE FAILURE	10/24/90
1990	FW34	CONDENSATE BOOSTER PUMP TRIP	10/23/90
1990	FW38	LOSS OF CONDENSER VACUUM	09/13/90
1990	FW42	CONDENSATE STORAGE TANK LEAK	09/24/90
1990	FW46	AUX FEEDPUMP TRIP	09/24/90
1990	FW50	TDAFW PUMP SPEED CONTROLLER FAILURE	09/24/90
1990	FW54	FDWTR RUPT OUTSIDE CONTAINMENT	04/09/90
1990	FW56	FEED PUMP STEAM SUPPLY CONT FAILURE	09/24/90
1990	MS03	MAIN STM LINE BREAK OUTSIDE CONT	10/24/90
1990	MS08	SG STOP VALVE DRIFTS SHUT	10/24/90
1990	MS12	MSR DRAIN TK ALT DRAIN LVL CONT FAIL	12/27/90
1990	MS17	STEAM SEAL CONTROLLER OSCILLATION	09/24/90
1990	NI02	SOURCE RANGE HV FAILURE TO DEENERGIZE	12/27/90
1990	NI06	INTERMEDIATE RANGE MONITOR FAILURE	09/24/90
1990	NI10	POWER RANGE CHANNEL FAILURE	11/12/90
1990	NI14	INTERMEDIATE RANGE CHANNEL BLOWN FUSE	11/13/90
1990	RC03	RCS LEAK	09/24/90
1990	RC07	REACTOR COOLANT PUMP LOCKED ROTOR	11/13/90
1990	RC13	RCP UPPER BEARING OIL RESERVOIR LEAK	11/13/90
1990	RC17	PRESSURIZER PORV FAILURE	11/14/90
1990	RC24	STEAM GENERATOR TUBE LEAK	09/25/90
1990	RC28	PRESSURIZER INSTRUMENT LINE LEAKAGE	11/13/90
1990	RD04	STUCK CONTROL ROD (UNTRIPPABLE)	09/25/90
1990	RD08	IN-HOLD-OUT SWITCH FAILURE	09/25/90
1990	RD12	FAILURE OF CONTROL RODS TO MOVE	11/14/90

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST REPORT

YEAR	TEST NUMBER	TITLE	DATE TESTED
1990	RD16	IRPI FAILURE	11/21/90
1990	RH02	RHR PUMP SEAL FAILURE	09/25/90
1990	RH06	RHR INJ HDR RELIEF VALVE FAIL (SV-104)	12/27/90
1990	RH11	RHR RET FLOW TRANS FAILURE (IFI-335)	09/25/90
1990	RH15	SI ACCUMULATOR N2 PRESSURE LOSS	11/21/90
1990	RP03	FAILURE OF REACTOR TRIP BREAKER	09/25/90
1990	RP08	SPURIOUS FEEDWATER ISOLATION TRIP	09/25/90
1990	RP12	SPURIOUS ACTUATION OF SI	09/26/90
1990	RP16	FAILURE OF CI PHASE B TO AUTO ACTUATE	09/26/90
1990	RP20	TRAIN "B" K600 RELAY FAILURES	09/27/90
1990	RX04	PRESSURIZER PRESSURE TRANS FAILURE	12/27/90
1990	RX08	PZR SPRAY VALVE AUTO CONTROL FAILURE	11/14/90
1990	RX12	MS RELIEF VLV CONTROLLER OSCILLATION	12/27/90
1990	RX16	STEAM DUMP "PRES CONT" ERRATIC OPS	12/27/90
1990	RX20	SG STEAM FLOW TRANSMITTER FAILURE	12/27/90
1990	RX24	FW CONTROL VALVE CONTROLLER FAILURE	11/14/90
1990	RX27	FEED PUMP DP CONTROLLER FAILURE	07/10/90
1990	RX28	LOSS OF 480V MCC	09/26/90
1990	SW01	NON ESSENTIAL SERVICE WATER PUMP TRIP	09/26/90
1990	SW05	ESW PIPING RUPTURE	09/26/90
1990	TC02	MAIN TURBINE FAILURE TO TRIP	11/14/90
1990	TC06	MAIN TURBINE ERRATIC CONTROL VALVE	09/26/90
1990	TC11	AUTO LOAD SET OSCILLATION	12/26/90
1990	TP02	TURBINE AUX COOLING PIPING RUPTURE	12/26/90
1990	TU03	MAIN TURBINE HIGH VIBRATION	09/26/90
1991	CC03	COMPONENT COOLING WATER RUPTURE	09/18/91
1991	CC07	COMPONENT COOLING HX TUBE RUPTURE	02/16/91
1991	CH02	CONTAIN. PRESSURE TRANSMITTER FAILURE	05/15/91
1991	CS04	RHST LEVEL TRANSMITTER FAILURE	11/13/91
1991	CV05	LETDOWN HEAT EXCHANGER TUBE LEAK	02/16/91
1991	CV10	NORMAL CHG LINE LEAK INSIDE CONTAIN	07/02/91
1991	CV14	CHARGING PUMP SUCTION LINE LEAKAGE	10/23/91
1991	CV20	INADVERTENT BORATION	02/16/91
1991	CV27	REACTOR COOLANT PUMP #2 SEAL FAILURE	05/15/91
1991	CV32	FW FLOW TRANSMITTER (QFC-422) FAILURE	07/10/91
1991	CH03	TRAVELING WATER SCREEN FOULING	05/15/91
1991	ED04	LOSS OF EP SUPPLY TRANS TR-12-EP	10/24/91
1991	ED21	4KV/600V AUX TRANSFORMER LOSS	09/12/91
1991	EG04	HG AUTO VOLTAGE REGULATOR FAILURE	02/16/91
1991	EG08	DG SPEED GOVERNOR FAILURE	05/15/91
1991	EG12	DG OUTPUT BREAKER FAILURE TO AUTO CLS	09/12/91
1991	FP01	FIRE PROTECTION SYSTEM RUPTURE	10/23/91
1991	FW01	MAIN FEEDWATER RUPTURE AT SG INLET	11/13/91
1991	FW06	MFP TURBINE SHEARED SHAFT (UNRECOV)	02/16/91
1991	FW15	FEEDWATER CONTROL VALVE FAILURE	02/16/91
1991	FW19	HP HEATER #6 TUBE RUPTURE	05/15/91
1991	FW23	HP HEATER #5 TUBE RUPTURE	07/19/91
1991	FW27	LP HTR #4 LVL CONTROL VALVE FAILURE	05/15/91
1991	FW31	LP HEATER #3 TUBE RUPTURE	11/13/91
1991	FW35	COND BOOSTER PP DISC PIPING RUPTURE	07/19/91
1991	FW39	CONDENSER TUBE LEAK	11/13/91
1991	FW43	HEATER DRAIN PUMP TRIP	02/18/91
1991	FW47	AUX FEEDPUMP SUCTION LINE LEAKAGE	05/16/91
1991	FW51	TDAFP TRIP & THROTTLE VALVE FAILURE	07/19/91

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST REPORT

YEAR	TEST NUMBER	TITLE	DATE TESTED
1991	IA01	PLANT AIR COMPRESSOR TRIP	02/18/91
1991	IA05	CONT AIR SYS RUPTURE IN CONTAINMENT	11/13/91
1991	MS04	MS LINE BREAK DOWNSTREAM SG STOP VLVS	03/16/91
1991	MS09	MSR TUBE RUPTURE	05/16/91
1991	MS13	MSR DRAIN TK ALT LVL CONT VALVE FAIL	07/26/91
1991	MS18	STEAM DUMP CONTROL VALVE FAILURE	05/16/91
1991	NI03	INCORRECT SR CHANNEL RESPONSE	11/05/91
1991	NI07	IR IMPROPER COMPENSATION	03/16/91
1991	NI11	PR CHANNEL OUTPUT OSCILLATION	05/16/91
1991	NI15	POWER RANGE CHANNEL BLOWN FUSE	08/16/91
1991	RC04	PRESSURIZER SURGE LINE LEAK	11/13/91
1991	RC08	REACTOR COOLANT PUMP SHAFT BREAK	03/18/91
1991	RC14	PZR HIGH GAS CONCENTRATION IN VPR SP	09/18/91
1991	RC19	PRESSURIZER SAFETY VALVE FAILURE	05/16/91
1991	RC25	SG BD LINE LK DOWNSTREAM CONT ISOL	11/13/91
1991	RD01	DROPPED CONTROL ROD	03/16/91
1991	RD05	EJECT OF RD WITH RUPT MECH HOUSING	05/16/91
1991	RD09	UNCONT ROD MOTION DEMAND (AUTOMATIC)	09/12/91
1991	RD13	ROD GROUP FAILURE TO MOVE	09/12/91
1991	RD17	ROD GROUP STEP COUNTER FAILURE	11/13/91
1991	RH03	RHR HX BYPASS FLOW CONTROL VALVE FAIL	11/05/91
1991	RH07	RHR NORMAL CD SUC LINE LK INSIDE CONT	11/05/91
1991	RH12	SI LOOP CHECK VALVE LEAKAGE	03/16/91
1991	RM01	AREA RADIATION MONITOR FAILURE	12/20/91
1991	RP05	REACTOR COOLANT FLOW TRANS FAILURE	05/16/91
1991	RP09	FAILURE OF FW ISOLATION TRIP TO OCCUR	07/10/91
1991	RP13	FAILURE OF CI PHASE A TO AUTO ACTUATE	11/13/91
1991	RP17	FAILURE OF CI PHASE B TO MANUAL ACT	03/16/91
1991	RX01	RCS HOT LEG PRESSURE TRANS FAILURE	05/17/91
1991	RX05	PZR LVL TRANS FAILURE (PROT CHANNEL)	07/09/91
1991	RX09	PZR PRES MASTER CONTROLLER FAILURE	11/05/91
1991	RX13	STEAM DUMP "TAVG" CONTROLLER FAILURE	03/16/91
1991	RX17	SG PRESSURE TRANSMITTER FAILURE	05/16/91
1991	RX21	SG FEED FLOW TRANSMITTER FAILURE	07/09/91
1991	RX25	FEEDWATER CONTROL VALVE OSCILLATION	11/05/91
1991	SI01	SAFETY INJECTION PUMP TRIP	09/12/91
1991	SW02	NESW PIPING RUPTURE IN TURB BLDG	03/16/91
1991	SW06	FP TURB OIL COOLING CONTROLLER FAILURE	05/17/91
1991	TC03	MAIN TURBINE AUTO TRIP FAILURE	11/05/91
1991	TC07	MAIN TURBINE INTERCEPT VALVE FAILURE	11/10/91
1991	TC12	MAIN TURBINE SPEED SIGNAL FAILURE	11/05/91
1991	TP03	MG STATOR COOLING SYSTEM RUPTURE	05/17/91
1991	TU05	MAIN TURBINE BEARING FAILURE	07/19/91
1992	CC04	MISC CCW HDR RUPTURE INSIDE CONTAIN.	03/23/92
1992	CC08	CCW LEAKAGE INTO RCP BRNG OIL RES.	02/24/92
1992	CS01	CONTAINMENT SPRAY PUMP TRIP	06/02/92
1992	CV01	LETDOWN LINE RUPTURE INSIDE CONTAIN.	08/17/92
1992	CV06	QRV-301 FAILURE	11/23/92
1992	CV11	NORMAL CHG LINE LEAK OUTSIDE CONTAIN	01/04/92
1992	CV15	VCT LEVEL CONTROL VALVE FAILURE	05/27/92
1992	CV21	INADVERTENT DILUTION	07/13/92
1992	CV28	REACTOR COOLANT PUMP #3 SEAL FAILURE	12/28/92
1992	CV33	BA FLOW CONTROLLER (QFC-421) FAILURE	01/04/92
1992	ED01	LOSS OF 345KV BUS NO. 1	08/17/92

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST REPORT

YEAR	TEST NUMBER	TITLE	DATE TESTED
1992	ED10	LOSS OF 120 VAC CONTROL ROOM POWER	11/24/92
1992	ED22	LOSS OF SWITCHGEAR CONT POWER TRAIN B	06/02/92
1992	EG05	MG OUTPUT BREAKER FAILURE TO TRIP	08/17/92
1992	EG09	DG VOLTAGE CONTROL FAILURE	11/24/92
1992	EG13	DG OUTPUT BREAKER FAILURE TO CLOSE	01/04/92
1992	FP02	INADV ACT OF CHARCOAL FILT FIRE PROT.	06/15/92
1992	FW02	MFW RUPTURE BEFORE SG CHECK VALVE	08/28/92
1992	FW07	MAIN FEEDPUMP TURBINE BEARING FAILURE	12/11/92
1992	FW16	HP HTR #6 LVL CONT TRANSMITTER FAIL	02/11/92
1992	FW20	HP HTR #5 LVL CONT TRANSMITTER FAIL	06/15/92
1992	FW24	HP HEATER #5 STEAM INLET RUPTURE	01/04/92
1992	FW28	LP HEATER #4 TUBE RUPTURE	08/28/92
1992	FW32	LP HEATER #3 STEAM INLET RUPTURE	06/15/92
1992	FW36	COND BOOSTER PP RECIRC VALVE FAILURE	03/23/92
1992	FW40	HOTWELL LEVEL CONTROLLER FAILURE	12/19/92
1992	FW44	HEATER DRAIN PUMP BEARING FAILURE	05/27/92
1992	FW48	AUX FEEDPUMP AUTO START FAILURE	08/28/92
1992	FW52	STEAM BOUND AFW PUMP	09/24/92
1992	IA02	PLANT AIR SYSTEM RUPTURE	12/28/92
1992	MS01	MS LINE BREAK AT SG EXIT	02/11/92
1992	MS05	MAIN STEAM POWER RELIEF VALVE LEAK	06/02/92
1992	MS10	MSR COIL DRAIN TANK LVL CONT FAILURE	09/24/92
1992	MS14	MSR STEAM SUPPLY VALVE FAILURE	12/28/92
1992	MS21	AUX STM 150 # HDR CONT VALVE FAILURE	02/14/92
1992	NI04	SR ENERGIZATION AT POWER (P10 FAILURE)	06/02/92
1992	NI08	PR CHANNEL UPPER DETECTOR FAILURE	08/28/92
1992	NI12	AUDIO COUNT RATE CHANNEL FAILURE	12/19/92
1992	RC01	RCS COLD LEG LOOP RUPTURE	03/23/92
1992	RC05	REACTOR VESSEL HEAD FLANGE LEAK	12/19/92
1992	RC09	REACTOR COOLANT PUMP TRIP	02/14/92
1992	RC15	PRESSURIZER SPRAY VALVE FAILURE	06/15/92
1992	RC21	PRT RUPTURE DISC FAILURE	08/28/92
1992	RC26	FAILED FUEL ELEMENT	12/28/92
1992	RD02	BROKEN CONTROL ROD	02/14/92
1992	RD06	UNCONT ROD BANK CONTINUOUS WITHDRAWAL	06/15/92
1992	RD10	CR MOVE OPPOSITE TO DEMAND SIGNAL	08/28/92
1992	RD14	IMPROPER BANK OVERLAP	11/11/92
1992	RD18	ROD CONTROL MG SET TRIP	06/02/92
1992	RH04	RHR HX FLOW CONTROL VALVE FAILURE	06/15/92
1992	RH08	RWST SUPPLY LINE TO RHR PUMP RUPTURE	08/28/92
1992	RH13	SI ACC TANK CHECK VALVE LEAKAGE	12/19/92
1992	RM02	PROCESS RADIATION MONITOR FAILURE	03/11/92
1992	RP06	SPURIOUS STEAM LINE ISOLATION	01/21/92
1992	RP10	FAILURE OF SI TO ACTUATE-AUTOMATIC	06/02/92
1992	RP14	FAILURE OF CI PHASE A TO MANUAL ACT	08/28/92
1992	RP18	SPURIOUS ACTUATION OF CI PHASE B	12/19/92
1992	RX02	RCS HOT LEG TEMP TRANS FAILURE (NR)	01/21/92
1992	RX06	PZR CAL LEVEL TRANSMITTER FAILURE	05/27/92
1992	RX10	PZR WATER LEVEL CONT OSCILLATION	09/24/92
1992	RX14	STEAM DUMP "PRES" CONTROLLER FAILURE	12/28/92
1992	RX18	MS TURB BYPASS HDR PRESS TRANS FAILURE	01/21/92
1992	RX22	SG PROGRAMMED LEVEL SIGNAL FAILURE	05/27/92
1992	RX26	FP TURBINE SPEED CONTROLLER FAILURE	08/28/92
1992	SI02	SAFETY INJECTION PUMP SHEARED SHAFT	12/28/92

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST REPORT

YEAR	TEST NUMBER	TITLE	DATE TESTED
1992	SW03	NESW RUPT ON LWR CONT VENT CLR SUP	02/11/92
1992	SW07	MT OIL TEMPERATURE CONTROLLER FAILURE	06/15/92
1992	TC04	MAIN TURBINE STOP VALVE FAILURE	08/28/92
1992	TC09	MAIN GENERATOR LOAD LIMITER FAILURE	08/28/92
1992	TC13	TURBINE RUNBACK FAILURE	12/19/92
1992	TP05	STATOR COOLING WTR SYS HIGH COND	12/28/92
1992	TU06	TURBINE BLADE EJECTION	02/14/92
1993	CC01	COMPONENT COOLING WATER PUMP TRIP	02/27/93
1993	CC05	MISC CCW HDR RUPTURE IN AUX BUILDING	04/26/93
1993	CC09	CCW LEAK ON RHR PUMP SUPPLY LINE	08/24/93
1993	CC10	CCW INLEAKAGE INTO RCP LOWER BRNG OIL RSVR	11/23/93
1993	CS02	CONTAIN. SPRAY PUMP SUCTION BLOCKAGE	11/20/93
1993	CV02	LETDOWN LINE RUPTURE OUTSIDE CONTAIN.	02/24/93
1993	CV08	LETDOWN LINE RELIEF VLV SV-51 LEAKAGE	04/26/93
1993	CV12	CCP FLOW CONTROL VALVE FAILURE	09/15/93
1993	CV16	VCT LEVEL TRANSMITTER FAILURE	11/20/93
1993	CV25	RCP THERMAL BARRIER HX RUPTURE	02/16/93
1993	CV30	REDUCED CCP CAPACITY	06/30/93
1993	CW01	CIRCULATING WATER PUMP TRIP	08/19/93
1993	ED02	LOSS OF AUXILIARY TRANSFORMER	11/20/93
1993	ED05	LOSS OF 4160 VAC BUS	08/25/93
1993	ED08	LOSS OF 600V MCC	08/25/93
1993	ED12	LOSS OF 250 VDC POWER (TRAIN A)	08/27/93
1993	ED13	LOSS OF 250 VDC POWER (TRAIN B)	08/27/93
1993	ED14	LOSS OF 250 VDC BATTERY CHARGER	08/27/93
1993	ED17	LOSS OF PLANT LIGHTING	08/27/93
1993	ED18	GRID VOLTAGE OSCILLATION	09/03/93
1993	ED23	LOSS OF SWITCHGEAR CONT POWER TRAIN A	02/27/93
1993	ED25	LOSS OF 765/345KV TRANSFORMER BANK #4	09/03/93
1993	ED26	LOSS OF 765KV DUMONT LINE	09/13/93
1993	EG01	MAIN GENERATOR TRIP	04/26/93
1993	EG06	DIESEL GENERATOR TRIP	09/13/93
1993	EG10	DIESEL GENERATOR FAILURE TO START	11/20/93
1993	EG14	DG RUNNING RELAY FAILURE	02/27/93
1993	FP03	DIESEL GENERATOR ROOM CO2 ACTUATION	05/31/93
1993	FW03	MFW RUPT BETWEEN FEEDFLOW ELMT & FRV	08/24/93
1993	FW12	FEEDPUMP TURBINE LUBE OIL SYSTEM LEAK	11/20/93
1993	FW17	HP HTR #6 LVL CONTROLLER AUTO FAILURE	03/10/93
1993	FW21	HP HTR #5 LVL CONTROLLER AUTO FAILURE	04/26/93
1993	FW25	HOTWELL PUMP TRIP	09/12/93
1993	FW29	LP HTR #3 LVL CONT TRANSMITTER FAIL	11/20/93
1993	FW33	LP HEATER BYPASS VALVE FAILURE	03/10/93
1993	FW37	HOTWELL PUMP DISCHARGE PIPING RUPTURE	04/26/93
1993	FW41	HW LEVEL CONTROL TRANSMITTER FAILURE	08/24/93
1993	FW45	HEATER DRAIN PUMP ELO VLV FAILS OPEN	11/20/93
1993	IA03	CONTROL AIR COMPRESSOR TRIP	05/31/93
1993	IA04	CONT AIR SYS RUPT IN TURBINE BUILDING	09/13/93
1993	MS02	MAIN STEAM LINE BREAK AT SG EXIT	08/12/93
1993	MS06	STEAM GENERATOR SAFETY VALVE LEAK	11/20/93
1993	MS11	MSR COIL DRAIN TANK LVL CONT VLV FAIL	02/27/93
1993	MS16	STEAM SEAL CONTROLLER FAILURE	05/31/93
1993	NI01	SOURCE RANGE MONITOR FAILURE	09/13/93
1993	NI05	SOURCE RANGE CHANNEL SPIKES	11/23/93
1993	NI09	PR CHANNEL LOWER DETECTOR FAILURE	02/27/93



10/10/10

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST REPORT

YEAR	TEST NUMBER	TITLE	DATE TESTED
1993	NI13	SOURCE RANGE INSTRUMENT BLOWN FUSE	05/31/93
1993	RC02	RCS HOT LEG LOOP LEAK	09/12/93
1993	RC06	RCS EMERGENCY VENT LEAKAGE	11/22/93
1993	RC10	RCS COLD LEG LEAK	09/13/93
1993	RC11	REACTOR COOLANT PUMP HIGH VIBRATION	02/27/93
1993	RC12	RCP LOWER BEARING OIL RESERVOIR LEAK	11/13/93
1993	RC16	PRESSURIZER STEAM SPACE MANWAY LEAK	05/31/93
1993	RC23	STEAM GENERATOR TUBE RUPTURE	09/13/93
1993	RC27	RTD BYPASS MANIFOLD FLOW DEGRADATION	11/23/93
1993	RC29	S/G BLOWDOWN LINE LEAK UPSTREAM OF CIV	11/13/93
1993	RD03	STUCK CONTROL ROD (TRIPPABLE)	02/24/93
1993	RD07	UNCONT ROD BANK CONTINUOUS INSERTION	05/31/93
1993	RD11	AUTO CONTROL ROD SPEED FAILURE	08/24/93
1993	RD15	IRPI POWER LOSS	11/22/93
1993	RD19	IMPROPER ROD WORTH	12/13/93
1993	RH01	RHR PUMP TRIP	03/01/93
1993	RH05	RHR HEAT EXCHANGER TUBE LEAK	05/31/93
1993	RH09	RHR PUMP SUCTION PIPE RUPTURE	08/24/93
1993	RH14	SI ACCUMULATOR TANK LEVEL LOSS	11/23/93
1993	RM03	EBERLINE AREA RADIATION MONITOR FAILURES	11/29/93
1993	RP01	REACTOR TRIP ACB AUTO TRIP FAILURE	02/16/93
1993	RP07	FAILURE OF STEAM LINE ISO TO ACTIVATE	05/31/93
1993	RP11	FAILURE OF SI TO ACTUATE-MANUALLY	08/26/93
1993	RP15	SPURIOUS ACTUATION OF CI PHASE A	11/22/93
1993	RP19	TRAIN "A" K600 RELAY FAILURES	03/10/93
1993	RP21	FAILURE OF FWI TRIP TO OCCUR	11/13/93
1993	RX03	RCS COLD LEG TEMP TRANS FAILURE (NR)	04/21/93
1993	RX07	REDUCED PRESSURIZER HEATER CAPACITY	09/12/93
1993	RX11	SG RELIEF VALVE CONTROLLER FAILURE	11/29/93
1993	RX15	STEAM DUMP SYSTEM FAILURE TO RESPOND	03/01/93
1993	RX19	TURBINE IMPULSE TRANSMITTER FAILURE	05/31/93
1993	RX23	SG LEVEL TRANSMITTER FAILURE	09/13/93
1993	RX29	FPC-250 TRANSMITTER FAILURE	12/10/93
1993	SI03	HIGH HEAD SI LINE RUPTURE	02/24/93
1993	SW04	ESSENTIAL SERVICE WATER PUMP TRIP	04/26/93
1993	TC01	MAIN TURBINE TRIP	09/12/93
1993	TC05	MAIN TURBINE CONTROL VALVE FAILURE	11/23/93
1993	TC10	MAIN GEN OPERATING DEVICE FAILURE	03/01/93
1993	TP01	TURBINE AUX COOLING PUMP TRIP	04/26/93
1993	TU01	AUXILIARY LUBE OIL PUMP TRIP	09/13/93
1993	WD01	RELEASE OF RADIOACTIVE GAS FROM GDT	11/23/93
1994	CC02	CCW PUMP FAILURE TO AUTO START	01/12/94
1994	CH01	CONTAIN. PRESS. RELIEF VLV FAILURE	04/04/94
1994	CV04	LETDOWN LINE ORIFICE ISO. VLV FAILURE	04/04/94
1994	CV13	CHARGING PUMP TRIP	04/04/94
1994	CV17	VOLUME CONTROL TANK LEAKAGE	04/04/94
1994	CV31	BACKPRESSURE CONT VLV FAILURE-QRV-200	04/04/94
1994	ED02	LOSS OF AUXILIARY TRANSFORMER	01/12/94
1994	ED06	LOSS OF 600 VAC BUS	01/15/94
1994	ED11	LOSS OF 250 VDC BUS	01/15/94
1994	ED15	LOSS OF VITAL INST BUS STATIC SWITCH	01/22/94
1994	EG07	DG SPEED CONTROL FAILURE	04/04/94
1994	EG15	MG SEAL OIL UNIT PIPING RUPTURE	01/22/94
1994	FW18	HP HTR #6 LVL CONTROL VALVE FAILURE	01/17/94

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST REPORT

YEAR	TEST NUMBER	TITLE	DATE TESTED
1994	FW22	HP HTR #5 LVL CONTROL VALVE FAILURE	01/17/84
1994	FW26	LP HTR #4 LVL CONT TRANSMITTER FAIL	06/04/84
1994	FW34	CONDENSATE BOOSTER PUMP TRIP	06/04/84
1994	FW38	LOSS OF CONDENSER VACUUM	01/17/84
1994	FW46	AUX FEEDPUMP TRIP	01/17/84
1994	FW50	TDAFW PUMP SPEED CONTROLLER FAILURE	01/18/84
1994	FW54	FDWTR RUPT OUTSIDE CONTAINMENT	06/04/84
1994	MS08	SG STOP VALVE DRIFTS SHUT	06/04/84
1994	MS17	STEAM SEAL CONTROLLER OSCILLATION	01/18/84
1994	NI02	SOURCE RANGE HV FAILURE TO DEENERGIZE	06/06/84
1994	NI14	INTERMEDIATE RANGE CHANNEL BLOWN FUSE	06/04/84
1994	RC13	RCP UPPER BEARING OIL RESERVOIR LEAK	06/04/84
1994	RC24	STEAM GENERATOR TUBE LEAK	01/18/84
1994	RC28	PRESSURIZER INSTRUMENT LINE LEAKAGE	06/04/84
1994	RD04	STUCK CONTROL ROD (UNTRIPPABLE)	01/18/84
1994	RH02	RHR PUMP SEAL FAILURE	01/22/84
1994	RH06	RHR INJ HDR RELIEF VALVE FAIL (SV-104)	06/06/84
1994	RH11	RHR RET FLOW TRANS FAILURE (IFI-335)	01/22/84
1994	RP08	SPURIOUS FEEDWATER ISOLATION TRIP	01/22/84
1994	RP16	FAILURE OF CI PHASE B TO AUTO ACTUATE	01/22/84
1994	RX04	PRESSURIZER PRESSURE TRANS FAILURE	06/04/84
1994	RX12	MS RELIEF VLV CONTROLLER OSCILLATION	06/04/84
1994	RX20	SG STEAM FLOW TRANSMITTER FAILURE	06/04/84
1994	RX27	FEED PUMP DP CONTROLLER FAILURE	01/22/84
1994	TC06	MAIN TURBINE ERRATIC CONTROL VALVE	01/18/84
1994	TC11	AUTO LOAD SET OSCILLATION	06/04/84
1994	TP02	TURBINE AUX COOLING PIPING RUPTURE	06/02/84

DONALD C. COOK NUCLEAR PLANT SIMULATOR CERTIFICATION SCHEDULE

The following pages consist of the Cook Nuclear Plant Simulator Certification Test schedule through 1998. This section describes testing for:

Testing required per Appendices A and B of ANSI 3.5, 1993
Malfunction Testing

Test schedule has been modified from last report to include new malfunctions added to the simulator. Transient test #11 has been added to the schedule to incorporate change of ANSI 3.5 in the 1993 revision.

All malfunctions are scheduled to be completed on a four year rotation with approximately 25% performed annually.

COOK NUCLEAR PLANT SIMULATOR
ANSI 3.5 APPENDICIES A AND B
ANNUAL TESTING SCHEDULE

QTR 1	QTR 2	QTR 3	QTR 4
-----	-----	-----	-----
CRT-1			
NPE-1	NPE-2	NPE-3	NPE-4
NPE-5	NPE-6	NPE-7	
SS-01	SS-02	SS-03	SS-04
ST-01	ST-02	ST-03	ST-04
TRANS-01	TRANS-02	TRANS-03	TRANS-04
TRANS-05	TRANS-06	TRANS-07	TRANS-08
TRANS-09	TRANS-10	TRANS-11	

TEST DESCRIPTIONS:

CRT-1 COMPUTER REAL TIME TEST

NPE-1 RCS FILL AND VENT
NPE-2 COLD SHUTDOWN TO HOT STANDBY
NPE-3 REACTOR STARTUP
NPE-4 PLANT STARTUP/POWER ESCALATION
NPE-5 POWER REDUCTION
NPE-6 PLANT COOLDOWN
NPE-7 RCS DRAIN

SS-1 STEADY STATE TEST 1
SS-2 STEADY STATE TEST 2
SS-3 STEADY STATE TEST 3
SS-4 STEADY STATE TEST 4

ST-1 NATURAL CIRCULATION COOLDOWN W/VESSEL HEAD VOID FORMATION
ST-2 ANTICIPATED TRANSIENT WITHOUT SCRAM (ATWS)
ST-3 STEAM GENERATOR TUBE RUPTURE
ST-4 UNIT 2 REACTOR TRIP, NOVEMBER 13, 1985

TRANS-01 MANUAL REACTOR TRIP
TRANS-02 TRIP OF ALL MAIN FEEDPUMPS
TRANS-03 CLOSURE OF ALL MSIV'S
TRANS-04 TRIP OF ALL REACTOR COOLANT PUMPS
TRANS-05 TRIP OF REACTOR COOLANT PUMP #23
TRANS-06 MAIN TURBINE TRIP W/O REACTOR TRIP
TRANS-07 MAXIMUM POWER RAMP 100%-75%-100%
TRANS-08 MAXIMUM SIZE LOCA WITH BLACKOUT
TRANS-09 MAXIMUM SIZE MAIN STEAMLINE RUPTURE
TRANS-10 SLOW RCS DEPRESSURIZATION TO SATURATION
TRANS-11 LOAD REJECTION

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST SCHEDULE

YEAR	TEST NUMBER	TITLE
1994	CC06	SEAL WATER HX TUBE LEAK
1994	CS03	REFUELING WATER STORAGE TANK LEAK
1994	CV09	LETDOWN TEMPERATURE CONTROL FAILURE
1994	CV26	REACTOR COOLANT PUMP #1 SEAL FAILURE
1994	CW02	CW PUMP DISCHARGE VALVE FAILURE
1994	ED03	LOSS OF RESERVE AUXILIARY TRANSFORMER
1994	ED07	LOSS OF 480 VAC BUS
1994	ED16	AUXILIARIES AUTO BUS TRANSFER FAILURE
1994	ED19	ELECTRICAL GRID LOAD REJECTION
1994	ED20	ANN PANEL POWER SUPPLY FAILURE
1994	ED24	LOSS OF 250 VDC TRAIN "N" BATTERY
1994	EG03	MG AUTO VOLTAGE REG FAILURE TO MANUAL
1994	EG11	DIESEL GENERATOR FAILURE TO TRIP
1994	FP05	CONTROL ROOM CABLE VAULT FIRE
1994	FW05	MAIN FEEDPUMP TURBINE TRIP
1994	FW30	LP HTR #3 LVL CONTROL VALVE FAILURE
1994	FW42	CONDENSATE STORAGE TANK LEAK
1994	FW56	FEED PUMP STEAM SUPPLY CONT FAILURE
1994	MS03	MAIN STM LINE BREAK OUTSIDE CONT
1994	MS12	MSR DRAIN TK ALT DRAIN LVL CONT FAIL
1994	NI06	INTERMEDIATE RANGE MONITOR FAILURE
1994	NI10	POWER RANGE CHANNEL FAILURE
1994	RC03	RCS LEAK
1994	RC07	REACTOR COOLANT PUMP LOCKED ROTOR
1994	RC17	PRESSURIZER PORV FAILURE
1994	RD08	IN-HOLD-OUT SWITCH FAILURE
1994	RD12	FAILURE OF CONTROL RODS TO MOVE
1994	RD16	IRPI FAILURE
1994	RH15	SI ACCUMULATOR N2 PRESSURE LOSS
1994	RP03	FAILURE OF REACTOR TRIP BREAKER
1994	RP12	SPURIOUS ACTUATION OF SI
1994	RP20	TRAIN "B" K600 RELAY FAILURES
1994	RX08	PZR SPRAY VALVE AUTO CONTROL FAILURE
1994	RX16	STEAM DUMP "PRES CONT" ERRATIC OPS
1994	RX24	FW CONTROL VALVE CONTROLLER FAILURE
1994	RX28	LOSS OF 480V MCC
1994	SW01	NON ESSENTIAL SERVICE WATER PUMP TRIP
1994	SW05	ESW PIPING RUPTURE
1994	TC02	MAIN TURBINE FAILURE TO TRIP
1994	TU03	MAIN TURBINE HIGH VIBRATION
1995	CC03	COMPONENT COOLING WATER RUPTURE
1995	CC07	COMPONENT COOLING HX TUBE RUPTURE
1995	CH02	CONTAIN. PRESSURE TRANSMITTER FAILURE
1995	CS04	RWST LEVEL TRANSMITTER FAILURE
1995	CV05	LETDOWN HEAT EXCHANGER TUBE LEAK
1995	CV10	NORMAL CHG LINE LEAK INSIDE CONTAIN
1995	CV14	CHARGING PUMP SUCTION LINE LEAKAGE
1995	CV20	INADVERTENT BORATION
1995	CV27	REACTOR COOLANT PUMP #2 SEAL FAILURE
1995	CV32	FW FLOW TRANSMITTER (QFC-422) FAILURE
1995	CW03	TRAVELING WATER SCREEN FOULING
1995	ED04	LOSS OF EP SUPPLY TRANS TR-12-EP
1995	ED05	LOSS OF 4160 VAC BUS
1995	ED14	LOSS OF 250 VDC BATTERY CHARGER

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST SCHEDULE

YEAR	TEST NUMBER	TITLE
1995	ED18	GRID VOLTAGE OSCILLATION
1995	ED21	4KV/600V AUX TRANSFORMER LOSS
1995	EG04	MG AUTO VOLTAGE REGULATOR FAILURE
1995	EG08	DG SPEED GOVERNOR FAILURE
1995	EG12	DG OUTPUT BREAKER FAILURE TO AUTO CLS
1995	FP01	FIRE PROTECTION SYSTEM RUPTURE
1995	FW01	MAIN FEEDWATER RUPTURE AT SG INLET
1995	FW06	MFP TURBINE SHEARED SHAFT (UNRECOV)
1995	FW15	FEEDWATER CONTROL VALVE FAILURE
1995	FW19	HP HEATER #6 TUBE RUPTURE
1995	FW23	HP HEATER #5 TUBE RUPTURE
1995	FW27	LP HTR #4 LVL CONTROL VALVE FAILURE
1995	FW31	LP HEATER #3 TUBE RUPTURE
1995	FW35	COND BOOSTER PP DISC PIPING RUPTURE
1995	FW39	CONDENSER TUBE LEAK
1995	FW43	HEATER DRAIN PUMP TRIP
1995	FW47	AUX FEEDPUMP SUCTION LINE LEAKAGE
1995	FW51	TDAPP TRIP & THROTTLE VALVE FAILURE
1995	IA01	PLANT AIR COMPRESSOR TRIP
1995	IA05	CONT AIR SYS RUPTURE IN CONTAINMENT
1995	MS04	MS LINE BREAK DOWNSTREAM SG STOP VLVS
1995	MS09	MSR TUBE RUPTURE
1995	MS13	MSR DRAIN TK ALT LVL CONT VALVE FAIL
1995	MS18	STEAM DUMP CONTROL VALVE FAILURE
1995	NI03	INCORRECT SR CHANNEL RESPONSE
1995	NI07	IR IMPROPER COMPENSATION
1995	NI11	PR CHANNEL OUTPUT OSCILLATION
1995	NI15	POWER RANGE CHANNEL BLOWN FUSE
1995	RC04	PRESSURIZER SURGE LINE LEAK
1995	RC08	REACTOR COOLANT PUMP SHAFT BREAK
1995	RC14	PZR HIGH GAS CONCENTRATION IN VFR SP
1995	RC19	PRESSURIZER SAFETY VALVE FAILURE
1995	RC25	SG BD LINE LK DOWNSTREAM CONT ISOL
1995	RC29	S/G BLOWDOWN LEAK UPSTREAM OF CIV
1995	RD01	DROPPED CONTROL ROD
1995	RD05	EJECT OF RD WITH RUPT MECH HOUSING
1995	RD09	UNCONT ROD MOTION DEMAND (AUTOMATIC)
1995	RD13	ROD GROUP FAILURE TO MOVE
1995	RD17	ROD GROUP STEP COUNTER FAILURE
1995	RH03	RHR HX BYPASS FLOW CONTROL VALVE FAIL
1995	RH07	RHR NORMAL CD SUC LINE LK INSIDE CONT
1995	RH12	SI LOOP CHECK VALVE LEAKAGE
1995	RM01	AREA RADIATION MONITOR FAILURE
1995	RP05	REACTOR COOLANT FLOW TRANS FAILURE
1995	RP09	FAILURE OF FW ISOLATION TRIP TO OCCUR
1995	RP13	FAILURE OF CI PHASE A TO AUTO ACTUATE
1995	RP15	SPURIOUS ACTUATION OF CI PHASE A
1995	RP17	FAILURE OF CI PHASE B TO MANUAL ACT
1995	RX01	RCS HOT LEG PRESSURE TRANS FAILURE
1995	RX05	PZR LVL TRANS FAILURE (PROT CHANNEL)
1995	RX09	PZR PRES MASTER CONTROLLER FAILURE
1995	RX13	STEAM DUMP "TAVG" CONTROLLER FAILURE
1995	RX17	SG PRESSURE TRANSMITTER FAILURE
1995	RX21	SG FEED FLOW TRANSMITTER FAILURE

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST SCHEDULE

YEAR	TEST NUMBER	TITLE
1995	RX25	FEEDWATER CONTROL VALVE OSCILLATION
1995	SI01	SAFETY INJECTION PUMP TRIP
1995	SW02	NESW PIPING RUPTURE IN TURB BLDG
1995	SW06	FP TURB OIL COOLING CONTROLLER FAILURE
1995	TC03	MAIN TURBINE AUTO TRIP FAILURE
1995	TC07	MAIN TURBINE INTERCEPT VALVE FAILURE
1995	TC12	MAIN TURBINE SPEED SIGNAL FAILURE
1995	TP03	MG STATOR COOLING SYSTEM RUPTURE
1995	TU01	AUXILIARY LUBE OIL PUMP TRIP
1995	TU05	MAIN TURBINE BEARING FAILURE
1996	CC04	MISC CCW HDR RUPTURE INSIDE CONTAIN.
1996	CC08	CCW LEAKAGE INTO RCP BRNG OIL RES.
1996	CS01	CONTAINMENT SPRAY PUMP TRIP
1996	CV01	LETDOWN LINE RUPTURE INSIDE CONTAIN.
1996	CV06	QRV-301 FAILURE
1996	CV11	NORMAL CHG LINE LEAK OUTSIDE CONTAIN
1996	CV15	VCT LEVEL CONTROL VALVE FAILURE
1996	CV21	INADVERTENT DILUTION
1996	CV28	REACTOR COOLANT PUMP #3 SEAL FAILURE
1996	CV33	BA FLOW CONTROLLER (QFC-421) FAILURE
1996	ED01	LOSS OF 345KV BUS NO. 1
1996	ED08	LOSS OF 600V MCC
1996	ED10	LOSS OF 120 VAC CONTROL ROOM POWER
1996	ED17	LOSS OF PLANT LIGHTING
1996	ED22	LOSS OF SWITCHGEAR CONT POWER TRAIN B
1996	ED26	LOSS OF 765KV DUMONT LINE
1996	EG05	MG OUTPUT BREAKER FAILURE TO TRIP
1996	EG09	DG VOLTAGE CONTROL FAILURE
1996	EG13	DG OUTPUT BREAKER FAILURE TO CLOSE
1996	FP02	INADV ACT OF CHARCOAL FILT FIRE PROT.
1996	FW02	MFV RUPTURE BEFORE SG CHECK VALVE
1996	FW07	MAIN FEEDPUMP TURBINE BEARING FAILURE
1996	FW16	HP HTR #6 LVL CONT TRANSMITTER FAIL
1996	FW20	HP HTR #5 LVL CONT TRANSMITTER FAIL
1996	FW24	HP HEATER #5 STEAM INLET RUPTURE
1996	FW28	LP HEATER #4 TUBE RUPTURE
1996	FW32	LP HEATER #3 STEAM INLET RUPTURE
1996	FW36	COND BOOSTER PP RECIRC VALVE FAILURE
1996	FW40	HOTWELL LEVEL CONTROLLER FAILURE
1996	FW44	HEATER DRAIN PUMP BEARING FAILURE
1996	FW48	AUX FEEDPUMP AUTO START FAILURE
1996	FW52	STEAM BOUND AFW PUMP
1996	IA02	PLANT AIR SYSTEM RUPTURE
1996	IA04	CONT AIR SYS RUPT IN TURBINE BUILDING
1996	MS01	MS LINE BREAK AT SG EXIT
1996	MS05	MAIN STEAM POWER RELIEF VALVE LEAK
1996	MS10	MSR COIL DRAIN TANK LVL CONT FAILURE
1996	MS14	MSR STEAM SUPPLY VALVE FAILURE
1996	MS21	AUX SIM 150 # HDR CONT VALVE FAILURE
1996	NI04	SR ENERGIZATION AT POWER (P10 FAILURE)
1996	NI08	FR CHANNEL UPPER DETECTOR FAILURE
1996	NI12	AUDIO COUNT RATE CHANNEL FAILURE
1996	RC01	RCS COLD LEG LOOP RUPTURE
1996	RC05	REACTOR VESSEL HEAD FLANGE LEAK

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST SCHEDULE

YEAR	TEST NUMBER	TITLE
1986	RC09	REACTOR COOLANT PUMP TRIP
1986	RC15	PRESSURIZER SPRAY VALVE FAILURE
1986	RC21	FRT RUPTURE DISC FAILURE
1986	RC26	FAILED FUEL ELEMENT
1986	RD02	BROKEN CONTROL ROD
1986	RD06	UNCONT ROD BANK CONTINUOUS WITHDRAWAL
1986	RD10	CR MOVE OPPOSITE TO DEMAND SIGNAL
1986	RD14	IMPROPER BANK OVERLAP
1986	RD18	ROD CONTROL MG SET TRIP
1986	RH04	RHR HX FLOW CONTROL VALVE FAILURE
1986	RH08	RWST SUPPLY LINE TO RHR PUMP RUPTURE
1986	RH13	SI ACC TANK CHECK VALVE LEAKAGE
1986	RM02	PROCESS RADIATION MONITOR FAILURE
1986	RP06	SPURIOUS STEAM LINE ISOLATION
1986	RP10	FAILURE OF SI TO ACTUATE-AUTOMATIC
1986	RP14	FAILURE OF CI PHASE A TO MANUAL ACT
1986	RP18	SPURIOUS ACTUATION OF CI PHASE B
1986	RX02	RCS HOT LEG TEMP TRANS FAILURE (NR)
1986	RX06	PZR CAL LEVEL TRANSMITTER FAILURE
1986	RX10	PZR WATER LEVEL CONT OSCILLATION
1986	RX14	STEAM DUMP "PRES" CONTROLLER FAILURE
1986	RX18	MS TURB BYPASS HDR PRESS TRANS FAILURE
1986	RX22	SG PROGRAMMED LEVEL SIGNAL FAILURE
1986	RX26	FP TURBINE SPEED CONTROLLER FAILURE
1986	SI02	SAFETY INJECTION PUMP SHEARED SHAFT
1986	SW03	NESW RUPT ON LWR CONT VENT CLR SUP
1986	SW07	MT OIL TEMPERATURE CONTROLLER FAILURE
1986	TC04	MAIN TURBINE STOP VALVE FAILURE
1986	TC09	MAIN GENERATOR LOAD LIMITER FAILURE
1986	TC13	TURBINE RUNBACK FAILURE
1986	TP05	STATOR COOLING WTR SYS HIGH COND
1986	TU06	TURBINE BLADE EJECTION
1987	CC01	COMPONENT COOLING WATER PUMP TRIP
1987	CC05	MISC CCW HDR RUPTURE IN AUX BUILDING
1987	CC09	CCW LEAK ON RHR PUMP SUPPLY LINE
1987	CC10	CCW LEAKAGE INTO RCP L.BRNG OIL RESERV.
1987	CS02	CONTAIN. SPRAY PUMP SUCTION BLOCKAGE
1987	CV02	LETDOWN LINE RUPTURE OUTSIDE CONTAIN.
1987	CV08	LETDOWN LINE RELIEF VLV SV-51 LEAKAGE
1987	CV12	CCP FLOW CONTROL VALVE FAILURE
1987	CV16	VCT LEVEL TRANSMITTER FAILURE
1987	CV25	RCP THERMAL BARRIER HX RUPTURE
1987	CV30	REDUCED CCP CAPACITY
1987	CW01	CIRCULATING WATER PUMP TRIP
1987	ED12	LOSS OF 250 VDC POWER (TRAIN A)
1987	ED13	LOSS OF 250 VDC POWER (TRAIN B)
1987	ED23	LOSS OF SWITCHGEAR CONT POWER TRAIN A
1987	ED25	LOSS OF 765/345KV TRANSFORMER BANK #4
1987	EG01	MAIN GENERATOR TRIP
1987	EG06	DIESEL GENERATOR TRIP
1987	EG10	DIESEL GENERATOR FAILURE TO START
1987	EG14	DG RUNNING RELAY FAILURE
1987	FP03	DIESEL GENERATOR ROOM CO2 ACTUATION
1987	FW03	MFV RUPT BETWEEN FEEDFLOW ELMT & FRV

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST SCHEDULE

YEAR	TEST NUMBER	TITLE
1997	FW12	FEEDPUMP TURBINE LUBE OIL SYSTEM LEAK
1997	FW17	HP HTR #6 LVL CONTROLLER AUTO FAILURE
1997	FW21	HP HTR #5 LVL CONTROLLER AUTO FAILURE
1997	FW25	HOTWELL PUMP TRIP
1997	FW29	LP HTR #3 LVL CONT TRANSMITTER FAIL
1997	FW33	LP HEATER BYPASS VALVE FAILURE
1997	FW37	HOTWELL PUMP DISCHARGE PIPING RUPTURE
1997	FW41	HW LEVEL CONTROL TRANSMITTER FAILURE
1997	FW45	HEATER DRAIN PUMP ELO VLV FAILS OPEN
1997	IA03	CONTROL AIR COMPRESSOR TRIP
1997	MS02	MAIN STEAM LINE BREAK AT SG EXIT
1997	MS06	STEAM GENERATOR SAFETY VALVE LEAK
1997	MS11	MSR COIL DRAIN TANK LVL CONT VLV FAIL
1997	MS16	STEAM SEAL CONTROLLER FAILURE
1997	NI01	SOURCE RANGE MONITOR FAILURE
1997	NI05	SOURCE RANGE CHANNEL SPIKES
1997	NI09	FR CHANNEL LOWER DETECTOR FAILURE
1997	NI13	SOURCE RANGE INSTRUMENT BLOWN FUSE
1997	RC02	RCS HOT LEG LOOP LEAK
1997	RC06	RCS EMERGENCY VENT LEAKAGE
1997	RC10	RCS COLD LEG LEAK
1997	RC11	REACTOR COOLANT PUMP HIGH VIBRATION
1997	RC12	RCP LOWER BEARING OIL RESERVOIR LEAK
1997	RC16	PRESSURIZER STEAM SPACE MANWAY LEAK
1997	RC23	STEAM GENERATOR TUBE RUPTURE
1997	RC27	RTD BYPASS MANIFOLD FLOW DEGRADATION
1997	RD03	STUCK CONTROL ROD (TRIPPABLE)
1997	RD07	UNCONT ROD BANK CONTINUOUS INSERTION
1997	RD11	AUTO CONTROL ROD SPEED FAILURE
1997	RD15	IRPI POWER LOSS
1997	RD19	IMPROPER ROD WORTH
1997	RH01	RHR PUMP TRIP
1997	RH05	RHR HEAT EXCHANGER TUBE LEAK
1997	RH09	RHR PUMP SUCTION PIPE RUPTURE
1997	RH14	SI ACCUMULATOR TANK LEVEL LOSS
1997	RM03	EBERLINE AREA RADIATION MONITOR FAILURES
1997	RP01	REACTOR TRIP ACB AUTO TRIP FAILURE
1997	RP07	FAILURE OF STEAM LINE ISO TO ACTIVATE
1997	RP11	FAILURE OF SI TO ACTUATE-MANUALLY
1997	RP19	TRAIN "A" K600 RELAY FAILURES
1997	RP21	FAILURE OF FWI TRIP TO OCCUR
1997	RX03	RCS COLD LEG TEMP TRANS FAILURE (NR)
1997	RX07	REDUCED PRESSURIZER HEATER CAPACITY
1997	RX11	SG RELIEF VALVE CONTROLLER FAILURE
1997	RX19	TURBINE IMPULSE TRANSMITTER FAILURE
1997	RX23	SG LEVEL TRANSMITTER FAILURE
1997	RX29	FPC-250 TRANSMITTER FAILURE
1997	SI03	HIGH HEAD SI LINE RUPTURE
1997	SW04	ESSENTIAL SERVICE WATER PUMP TRIP
1997	TC01	MAIN TURBINE TRIP
1997	TC05	MAIN TURBINE CONTROL VALVE FAILURE
1997	TC10	MAIN GEN OPERATING DEVICE FAILURE
1997	TP01	TURBINE AUX COOLING PUMP TRIP
1997	WD01	RELEASE OF RADIOACTIVE GAS FROM GDT

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST SCHEDULE

YEAR	TEST NUMBER	TITLE
1998	CC02	CCW PUMP FAILURE TO AUTO START
1998	CC06	SEAL WATER HX TUBE LEAK
1998	CH01	CONTAIN. PRESS. RELIEF VLV FAILURE
1998	CS03	REFUELING WATER STORAGE TANK LEAK
1998	CV04	LETDOWN LINE ORIFICE ISO. VLV FAILURE
1998	CV09	LETDOWN TEMPERATURE CONTROL FAILURE
1998	CV13	CHARGING PUMP TRIP
1998	CV17	VOLUME CONTROL TANK LEAKAGE
1998	CV26	REACTOR COOLANT PUMP #1 SEAL FAILURE
1998	CV31	BACKPRESSURE CONT VLV FAILURE-QRV-200
1998	CW02	CW PUMP DISCHARGE VALVE FAILURE
1998	ED02	LOSS OF AUXILIARY TRANSFORMER
1998	ED03	LOSS OF RESERVE AUXILIARY TRANSFORMER
1998	ED06	LOSS OF 600 VAC BUS
1998	ED07	LOSS OF 480 VAC BUS
1998	ED11	LOSS OF 250 VDC BUS
1998	ED15	LOSS OF VITAL INST BUS STATIC SWITCH
1998	ED16	AUXILIARIES AUTO BUS TRANSFER FAILURE
1998	ED19	ELECTRICAL GRID LOAD REJECTION
1998	ED20	ANN PANEL POWER SUPPLY FAILURE
1998	ED24	LOSS OF 250 VDC TRAIN "N" BATTERY
1998	EG03	MG AUTO VOLTAGE REG FAILURE TO MANUAL
1998	EG07	DG SPEED CONTROL FAILURE
1998	EG11	DIESEL GENERATOR FAILURE TO TRIP
1998	EG15	MG SEAL OIL UNIT PIPING RUPTURE
1998	FP05	CONTROL ROOM CABLE VAULT FIRE
1998	FW05	MAIN FEEDPUMP TURBINE TRIP
1998	FW18	HP HTR #6 LVL CONTROL VALVE FAILURE
1998	FW22	HP HTR #5 LVL CONTROL VALVE FAILURE
1998	FW26	LP HTR #4 LVL CONT TRANSMITTER FAIL
1998	FW30	LP HTR #3 LVL CONTROL VALVE FAILURE
1998	FW34	CONDENSATE BOOSTER PUMP TRIP
1998	FW38	LOSS OF CONDENSER VACUUM
1998	FW42	CONDENSATE STORAGE TANK LEAK
1998	FW46	AUX FEEDPUMP TRIP
1998	FW50	TDAFW PUMP SPEED CONTROLLER FAILURE
1998	FW54	FDWTR RUPT OUTSIDE CONTAINMENT
1998	FW56	FEED PUMP STEAM SUPPLY CONT FAILURE
1998	MS03	MAIN STM LINE BREAK OUTSIDE CONT
1998	MS08	SG STOP VALVE DRIFTS SHUT
1998	MS12	MSR DRAIN TK ALT DRAIN LVL CONT FAIL
1998	MS17	STEAM SEAL CONTROLLER OSCILLATION
1998	NI02	SOURCE RANGE HV FAILURE TO DEENERGIZE
1998	NI06	INTERMEDIATE RANGE MONITOR FAILURE
1998	NI10	POWER RANGE CHANNEL FAILURE
1998	NI14	INTERMEDIATE RANGE CHANNEL BLOWN FUSE
1998	RC03	RCS LEAK
1998	RC07	REACTOR COOLANT PUMP LOCKED ROTOR
1998	RC13	RCP UPPER BEARING OIL RESERVOIR LEAK
1998	RC17	PRESSURIZER PORV FAILURE
1998	RC24	STEAM GENERATOR TUBE LEAK
1998	RC28	PRESSURIZER INSTRUMENT LINE LEAKAGE
1998	RD04	STUCK CONTROL ROD (UNTRIPPABLE)
1998	RD08	IN-HOLD-OUT SWITCH FAILURE

COOK NUCLEAR PLANT SIMULATOR MALFUNCTION TEST SCHEDULE

YEAR	TEST NUMBER	TITLE
1998	RD12	FAILURE OF CONTROL RODS TO MOVE
1998	RD16	IRPI FAILURE
1998	RH02	RHR PUMP SEAL FAILURE
1998	RH06	RHR INJ HDR RELIEF VALVE FAIL (SV-104)
1998	RH11	RHR RET FLOW TRANS FAILURE (IFI-335)
1998	RH15	SI ACCUMULATOR N2 PRESSURE LOSS
1998	RP03	FAILURE OF REACTOR TRIP BREAKER
1998	RP08	SPURIOUS FEEDWATER ISOLATION TRIP
1998	RP12	SPURIOUS ACTUATION OF SI
1998	RP16	FAILURE OF CI PHASE B TO AUTO ACTUATE
1998	RP20	TRAIN "B" K600 RELAY FAILURES
1998	RX04	PRESSURIZER PRESSURE TRANS FAILURE
1998	RX08	PZR SPRAY VALVE AUTO CONTROL FAILURE
1998	RX12	MS RELIEF VLV CONTROLLER OSCILLATION
1998	RX16	STEAM DUMP "PRES CONT" ERRATIC OPS
1998	RX20	SG STEAM FLOW TRANSMITTER FAILURE
1998	RX24	FW CONTROL VALVE CONTROLLER FAILURE
1998	RX27	FEED PUMP DP CONTROLLER FAILURE
1998	RX28	LOSS OF 480V MCC
1998	SW01	NON ESSENTIAL SERVICE WATER PUMP TRIP
1998	SW05	ESW PIPING RUPTURE
1998	TC02	MAIN TURBINE FAILURE TO TRIP
1998	TC06	MAIN TURBINE ERRATIC CONTROL VALVE
1998	TC11	AUTO LOAD SET OSCILLATION
1998	TP02	TURBINE AUX COOLING PIPING RUPTURE
1998	TU03	MAIN TURBINE HIGH VIBRATION

