

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-423/84-17

Docket No. 50-423

License No. CPPR-113 Priority -- Category B

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06101

Facility Name: Millstone Nuclear Power Station, Unit 3

Inspection At: Waterford, Connecticut

Inspection Conducted: September 17-21, 1984

Inspectors: H. H. Nicholas
H. H. Nicholas, Lead Reactor Engineer

10/25/84
date

Approved by: L. H. Bettenhausen
L. H. Bettenhausen, Chief,
Test Programs Section

10/25/84
date

Inspection Summary: Inspection on September 17-21, 1984 (NRC Report No. 50-423/84-17)

Areas Inspected: Routine, unannounced inspection by one region-based inspector of the preoperational test program including preoperational test program requirements, control of documents, test procedures, engineering drawings, manuals, design changes and modifications, jumpers and bypasses; plant maintenance, preventive maintenance and maintenance records; test procedure reviews and test results evaluation; and tours of the facility. The inspection involved 37 hours on site by one NRC region-based inspector.

Results: No items of noncompliance were identified.

DETAILS

1. Persons Contacted

Northeast Nuclear Energy Company (NNECO)

J. Harris, Startup Supervisor
M. Hess, Assistant Startup Supervisor
*T. Lyons, Startup Engineer
*D. Miller, Manager Startup Services

Northeast Utilities Service Company (NUSCO)

*K. Gray, Fr., Staff Assistant
*R. Lefebvre, Project Staff Engineer
*P. Quinlan, Project Engineer

Stone and Webster Engineering Corporation (SWEC)

*A. Dasenbrock Resident Manager
*R. Hagerman, Chief, Inspection Supervisor
*R. Scannell, Program Administrator, QA
*E. Sprouse, Superintendent of Construction
*G. Turner, Superintendent FQC
*W. Vos, Senior Engineer, FQC

U. S. Nuclear Regulatory Commission

*L. Narrow, Lead Reactor Engineer
*T. Rebelowski, Senior Resident Inspector

*Denotes those present at exit interview on September 21, 1984.

2. Preoperational Test Program

References

MNPS Unit 3 Final Safety Analysis Report
MNPS Unit 3 Project Test Program Manual
MNPS Unit 3 Project Procedures Manual
MNPS Unit 3 Preservice Unit Instruction Manual
NNECO Administrative Control Manual
NNECO Unit 3 Startup Manual
NNECO Unit 3 Flushing Reference Manual
NUSCO Quality Assurance Branch Procedures
NUSCO Quality Assurance Program Topical Report
SWEC Quality Assurance and Control Manual
SWEC Quality Standards
SWEC Quality Assurance Directives
SWEC Test Program Manual

SWEC Quality Assurance Inspection System Handbook
WEC NSSS Startup Manual
RG 1.68 Initial Test Programs for Water Cooled Nuclear Power Plants
NUREG 1031 Safety Evaluation Report NMPS Unit 3

2.1 Test Program Requirements

Scope

Test program requirements were discussed with the licensee's representatives. Areas explored and reviewed during this inspection included control of documents such as test procedures, engineering drawings and vendors manuals; design changes and modifications such as design change control, temporary modifications, jumpers and bypasses; and plant maintenance and preventive maintenance activities during pre-operational test program such as the plant maintenance program, preventive maintenance program and maintenance records.

Discussion

- For test procedures, engineering drawings and vendors manuals, formal administrative measures have been established for the review, approval, issuance, revision, control, modification, and changes of these documents;
- For design change control, temporary modifications, jumpers and bypasses, a formal method has been established for initiating, reviewing and approving requests for design changes and modifications, and written administrative controls have been established for controlling temporary modifications, jumpers and bypasses, including controls requiring formal logs to be maintained; and,
- Administrative procedures exist including controls and methods for initiating, approving, reviewing, and scheduling of plant and preventive maintenance, controls for equipment protection, and the establishment of administrative controls for preparation and retention of maintenance records.

Findings

No discrepancies were noted in the areas examined. These areas will be reviewed in subsequent inspections for implementation. The three remaining areas of equipment protection and cleanliness; test and measurement equipment; and, startup personnel training will be reviewed on subsequent inspections.

2.2 Test Procedure Review and Verification

Scope

The approved integrated test procedures listed in Attachment A were reviewed for technical and administrative adequacy and for verification that adequate testing is planned to satisfy regulatory guidance and licensee commitments.

The procedures were examined for management review and approval, procedure format, test objectives clearly stated, prerequisites, environmental conditions, acceptance criteria, source of acceptance criteria, references, initial conditions, test objectives are met, performance documentation and verification, detailed instructions for performance of test, restoration of system to normal after test, identification of personnel conducting test and evaluating test data, independent verification of critical steps or parameters, and, quality assurance and quality control interface and involvement.

Findings

As a result of the review of these test procedures, the inspector ascertained that the procedures are consistent with regulatory requirements, guidance and licensee commitments. No discrepancies or unacceptable conditions were identified. The inspector had no further questions on these procedures.

2.3 Test Results Evaluation

Scope

The completed test procedures listed in Attachment B were reviewed to verify that adequate testing was accomplished in order to satisfy regulatory guidance and licensee commitments and to ascertain whether uniform criteria were being applied for evaluating completed pre-operational tests in order to assure their technical and administrative adequacy.

The inspector reviewed the test results and verified the licensee's evaluation of test results by review of test changes, test exceptions, test deficiencies, "As-Run" copy of test procedures, acceptance criteria, performance verification, recording conduct of tests, QC inspection records, restoration of systems to normal after tests, independent verification of critical steps or parameters, identification of personnel conducting and evaluating test data, and verification that the test results have been approved.

Findings

No discrepancies or unacceptable conditions were noted in the review of these procedures.

3. Plant Tours

The inspector made several tours of the facility including the containment structure, turbine building, auxiliary building, service building, control building, engineered safety features building, emergency diesel generator building, circulating water and service water pump house and hydrogen recombiner building.

Particular attention in observation was given to the control room, switch-gear area, cable separation area, battery rooms, diesel generating rooms and the fuel oil storage tank pits. The inspector observed work in progress; housekeeping; cleanliness controls; storage and protection of components, piping and systems; and the interface between systems, structures, and areas.

No items of noncompliance were identified and no unacceptable conditions were noted.

4. Exit Interview

At the conclusion of the site inspection on September 21, 1984, an exit meeting was conducted with the licensee's senior site representatives (denoted in Paragraph 1). The findings were identified and previous inspection items were discussed. At no time during this inspection was written material provided to the licensee by the inspector.

ATTACHMENT A

TEST PROCEDURE REVIEW

- (1) 3-INT-2001 Revision 0, Approved July 14, 1983 Computer Programs Test
- (2) 3-INT-2A02 Revision 0, Approved August 31, 1984 Reactor and Engineered Safety Systems Protection Monitoring
- (3) 3-INT-2A03 Revision 0, Approved January 27, 1984 Low Pressure Turbines Steam Inlet Delta T Alarm
- (4) 3-INT-2A04 Revision 0, Approved February 17, 1984 Pump Start Alarm
- (5) 3-INT-2A05 Revision 0, Approved August 31, 1984, Boron Reduction Alarms
- (6) 3-INT-2A08 Revision 0, Approved January 27, 1984 Condenser Vacuum Differential Alarm
- (7) 3-INT-2C01 Revision 0, Approved January 6, 1984 Reactor Coolant System Display
- (8) 3-INT-2D01 Revision 0, Approved August 26, 1983 Analog Output Stimulator
- (9) 3-INT-2D02 Revision 0, Approved August 26, 1983 Digital Output Stimulator
- (10) 3-INT-2D03 Revision 0, Approved August 26, 1983 Online Printer Test
- (12) 3-INT-2D05 Revision 0, Approved August 31, 1984 Point Substitutions
- (13) 3-INT-2J04 Revision 0, Approved August 31, 1984 Boration and Dilution
- (15) 3-INT-2J09 Revision 0, August 31, 1984 Reactor Engineer NSSS Data Sheet
- (16) 3-INT-2J11 Revision 0, Approved February 17, 1984 Diesel Generator Watt-Hour Tabulation
- (17) 3-INT-2J12 Revision 0, Approved June 29, 1984 Reactor Plant Aerated Drains Water Chemistry
- (18) 3-ONT-2J15 Revision 0, Approved August 31, 1984 Containment Pressure and Relative Humidity
- (19) 3-INT-2R05 Revision 0, Approved August 31, 1984 Tilting Factors
- (20) 3-INT-2S02 Revision 1, Approved August 31, 1984 Flow Corrections
- (21) 3-INT-2T01 Revision 0, Approved February 17, 1984 Diesel Generator Surveillance
- (22) 3-INT-2T06 Revision 0, Approved July 14, 1983 Computer I/O Testing Status

ATTACHMENT B

TEST RESULTS EVALUATION

- (1) T3340-AA Revision 0, Approved October 6, 1983
Domestic Water System
Test Results Approved August 15, 1984
- (2) T3340-BA Revision 0, Approved May 4, 1983
Water Treating System
Test Results Approved June 21, 1984
- (3) T3344-AA001 Revision 0, Approved August 9, 1983
480V Load Center 32A
Test Results Approved March 1, 1984
- (4) T3344-AA003 Revision 0, Approved August 9, 1983
480V Load Center 32C
Test Results Approved March 20, 1984
- (5) T3344-AA004 Revision 0, Approved August 9, 1983
480V Load Center 32D
Test Results Approved March 20, 1984
- (6) T3344-AA005 Revision 0, Approved August 9, 1983
480V Load Center 32E
Test Results Approved March 1, 1984
- (7) T3344-AA006 Revision 0, Approved August 9, 1983
480V Load Center 32F
Test Results Approved March 1, 1984
- (8) T3344-AA007 Revision 0, Approved August 9, 1983
480V Load Center 32G
Test Results Approved March 1, 1984
- (9) T3344-AA008 Revision 0, Approved August 9, 1983
480V Load Center 32J
Test Results Approved March 1, 1984
- (11) T3344-AA010 Revision 0, Approved August 9, 1983
480V Load Center 32K
Test Results Approved March 1, 1984
- (12) T3344-AA011 Revision 0, Approved August 9, 1983
480V Load Center 32L
Test Results Approved March 1, 1984

- (13) T3344-AA012 Revision 0, Approved August 9, 1983
480V Load Center 32M
Test Results Approved March 20, 1984
- (14) T3344-AA014 Revision 0, Approved August 9, 1983
480V Load Center 32P
Test Results Approved March 1, 1984
- (15) T3344-AA015 Revision 0, Approved August 9, 1983
480V Load Center 32Q
Test Results Approved March 29, 1984
- (16) T3349-A002 Revision 0, Approved July 29, 1983
Computer Power Supply
Test Results Approved August 8, 1984
- (17) T3344-BA013 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2J
Test Results Approved July 25, 1984
- (18) T3344-BA014 Revision 0, Approved August 26, 1983
480V MCC Bus 32-4J
Test Results Approved March 1, 1984
- (19) T3344-BA015 Revision 0, Approved August 26, 1983
480V MCC Bus 32-3E
Test Results Approved July 25, 1984
- (20) T3344-BA016 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1D
Test Results Approved March 28, 1984
- (21) T3344-BA017 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1L
Test Results Approved June 14, 1984
- (22) T3344-BA018 Revision 0, Approved August 26, 1983
480V MCC Buss 32-2L
Test Results Approved June 14, 1984
- (23) T3344-BA007 Revision 0, Approved August 26, 1983
480V MCC Bus 32-3H
Test Results Approved June 14, 1984
- (24) T3344-BA008 Revision 0, Approved August 26, 1983
480V MCC Bus 32-5H
Test Results Approved July 25, 1984

- (25) T3344-BA009 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1F
Test Results Approved February 25, 1984
- (26) T3344-BA009 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2F
Test Results Approved September 5, 1984
- (27) T3344-BA011 Revision 0, Approved August 26, 1983
480V MCC Bus 32-4F
Test Results Approved March 1, 1984
- (28) T3344-BA012 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1J
Test Results Approved March 1, 1984
- (29) T3344-BA001 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1G
Test Results Approved August 25, 1984
- (30) T3344-BA002 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2G
Test Results Approved June 14, 1984
- (31) T3344-BA003 Revision 0, Approved August 26, 1983
480V MCC Bus 32-3G
Test Results Approved June 14, 1984
- (32) T3344-BA004 Revision 0, Approved August 26, 1983
480V MCC Bus 32-5G
Test Results Approved July 25, 1984
- (33) T3344-BA004 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1H
Test Results Approved July 25, 1984
- (34) T3344-BA006 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2H
Test Results Approved June 14, 1984
- (35) T3344-BA019 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1C
Test Results Approved July 25, 1984
- (36) T3344-BA020 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2C
Test Results Approved July 25, 1984

- (37) T3344-NS021 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1M
Test Results Approved July 25, 1984
- (38) T3344-BA022 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2M
Test Results Approved August 15, 1984
- (39) T3344-BA023 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1A
Test Results Approved March 28, 1984
- (40) T3344-BA024 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2A
Test Results Approved March 28, 1984
- (41) T3344-BA025 Revision 0, Approved August 26, 1983
480V MCC Bus 32-3A
Test Results Approved March 28, 1984
- (42) T3344-BA026 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1P
Test Results Approved June 14, 1984
- (43) T3344-BA027 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2P
Test/Results Approved March 28, 1984
- (44) T3344-BA028 Revision 0, Approved August 26, 1983
480V MCC Bus 32-3P
Test Results Approval March 28, 1984
- (45) T3344-BA029 Revision 0, Approved August 26, 1983
480V MCC Bus 32-1Q
Test Results Approved March 28, 1984
- (46) T3344-BA044 Revision 0, Approved August 26, 1983
480V MCC Bus 32-4G
Test Results Approved August 15, 1984
- (47) T3344-BA045 Revision 0, Approved August 26, 1983
480V MCC Bus 32-4H
Test Results Approved July 25, 1984
- (48) T3344-BA047 Revision 0, Approved August 26, 1983
480V MCC Bus 32-3D
Test Results Approved July 25, 1984

- (49) T3344-BA049 Revision 0, Approved August 26, 1983
480V MCC Bus 32-2Q
Test Results Approved June 14, 1984
- (50) T3343-P002 Revision 0, Approved November 17, 1983
4160V Switchgear Bus 34B
Test Results Approved January 30, 1984
- (51) T3343-P003 Revision 0, Approved November 17, 1983
4160V Switchgear Bus 34C
Test Results Approved January 30, 1984
- (52) T3343-P004 Revision 0, Approved November 17, 1983
4160V Switchgear Bus 34D
Test Results Approved January 30, 1984
- (53) T3343-P001 Revision 0, Approved November 16, 1983
4160V Switchgear Bus 34A
Test Results Approved January 30, 1984
- (54) T3344-AP016 Revision 0, Approved June 24, 1983
480V Load Center 32R
Test Results Approved March 20, 1984
- (55) T3344-AP018 Revision 0, Approved August 9, 1983
480V Load Center 32T
Test Results Approved March 20, 1984
- (56) T3344-AP019 Revision 0, Approved August 9, 1983
480V Load Center 32U
Test Results Approved April 6, 1984
- (57) T3344-AP021 Revision 0, Approved August 9, 1983
480V Load Center 32W
Test Results Approved April 6, 1984
- (58) T3344-BP030 Revision 0, Approved June 24, 1983
480V MCC Bus 32-1T
Test Results Approved July 31, 1984
- (59) T3344-BP031 Revision 0, Approved August 23, 1983
480V MCC Bus 32-2T
Test Results Approved July 31, 1984
- (60) T3344-BP032 Revision 0, Approved August 23, 1983
480V MCC Bus 32-3T
Test Results Approved July 31, 1984

- (61) T3344-BP033 Revision 0, Approved August 23, 1983
480V MCC Bus 32-4T
Test Results Approved April 6, 1984
- (62) T3344-BP034 Revision 0, Approved August 23, 1983
480V MCC Bus 32-5T
Test Results Approved April 6, 1984
- (63) T3344-BP03J Revision 0, Approved August 23, 1983
480V MCC Bus 32-1U
Test Results Approved July 31, 1984
- (64) T3344-BP036 Revision 0, Approved August 23, 1983
480V MCC Bus 32-2U
Test Results Approved July 31, 1984
- (65) T3344-BP037 Revision 0, Approved August 23, 1983
480V MCC Bus 32-3U
Test Results Approved July 31, 1984
- (66) T3344-BP038 Revision 0, Approved August 23, 1983
480V MCC Bus 32-4U
Test Results Approved July 31, 1984
- (67) T3344-BP039 Revision 0, Approved August 23, 1983
480V MCC Bus 32-5U
Test Results Approved July 31, 1984
- (68) T3344-BP040 Revision 0, Approved August 23, 1983
480V MCC Bus 32-1R
Test Results Approved July 31, 1984
- (69) T3344-BP041 Revision 0, Approved August 23, 1983
480V MCC Bus 32-2R
Test results Approved July 31, 1984
- (70) T3344-BP042 Revision 0, Approved August 23, 1983
480V MCC Bus 32-1W
Test Results Approved July 31, 1984
- (71) T3344-BP043 Revision 0, Approved August 23, 1983
480V MCC Bus 32-2W
Test Results Approved July 31, 1984