

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-423/84-13

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: August 20-24, 1984

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

9/11/84  
date

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

9/11/84  
date

Inspection Summary:

Inspection on August 20-24, 1984 (NRC Report No. 50-423/84-13)

Areas Inspected: Routine, unannounced inspection by a region-based inspector of the preoperational test program; schedule for completion and turnover of systems and subsystems; schedule of testing activities; test program organization and administration; preoperational and acceptance test procedure status including procedure reviews; and responsibilities and involvement of quality assurance and quality control. The inspection involved 38 hours on site by one NRC region-based inspector.

Results: No items of noncompliance were identified.

8411090504 841011  
PDR ADOCK 05000423  
Q PDR

## DETAILS

### 1.0 Persons Contacted

#### Northeast Nuclear Energy Company (NNECO)

J. Crockett, Superintendent Unit 3  
\*J. Harris, Startup Supervisor  
M. Hess, Assistant Startup Supervisor

#### Northeast Utilities Service Company (NUSCO)

\*D. Blumenthal, Quality Assurance Engineer  
\*K. Gray, Jr., Staff Assistant  
\*E. LaWare, Engineering Technologist  
R. Viviano, Assistant Project Engineer

#### Stone and Webster Engineering Corporation (SWEC)

G. Basilesco, Engineer  
J. Capozzoli, Jr., Supervisor of Construction Services  
A. Dasenbrock, Resident Manager  
\*R. Flodstrom, Assistant Superintendent of Construction  
\*S. Hunt, Engineering Assurance Program Manager  
\*R. Jensen, Assistant Superintendent of Engineering  
W. Matejek, Project Advisory Engineer  
\*W. Vos, Senior Engineer

#### United States Nuclear Regulatory Commission (USNRC)

\*D. Lapinski, Resident Inspector  
T. Rebelowski, Senior Resident Inspector

\*Denotes those present at exit interview on August 24, 1984.

### 2.0 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

## 2.1 Inspection Program Scope

The primary objective of this inspection was to thoroughly involve an NRC specialist inspector in the preoperational test program, covering the area of preoperational and acceptance testing.

### Discussion

The inspector conducted several interviews and held discussions with members of the startup group and other licensee representatives. Discussions included the test program, test personnel assignment and qualification, test procedures, test sequencing and schedules for testing, and quality assurance and quality control responsibilities and involvement in preoperational testing.

Review of the Unit 3 Startup Manual was initiated during the inspection. The inspector verified by selective sampling the procedural implementation of FSAR Chapter 14 requirements and applicable Regulatory Guides. The licensee's action to implement the "Initial Test Program," as described in the FSAR, Chapter 14, was also reviewed.

### Findings

The primary document for the administration of the test program is the Unit 3 Startup Manual. As a result of the initial NRC review of this document and discussions with licensee representatives, no discrepancies were noted. The inspector had no further questions.

The review of the Startup Manual and its implementation will continue during future inspections.

## 2.2 Test Program Requirements

### Discussion

The inspector met with the Startup Supervisor and his staff and discussed in detail three aspects of the test program requirements. They included the Test Program, the Test Organization and Test Program Administration. The following areas were also highlighted and are to be reviewed in subsequent inspections.

- Document Control
- Design Changes and Modifications

- Plant and Preventive Maintenance
- Equipment Protection and Cleanliness
- Test and Measurement Equipment
- Training

#### Findings

By reviews and discussions, the inspector verified the following:

- The licensee has prepared a description of the startup test program. General areas of testing have been identified and assignment of responsibilities have been made;
- The licensee's test program has requirements for testing that appear to be consistent with FSAR commitments;
- Administrative documentation specifies satisfactory format and content for preoperational test procedures;
- Required qualifications, responsibilities, lines of authority and method of appointments, and interfaces existing between organizations in the test program are clearly established in writing;
- Formal administrative measures have been established for jurisdictional control of system, component, or instrumentation status before, during, and subsequent to testing; and
- Formal administrative measures have been established governing the conduct of testing, controlled scheduling of test activities, and a formal program for evaluation of test results.

The inspector had no further comments or questions in this area at this time.

#### 2.3 Quality Assurance and Quality Control

Test program quality assurance and quality control, and action to implement coverage from construction to operating phase were reviewed and discussed with the licensee's representatives. Areas that were discussed included quality assurance organization, quality assurance program, quality control for testing and the transition phase from construction to operation.

The inspector had no further questions at this time. This area will be reviewed during future inspections.

## 2.4 Test Procedure Review and Verification

The approved preoperational and acceptance test procedures listed in Attachments A and B 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, clearly stated test objectives, 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.

## 3.0 Exit Interview

At the conclusion of the site inspection on August 24, 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

PREOPERATIONAL TEST PROCEDURE REVIEW

- (1) T3304-DP Revision 0, Approved August 10, 1984  
Boron Thermal Regeneration
- (2) T3313-FP Revision 0, Approved July 30, 1984  
Containment Vacuum System
- (3) T3314-GP Revision 0, Approved December 22, 1983  
Intake Structure ventilation
- (4) T3341-BP Revision 0, Approved December 12, 1983  
Halon-1301 Fire Protection System
- (5) T3332-AP001 Revision 0, Approved February 24, 1984  
Instrument Air - Turbine Building
- (6) T3332-BP Revision 0, Approved July 2, 1984  
Containment Instrument Air System
- (7) T3343-P001 Revision 0, Approved November 16, 1983  
4160V Switchgear Bus 34A
- (8) T3343-P002 Revision 0, Approved November 17, 1983  
4160V Switchgear Bus 34B
- (9) T3343-P003 Revision 0, Approved November 17, 1983  
4160V Switchgear Bus 34C
- (10) T3343-P004 Revision 0, Approved November 17, 1983  
4160V Switchgear Bus 34D
- (11) T3344-AP016 Revision 0, Approved June 24, 1983  
480V Load Center 32R
- (12) T3344-AP017 Revision 0, Approved August 9, 1983  
480V Load Center 32S
- (13) T3344-AP018 Revision 0, Approved August 9, 1983  
480V Load Center 32T
- (14) T3344-BP030 Revision 0, Approved June 24, 1983  
480V MCC Bus 32-1T
- (15) T3344-BP031 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-2T

- (16) T3344-BP032 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-3T
- (17) T3344-BP033 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-4T
- (18) T3344-BP034 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-5T
- (19) T3344-BP035 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-1U
- (20) T3344-BP036 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-2U
- (21) T3344-BP037 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-3U
- (22) T3344-BP038 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-4U
- (23) T3344-BP039 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-5U
- (24) T3344-BP040 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-1R
- (25) T3344-BP041 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-2R
- (26) T3344-BP042 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-1W
- (27) T3344-BP043 Revision 0, Approved August 23, 1983  
480V MCC Bus 32-2W
- (28) T3344-AP019 Revision 0, Approved August 9, 1983  
480V Load Center 32V
- (29) T3344-AP020, Revision 0, Approved August 9, 1983  
480V Load Center 32V
- (30) T3344-AP021 Revision 0, Approved August 9, 1983  
480V Load Center 32W
- (31) T3344-AP022 Revision 0, Approved August 9, 1983  
480V Load Center 32X
- (32) T3344-AP023 Revision 0, Approved August 9, 1983  
480V Load Center 32Y

- (33) T3345-BP001 Revision 0, Approved March 5, 1984  
Channel 1 120VAC Vital
- (34) T3345-BP002 Revision 0, Approved March 5, 1984  
Channel 2 120VAC Vital
- (35) T3345-BP003 Revision 0, Approved March 5, 1984  
Channel 3 120VAC Vital
- (36) T3345-BP004 Revision 0, Approved March 5, 1984  
Channel 4 120VAC Vital
- (37) T3345-BP005 Revision 0, Approved May 23, 1984  
Channel 5 120VAC Non-Vital
- (38) T3345-CP001 Revision 0, Approved July 5, 1983  
125VDC Channel 1
- (39) T3345-CP002 Revision 0, Approved July 5, 1983  
125VDC Channel 2
- (40) T3345-CP003 Revision 0, Approved July 5, 1983  
125VDC Channel 3
- (41) T3345-CP004 Revision 0, Approved July 5, 1983  
125VDC Channel 4
- (42) T3345-CP005 Revision 0, Approved July 5, 1983  
125VDC Channel 5
- (43) T3347-AP001 Revision 0, Approved August 23, 1983  
Reserve Station Service Transformer 15G-23 SA
- (44) T3347-AP002 Revision 0, Approved September 9, 1983  
Reserve Station Service Transformer 15G-23 SB
- (45) T3415-P001 Revision 0, Approved January 20, 1984  
Isolator Cabinet Group CESBD
- (46) T3415-P002 Revision 0, Approved January 20, 1984  
Isolator Cabinet Group CESBE
- (47) T3415-P003 Revision 0, Approved February 10, 1984  
Isolator Cabinet Group CESBG
- (48) T3415-P004 Revision 0, Approved January 20, 1984  
Isolator Cabinet Group CESBR



- (49) T3415-P005 Revision 0, Approved January 20, 1984  
Isolator Cabinet Group CESBS
- (50) T3415-P006 Revision 0, Approved January 20, 1984  
Isolator Cabinet Group CESBP

ATTACHMENT B

ACCEPTANCE TEST PROCEDURE REVIEW

- (1) T3314-EA Revision 0, Approved June 18, 1984  
Service Building HVAC
- (2) T3315-AA Revision 0, Approved May 16, 1984  
Turbine Building Ventilation
- (3) T3315-BA Revision 0, Approved July 30, 1984  
Main Steam Valve Building Ventilation
- (4) T3315-EA Revision 0, Approved March 5, 1984  
Auxiliary Boiler Room Ventilation
- (5) T3317-A Revision 0, Approved April 16, 1984  
Moisture Separator Reheater
- (6) T3323-BA001 Revision 0, Approved March 7, 1984  
Lube Oil Purification
- (7) T3323-BA002 Revision 0, Approved July 25, 1984  
Turbine Lube Oil System
- (8) T3323-CA Revision 0, Approved February 8, 1984  
EHC Control System
- (9) T3324-BA Revision 0, Approved April 2, 1984  
Main Generator Seal Oil
- (10) T3324-CA Revision 0, Approved April 16, 1984  
Generator H<sub>2</sub> and CO<sub>2</sub> System
- (11) T3324-DA Revision 0, Approved March 21, 1984  
Stator Cooling System
- (12) T3325-CA Revision 0, Approved June 24, 1983  
Cathodic Protection
- (13) T3328-A Revision 0, Approved July 18, 1984  
Chlorination System
- (14) T3332-CA Revision 0, Approved February 24, 1984  
Service Air System
- (15) T3333-A Revision 0, Approved May 8, 1984  
Nitrogen System

- (16) T3340-AA Revision 0, Approved October 6, 1983  
Domestic Water System
- (17) T3340-BA Revision 0, Approved May 4, 1983  
Water Treating System
- (18) T3340-CA001 Revision 0, Approved June 22, 1984  
Water Treatment System
- (19) T3340-CA Revision 0, Approved July 9, 1984  
Primary Grade Water System
- (20) T3345-DA Revision 0, Approved April 25, 1983  
125VDC Channel 6
- (21) T3349-A002 Revision 0, Approved July 29, 1983  
Computer Power Supply
- (22) T3344-BA001 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1G
- (23) T3344-BA002 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2G
- (24) T3344-BA003 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-3G
- (25) T3344-BA004 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-5G
- (26) T3344-BA005 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1H
- (27) T3344-BA006 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2H
- (28) T3344-BA007 Revision 0, Approved August 16, 1983  
480V MCC Bus 32-3H
- (29) T3344-BA008 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-5H
- (30) T3344-BA009 Revision 0, Approved August 26, 1983  
480V MCC BUS 32-1F
- (31) T3344-BA010 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2F
- (32) T3344-BA011 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-4F

- (33) T3344-BA012 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1J
- (34) T3344-BA013 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2J
- (35) T3344-BA014 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-4J
- (36) T3344-BA015 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-3E
- (37) T3344-BA016 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1D
- (38) T3344-BA017 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1L
- (39) T3344-BA018 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2L
- (40) T3344-BA019 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1C
- (41) T3344-BA020 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2C
- (42) T3344-BA021 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1M
- (43) T3344-BA022 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2M
- (44) T3344-BA023 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1A
- (45) T3344-BA024 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2A
- (46) T3344-BA025 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-3A
- (47) T3344-BA026 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1P
- (48) T3344-BA027 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2P
- (49) T3344-BA028 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-3P

- (50) T3344-BA029 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-1Q
- (51) T3344-BA044 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-4G
- (52) T3344-BA045 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-4H
- (53) T3344-BA046 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2D
- (54) T3344-BA047 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-3D
- (55) T3344-BA048 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-3L
- (56) T3344-BA049 Revision 0, Approved August 26, 1983  
480V MCC Bus 32-2Q
- (57) T3342-A001 Revision 0, Approved June 19, 1984  
6900V Switchgear Bus 35A
- (58) T3342-A002 Revision 0, Approved June 19, 1984  
6900V Switchgear Bus 35B
- (59) T3342-A003 Revision 0, Approved June 19, 1984  
6900V Switchgear Bus 35C
- (60) T3342-A004 Revision 0, Approved June 19, 1984  
6900V Switchgear Bus 35D
- (61) T3344-AA001 Revision 0, Approved August 9, 1983  
480V Load Center 32A
- (62) T3344-AA002 Revision 0, Approved August 9, 1983  
480V Load Center 32B
- (63) T3344-AA003 Revision 0, Approved August 9, 1983  
480V Load Center 32C
- (64) T3344-AA004 Revision 0, Approved August 9, 1983  
480V Load Center 32D
- (65) T3344-AA005 Revision 0, Approved August 9, 1983  
480V Load Center 32E
- (66) T3344-AA006 Revision 0, Approved August 9, -1983  
480V Load Center 32F

- (67) T3344-AA007 Revision 0, Approved August 9, 1983  
480V Load Center 32G
- (68) T3344-AA008 Revision 0, Approved August 9, 1983  
480V Load Center 32H
- (69) T3344-AA009 Revision 0, Approved August 9, 1983  
480V Load Center 32J
- (70) T3344-AA010 Revision 0, Approved August 9, 1983  
480V Load Center 32K
- (71) T3344-AA011 Revision 0, Approved August 9, 1983  
480V Load Center 32L
- (72) T3344-AA012 Revision 0, Approved August 9, 1983  
480V Load Center 32M
- (73) T3344-AA013 Revision 0, Approved August 9, 1983  
480V Load Center 32N
- (74) T3344-AA014 Revision 0, Approved August 9, 1983  
480V Load Center 32P
- (75) T3344-AA015 Revision 0, Approved August 9, 1983  
480V Load Center 32Q