

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-423/85-21

Docket No. 50-423

License No. CPPR-113

Priority --

Category B

Licensee: Northeast Nuclear Energy Company

P. O. Box 270

Hartford, Connecticut 06141

Facility Name: Millstone Nuclear Energy Station, Unit 3

Inspection At: Waterford, Connecticut

Inspection Conducted: May 13-17, 1985

Inspectors: H. H. Nicholas for  
N. Blumberg, Lead Reactor Engineer

5/31/85  
date

Approved by: H. H. Nicholas for  
L. H. Bettenhausen, Chief,  
Operations Branch, DRS

5/31/85  
date

Inspection Summary:

Inspection on May 13-17, 1985 (Inspection Report No. 50-423/85-21)

Areas Inspected: Routine, unannounced inspection of maintenance programs, I&C program and QA/QC interfaces. The inspection involved 30 hours onsite by one region-based inspector.

Results: No violations were identified.

## DETAILS

### 1. Persons Contacted

D. Blumenthal, NUSCO QA Engineer  
M. Brown, I & C Supervisor  
C. Clemont, Maintenance Supervisor  
J. Crockett, Unit 3, Superintendent  
K. Gray, NCQA Staff Assistant  
\*E. La Ware, Group Lead Startup Engineer NUSCO Construction QA  
\*D. Miller, NNECO Startup  
\*L. Nadeau, NUSCO Assistant Project Engineer  
\*P. O'Connell, Assistant Scientist, NUSCO Construction QA  
\*M. Pearson, Operations Assistant  
\*T. Rogers, I & C Planner  
R. Rothgeb, Staff Engineer

#### U.S. Nuclear Regulatory Commission

D. Lipinski, Resident Inspector, Millstone Units 1 and 2  
\*T. Rebelowski, Senior Resident Inspector, Millstone Unit 3

\*Denotes those present at the exit interview.

### 2. Inspection Scope

The following programs which the applicant must have established for operations subsequent to receiving an operating license, were reviewed:

- Corrective Maintenance Program
- Preventive Maintenance Program
- Technical Specification Surveillance Test Program
- Instrument and Control Program
- Inservice Test Program - Pumps and Valves
- Quality Assurance/Quality Control Programs

The above programs were reviewed for conformance to the requirements and guidelines of the following:

- 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
- Final Safety Analysis Reports (FSAR), Section 13, Conduct of Operations
- Technical Specifications, Section 6, Administrative Controls

- FSAR Section 17, Quality Assurance During the Operations Phase
- Reg. Guide 1.33 - 1978, Quality Assurance Program Requirements (Operation)
- ANSI N18.7 - 1976, Administrative Controls and Operational Quality Assurance for the Operational Phase of Nuclear Power Plants
- ANSI N45.2.1 - 1973, Cleaning of Fluid Systems and Components
- ANSI N45.2.3 - 1978, Housekeeping for the Construction Phase of Nuclear Power Plants

The above programs are defined in station and department procedures which are listed in Attachment (1) to this report. Department procedures define in more detail each department's implementation of a station procedure. However, departments are not required to establish an implementing procedure for each station procedure as they can use the station procedure directly if they desire. Most program procedures have been issued. Review of program procedures and discussions with plant representatives indicated that corrective maintenance, preventive maintenance, and instrument control programs were in place and being implemented in support of pre-operational testing and system turnover. Maintenance is controlled by a computerized system called the Production Maintenance Management System (PMMS). This system is used by all Northeast Utilities Companies and can be universally accessed within the company. Each department has a PMMS planner who is trained to make entries to the system.

All work is controlled by an automated work order (AWO) system which generates each work order as a computer printout. There is a manual back up system for when the computer is down or for emergency maintenance. Preventive maintenance and calibrations are automatically scheduled on an AWO. Personnel noting problems in the plant can generate a trouble report directly into a computer terminal which in turn will directly issue an AWO for work performance. At completion of a job all manual entries made on an AWO are also entered into the computer so that the computer maintains a complete maintenance history. This allows the PMMS system to provide virtually any kind of computer sort concerning plant maintenance.

Although for the most part, program procedures are in place, implementing procedures have not yet been issued. Discussions with plant personnel indicate that there is large backlog of operating, surveillance test, inservice test, maintenance, preventive maintenance, and plant instrument calibration procedures. Plant representatives stated extra personnel are being assigned to assure that procedures are issued by September, 1985.

Preliminary inspection and discussions with plant representatives indicated that the surveillance test programs and inservice test programs are not yet at a level which would warrant pre-license inspection by the NRC. Master test indices have not yet been established; and department respon-

sibilities for surveillance tests have not yet completely been assigned. There is no overall surveillance test coordinator, and each department is responsible for developing its own program. Although significant computer capability exists on the PMMS, the inspector was informed by the applicant that except for I & C Department, present plans call for manual scheduling of surveillance tests and maintenance of test status. Surveillance and inservice test programs will be reviewed during a subsequent NRC:RI inspection.

### 3. Maintenance Program

Corrective and preventive maintenance for mechanical and electrical, in general, will be performed by the Maintenance Department. I & C Department which is discussed in paragraph 4, will perform instrument corrective and preventive maintenance. Other groups which perform maintenance at the plant are a Northeast Utilities (NU) Interplant Maintenance force (IMF), Production Test Group (PTG), NU Construction Backfit and Betterment Group which currently uses the C. M. Flagg Company as permanent contractor, to perform their assigned work and other contractors used for case basis maintenance. IMF is an NU group which performs work at all NU facilities; PTG performs maintenance on electrical protective devices and Millstone Units 1, 2 and 3; and C. M. Flagg performs modification work for NU construction. The applicant stated that IMF, PTG, and any contractors work under plant systems and QA; while, C. M. Flagg works under the NU construction QC system.

Maintenance Department is currently performing maintenance related to turned over systems and systems under test. Approximately 50 out of 250 projected maintenance procedures have been issued with August, 1985 as the projected date for issuing all maintenance procedures. There are approximately 50 mechanics and electricians in the Maintenance Department and it is fully staffed based on current manning projections.

#### 3.2 Area Reviewed

The maintenance program was reviewed to assure that the following areas were incorporated into program procedures:

- A work permit system has been established for initiating and controlling maintenance activities
- Criteria and responsibilities have established for review and approval of maintenance work requests
- Responsibilities of maintenance personnel are defined
- Methods have been established for defining safety-related maintenance

- Methods have been developed for the preparation of maintenance procedures and their proper approval
- A program has been established for the definition and performance of preventive maintenance activities
- Systems have been established for the trending and evaluation of component failures
- Methods have been established for the evaluation of applicability of component failures at other nuclear power plants
- Responsibilities and method have been established to assure adequate post-maintenance testing will be accomplished prior to return to service
- Provisions and responsibilities have been established for the identification of appropriate inspection hold points
- QA/QC interfaces are defined
- Procedures are in place for the review and storage of maintenance records

3.3 The following procedures listed in attachment (1) were reviewed to ensure that the above areas were incorporated into the maintenance program:

- |                 |                |
|-----------------|----------------|
| -- ACP-QA-1.02  | -- ACP-QA-8.25 |
| -- ACP-QA-2.02B | -- ACP-QA-9.02 |
| -- ACP-QA-2.02C | -- ACP-QA-9.04 |
| -- ACP-QA-2.06A | -- MP 3701A    |
| -- ACP-QA-2.06B | -- MP 3702A    |
| -- ACP-QA-2.06C | -- MP 3702B    |
| -- ACP-QA-2.07  | -- MP 3704A    |
| -- ACP-QA-2.12  | -- MP 3708A    |
| -- ACP-QA-2.13  | -- MP 3710AA   |
| -- ACP-QA-3.01  | -- MP 3710BA   |
| -- ACP-QA-3.02  | -- MP 3719MB   |
| -- ACP-QA-3.03  |                |
| -- ACP-QA-3.05  |                |
| -- ACP-QA-3.07  |                |
| -- ACP-QA-4.01  |                |
| -- ACP-QA-5.02  |                |

#### 3.4 Findings

Although a maintenance training procedure exists, a plant representative stated that a maintenance training program was still being developed. This training will include administrative controls, a

systems course, and pump and valve maintenance training. The applicants action in this area will be reviewed during a subsequent NRC:RI inspection. This is IFI (423/85-21-01).

#### 4. Instrument and Control Program

##### 4.1 Program Review

Corrective and preventive maintenance of plant instruments will be accomplished by the I&C Department. I&C Department is currently fully staffed. There are 24 contract I&C technicians working in I&C; however, they are fully integrated with the plant staff. I&C Department gives a comprehensive written test to all contract technicians prior to hiring and does not rely completely on vendor certification of qualifications.

There appears to be in place a comprehensive program for instrument maintenance. A loop folder has been prepared for each instrument which contains such information as a loop diagram, calibration data sheets, valve lineups for taking the instrument out of service and placing back into service, and an instrument history card. Instrument calibration procedures will be developed, either specific or generic, for each instrument in the plant. Most calibration procedures are being written and have not yet been issued.

I&C stated that all calibrations and technical specification surveillance tests will be scheduled using the PMMS computer (as opposed to the manual system). Surveillance tests required to be performed by I&C have been identified and procedures are being written. The development of the surveillance test program appeared to be ahead of that of other departments.

##### 4.2 Independent Verification

The I & C Department stated that they required their technicians to lockwire all instrument valves after use. During plant tours, the inspector observed numerous instrument valves which were lockwired. Each valve was lockwired firmly with heavy duty lockwire in such a manner that the lockwire would preclude operation of the valve unless physically cut and removed.

A small sampling of instrument loop folders were reviewed and the inspector observed that they contained the appropriate information. In addition, the PMMS system was tested. The inspector noted that work on the system could be checked in many different ways. Information sorts were available such as components, technicians performing work, procedures used, measuring and test equipment used, etc. These sorts would be valuable in tracing specific maintenance histories.



### 4.3 Areas Reviewed

The I&C program was reviewed to assure that the following areas were incorporated into program procedures:

(Note: Maintenance areas listed in paragraph 3.2 are also applicable. Items listed below are those which are unique to I&C.)

- Responsibilities of I&C personnel are defined
- Methods have been developed for the preparation of I&C procedures and their proper approval
- A program has been established for the calibration of technical specification related instruments
- A program has been established for the calibration of balance-of-plant instruments
- Training programs have been established for I&C personnel

4.4 The following procedures listed in attachment (1) were reviewed to ensure that the above areas were incorporated into the I&C program:

|              |             |
|--------------|-------------|
| ACP-QA-2.02B | ACP-QA-3.03 |
| ACP-QA-2.02C | ACP-QA-3.07 |
| ACP-QA-2.06A | ACP-QA-8.25 |
| ACP-QA-2.06B | ACP-QA-9.02 |
| ACP-QA-2.06C | ACP-QA-9.04 |
| ACP-QA-2.12  | IC-3401     |
| ACP-QA-2.BA  | IC-3402     |
| ACP-QA-2.13B | IC-3403     |
| ACP-QA-3.01  | IC-3404     |
| ACP-QP-3.02  | IC-3405     |

### 4.5 Findings

No violations or other discrepancies were observed.

## 5. QA/QC Interfaces

There are currently two QA groups onsite concerned with operational QA-corporate (NUSCO) QA and site QA (NNECO). Site QA is a line organization which works under the Station Services Superintendent who in turn reports directly to the Station Superintendent, and does not report to any of the three site superintendents. Site QA provides QA/QC services to all three units. This includes audits, QA surveillance, and specific QC inspections of on-going work. NUSCO QA also maintains an onsite QA group which reports directly to the corporate organization. They perform overview audits and QA surveillances of all site activities including those of site

QA. In some instances, NUSCO and site QA perform joint audit activities. The inspector held discussions with NUSCO QA representatives who stated that all NUSCO and NNECO QA programs and procedures were in place and being implemented. QA/QC activities will be inspected for operating license activities during a future NRC:RI inspection.

6. Management Meetings

Licensee management was informed of the scope and purpose of the inspection at an entrance interview conducted on May 13, 1985. The findings of the inspection were periodically discussed with licensee representatives during the course of the inspection. An exit interview was conducted on May 17, 1985 (see paragraph 1 for attendees) at which time the findings of the inspection were presented.

At no time during this inspection was written material provided to the applicant by the inspector.



ATTACHMENT (1)

STATION AND DEPARTMENT PROCEDURES REVIEWED

Station Administrative Control Procedures

|              |  |                       |
|--------------|--|-----------------------|
| ACP-QA-1.02  | Organization and Responsibilities,   | Revision 16, 04/17/85 |
| ACP-QA-1.04  | Plant Operations Review Committee,   | Revision 19, 06/13/84 |
| ACP-QA-1.05  | Site Operations Review Committee,  | Revision 13, 06/13/84 |
| ACP-QA-1.06  | Quality Assurance/Quality Control,<br>Program  | Revision 8, 12/24/84  |
| ACP-QA-2.01  | QA Program Boundary,   | Revision 5, 05/17/84  |
| ACP-QA-2.02B | Retests,   | Revision 10, 11/13/84 |
| ACP-QA-2.02C | Work Orders,   | Revision 2, 02/25/85  |
| ACP-QA-2.06A | Station Tagging,   | Revision 8, 03/11/85  |
| ACP-QA-2.06B | Station Bypass/Jumper Control (NEO 8.01)   | Revision 5, 02/01/85  |
| ACP-QA-2.06C | Station Bypass/Jumper Control for Trouble Shooting,<br>Red Lining and Calibration,             | Revision 1, 10/26/84  |
| ACP-QA-2.07  | Control of Special Processes,  | Revision 14, 05/13/85 |
| ACP-QA-2.12  | System Valve Alignment Control,  | Revision 6, 10/09/84  |
| ACP-QA-2.13A | Computer Software Implementation,  | Revision 0, 03/05/85  |
| ACP-QA-2.13B | Maintenance and Control of Site Computer<br>Systems,   | Revision 0, 03/05/85  |
| ACP-QA-3.01  | ACP's and Station Forms.   | Revision 14, 12/03/84 |
| ACP-QA-3.02  | Station Procedures and Forms,  | Revision 32, 05/07/85 |
| ACP-QA-3.03  | Document Control,  | Revision 25, 05/09/82 |
| ACP-QA-3.05  | Review and Approval of Vendor Procedures,  | Revision 6, 11/17/82  |
| ACP-QA-3.07  | Maintenance of Station Implementing Procedures in Accordance<br>with NUSCO Governing Documents | Revision 4, 12/01/82  |
| ACP-QA-4.01  | Plant Housekeeping,  | Revision 11, 11/13/84 |

|              |  |                       |
|--------------|--|-----------------------|
| ACP-QA-5.02  | Trend Analysis From Quality-Related Documents,           | Revision 0, 02/25/85  |
| ACP-QA-8.07  | QA Training Program,                                     | Revision 3, 06/04/82  |
| ACP-QA-8.15  | Technical Training Program,                              | Revision 0, 01/17/83  |
| ACP-QA-9.02  | Station Surveillance Program                             | Revision 12, 11/13/84 |
| ACP-QA-9.03  | Inservice Plant Testing,                                 | Revision 5, 11/02/82  |
| ACP-QA-9.04  | Control and Calibration of Measuring and Test Equipment, | Revision 16, 09/14/84 |
| ACP-QA-9.05  | Monitoring of QA Activities,                             | Revision 12, 02/28/83 |
| ACP-QA-9.06  | Inservice Inspection Program,                            | Revision 8, 02/01/85  |
| ACP-QA-9.07  | Quality Assurance Surveillance Program,                  | Revision 0, 02/01/85  |
| ACP-QA-10.06 | NRC Commitment Follow Program,                           | Revision 5, 03/02/84  |

I&C Department Procedures

|         |  |                      |
|---------|--|----------------------|
| IC 3401 | Unit 3 Instrument and Control Department Training,   | Revision 2, 02/20/85 |
| IC 3402 | Assembly and Maintenance of Instrument Loop Folders, | Revision 2, 03/28/84 |
| IC 3403 | Unit 3 Preventive Maintenance (PM) Program,          | Revision 2, 03/28/84 |
| IC 3404 | Unit 3 I&C Department Installation Verification,     | Revision 2, 06/24/83 |
| IC 3405 | EEQ Maintenance,                                     | Revision 0, 06/14/83 |

Maintenance Department Procedures

|           |   |                      |
|-----------|---|----------------------|
| MP 3701A  | Maintenance Procedures and Forms,           | Revision 0, 05/31/83 |
| MP 3702A  | EEQ Maintenance Program,                    | Revision 0, 01/14/85 |
| MP 3702B  | EEQ Closeout Requirements,                  | Revision 0, 01/14/85 |
| MP 3704A  | Preventive Maintenance Program,             | Revision 1, 05/17/85 |
| MP 3708A  | Unit 3 Maintenance Training,                | Revision 0, 10/13/83 |
| MP 3710AA | Lubrication Program,                        | Revision 1, 03/15/85 |
| MP 3710BA | Preventive Maintenance Program Application, | Revision 0, 05/03/84 |
| MP 3719MB | Mechanical Equipment General Inspections,   | Revision 0, 04/15/85 |