

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-423/85-20

Docket No. 50-423

License No. CPPR-113

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: May 13-17, 1985

Inspectors: E. H. Gray  
E. H. Gray, Lead Reactor Engineer

6/10/85  
date

Approved by: J. Wiggins  
J. Wiggins, Chief  
Materials and Processes Section, DRS

6/10/85  
date

Inspection Summary: Inspection During May 13-17, 1985 (Report 50-423/85-20)

Areas Inspected: Routine, unannounced inspection by one region based inspector. The inspection included the areas of current safety related pipe welding, Post Weld Heat Treatment (PWHT) of containment shell penetrations, reactor vessel clevis insert hard surfacing, work in progress including welding, resolution of an allegation and observation of a through wall leak of one service water clad elbow. The inspection included 34 hours on site and an additional 3 hours at the regional office.

Results: No violations were identified.

## DETAILS

### 1. Persons Contacted

#### Northeast Utilities Service Company (NUSCO)

- \*K. Gray, Staff Assistant - QA
- \*E. LaWare, Engineering Technologist - CQA
- \*L. Nadeau, Asst. Project Engineer
- \*P. O'Connell, Asst. Scientist, CQA
- A. Silvia, Materials Engineer
- R. Vaccaro, QA Supervisor (Acting)

#### Northeast Nuclear Energy Company (NNECO)

- M. Gentry, Asst. Startup Supervisor
- M. Hess, ISI, IST Coordinator
- \*D. Miller, Startup Manager
- \*N. Pearson, Operations Assistant
- \*T. Rodgers, I&C Planner

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

- \*J. Capazzoci, Supervisor of Construction Services
- B. Hammer, Senior QC Inspector
- \*L. Nace, Project Manager
- \*W. Peterson, Sr. Engineer, FQC
- \*R. Scannell, QA Program Administrator
- \*W. Voss, Senior Engineer, FQC

\*Indicates those present at the Exit Meeting on May 17, 1985.

### 2. Licensee Action on Previous Open Items

(Closed) Unresolved Item (423/83-05-01). Grindouts in reactor vessel support clevis hardfaced service. The lower radial support clevis insert customizing at the 60° position is shown on Westinghouse drawing 1050F38 for Millstone Unit 3. MRR 4233 provides disposition for 31 grindouts in the stellite surfacing. The disposition included design engineering evaluation of the grindouts with respect to adequacy for service of the load bearing surface. The inspector contacted the design engineer and determined that the criteria of the ASME Code Section III, part NG 3227 was used as the basis to evaluate the significance of the grindouts on service loading. This evaluation is noted to be contained in the Westinghouse Engineering Record Book 0218, page 45 for MRR 4233. The inspector had no further question in this area. This item is closed.

(Closed) IE Information Notice (No. 84-63). Defective RHR Replacement Piping.

This IE Information Notice was initiated as a result of base metal discontinuities found in 18 inch SA 333 GR 6/SA655 RHR (Class 1) piping for the Monticello Plant.

This information notice, which was not directly applicable to the Millstone Unit 3 plant, was reviewed by Northeast Utilities as documented by letter PSE-84-R-319 dated December 17, 1984. This letter correctly indicates that Code specification SA655 does not provide for detection of laminations in piping by use of straight beam examination.

This notice is closed.

(Closed) Potential Significant Deficiency (423/80-00-06). Post Weld Heat Treatment (PWHT) of Containment Penetrations.

The ASME Code Section III (Summer 1973) paragraph NE-4622, in the notes to Table NE 4622.1-1 provides that PWHT of material up to and including  $1\frac{1}{2}$  inches in thickness is not mandatory. This paragraph, NE-4622, and Table NE-4622.1-1 are applicable to the Millstone Unit 3 Containment Boundary per Specification Number 2190.520-109 for the shop fabrication and field erection of the containment structure steel plate liner. In the Summer 1976 ASME Code Revision, Table NE 4622.3.1 was revised to require PWHT of nozzle and penetration welds (over 2" I.D.). The Graver Energy Systems, Inc., by letter of August 15, 1980 stated a potential reportable condition in that PWHT of penetration to shell welds was not performed. The Graver Letter was reviewed by Stone and Webster as documented in the SWEC letter of October 17, 1980 with the determination that the penetration to liner welds  $1\frac{1}{2}$  inch and less in thickness do not require PWHT for work done under the scope of the ASME Code Section III, 1971 through Summer 1973 subsection NE. This position was presented by NNECO to the NRC by letter of W.G. Council dated October 24, 1980.

The inspector reviewed the FSAR requirements for containment liner penetration design and installation, the above referenced letters, the applicable ASME Code Section III NE paragraphs and typical drawings of liner penetrations.

Only containment liner penetration welds over  $1\frac{1}{2}$  inches in thickness are required to receive PWHT by the ASME III, NE subsection applicable to Millstone Unit 3, i.e., paragraph NE 4621.1(b) and Table NE4622.1-1. A sample of Graver Drawings NL-10195 and 10207 for 35" (P50) and 48" (P35) penetrations over  $1\frac{1}{2}$ " thickness indicated PWHT to be performed as required. The inspector concluded that containment penetration welds have received PWHT where required by the applicable ASME Code requirements. The Graver potential significant deficiency was evaluated by SWEC and the licensee and found to be not applicable to Millstone Unit 3. Independent review by the inspector resulted in agreement with this conclusion.

This item is closed.

(Open) Response to IE-B 83-05 (423/83-21-01). Preservice and inservice testing of pumps.

The inspector reviewed the status of the plant's followup to the August 17, 1983 letter of NNECO by W. G. Council on IE Bulletin 83-05 for the safety related service water pumps (SWP).

The startup program, phase one testing, resulted in three deficiencies, UNS 3009, 3010 and 3011 against the SWP. Deficiency 3010, which relates to pump run down time (14-21 seconds), was closed on the basis of consistency with previous manufacturer data. UNS 3009 and 3011, which have not been evaluated and resolved, describe the condition wherein the calculated horsepower based on motor amperage is not within 10% of the pump test curve. The IEB 83-05 endurance test of 48 hours has not been performed. This item remains open pending engineering review and disposition to UNS 3009 and 3011, completion of the 48 hour endurance test and completion of inservice test procedures.

### 3. Followup On An Allegation Regarding Licensee Compliance to the ASME Code

On the afternoon of May 15, 1985, the inspector interviewed an individual in regard to his previous allegations concerning the extent of the licensee's compliance to the applicable sections of the ASME code associated with piping, supports and the containment liner. These allegations had been discussed with the inspector and the Senior Resident Inspector during the time period of 10/28/83 to 5/15/85. The allegor stated, on May 15, that he had continued to follow these previous concerns and presently considers all of the situations to have been suitably resolved.

The allegor presented a new concern on May 15, 1985 with regard to the formal documentation procedure required in the case where a weld data sheet is lost prior to incorporation into the weld joint document data package.

The specific question was connected with the weld data sheet for weld FW1, Line 3RCS-029-11-1, shown on Drawing CI-RCS LP3. The allegor stated the original weld data sheet record had been lost and a replacement record was rebuilt from logs and other available records. Hold point signoffs were made by those who had signed the original weld data sheet. The allegor stated that since the rebuilt weld data sheet did show how the weld was actually made and inspected, his only problem with it was that a rejection form such as a QC IR or N&D had not been issued describing that the original record had been lost. The allegor stated that he didn't consider this to be a serious problem and that he was not looking for a written reply, but rather this situation was described for "NRC information". The inspector reviewed the weld data sheet for CI-RCS LP3, FW1, and noted that it clearly indicated that the data sheet was rebuilt from work logs, ANI logs and Inspector's logs. The SWEC QA manual, part 4.0, provides a control point, at the time of the system hydrotest, where verification that documentation is on file is required prior to system pressure testing. At this point if a weld data sheet were found to be missing, an UNSAT or N&D would be required to be issued prior to pressure testing. The above FW1 weld data sheet was rebuilt prior to the system pressure test such that an UNSAT or N&D was not required. The inspector concluded, as did the allegor, that actual preparation of the rebuilt weld data sheet was being controlled

by the licensee. Also, occurrences of lost weld data sheets has, to date, been minimal.

The NUSCO QA supervisor stated that the need for a specific procedure to control replacement of lost documentation such as weld data sheets would be reviewed. The inspector had no further questions in this area and considers the allegers concern of May 15, 1985 to be closed.

#### 4. Service Water System Clad Elbow Leak

The 24 inch service water elbow SN #4989, 3 SWP-23-3-2-3 shown on S.O.Q3418-SHT-152 is 0.375 inch thick Wall, SA516-80 material with 0.075" minimum thickness 90-10 Copper Nickel. The elbow is welded fabrication, being formed of two halves with longitudinal welds at the inside and outside minor and major diameters. Drawing SHT 152 provides for clad weld metal overlay over butt weld joints. One through-wall hole, approximately 3/8" diameter, was observed approximately 1" from the edge of the minor diameter longitudinal weld. By ultrasonic thickness measurement, a cavity was determined to be present between the outside surface at the 3/8" diameter hole and the internal clad surface. The cavity and a hole in the clad could be seen visually. Following this inspection, access was provided for visual inspection of the internal surface of elbow #4989. An unclad area approximately 1/8" X 1 3/4" was found. The cause of the leak is attributed the classic small anode (iron) - large cathode (Cu-Ni) galvanic cell corrosion in salt water. The NRC inspector independently sampled areas of this elbow and two similar elbows by ultrasonic measurement of thickness and detected no other areas with this type corrosion in progress. NUSCO is evaluating the above leak and the other similar elbows by ultrasonic examination and visual examination as applicable.

No violations were identified.

#### 5. Safety Related Welding on Piping and Pipe Supports

The inspector toured the plant and observed welding and Quality Control inspection activities in progress.

Pipe welding and pipe hanger or support welding were compared to the requirements of the ASME Code Section III and ANSI B31.1 respectively. The records of qualification of welders and weld procedures were reviewed against the requirements of the ASME Code Section IX. The following in progress welding, including QC inspection documentation on weld data sheets as applicable, was observed:

3FWS-018-16-3	FW7 and FW55	Pipe
3FWS-018-20-3	FW8 and FW51	Pipe
3FWS-018-28-3	FW7	Pipe
DWGCI-SSRPENI	FW32-1	Pipe Cap.
3BDG-001-005-2	IR-P5-A-03016	Pipe Support
3BDG-001-006-4	IR-P5-A-03016	Pipe Support
3BDG-1-PSSP-403	IR-P493663	Pipe Support
MK3-RCS-1-PSSP-312	E+DCRTJ-04593	Pipe Support



Welder qualifications for the welders on the above work (P18, P47, P66, P110, P524 and B1) were reviewed.

No violations were identified.

#### 6. Independent Measurements

##### Material Thickness

The inspector used a NOVA-100D ultrasonic thickness gage to measure the wall thickness of selected pipe and plate components in the plant. The use of this instrument is also discussed in paragraph 4 on the service water elbow. Other areas where measurements were made included the boric acid tank (3 CHS-TK-5A), and the piping listed below.

3 CHS-20-1-2-2  
3 CHS-20-2-2-2  
3 CHS-31-2-2-2

The values obtained were compared to that required by the appropriate component drawing or specification.

No violations were identified.

##### Radiography

During The recent Construction Assessment Team (CAT) inspection three radiographs were identified to be unsatisfactory. These welds were:

<u>Item</u>	<u>Identification</u>	<u>N&amp;D</u>
030	CI-RCS-513 FW1	11743
054	CI-RSS-0501 FW-66	11470
169	Letdown Hx #3C-Noz A	11954

The inspector reviewed the documentation of weld repair and examined the repair radiographs for evaluation against the ASME Code Requirements.

Radiographs for other welds in the film reading process on 5/14/85 and undergoing ANI review, along with documentation, were also examined.

No violations were identified.

#### 7. QA/QC Involvement in Areas Inspected

A portion of this inspection was directly involved with QA/QC activities, in particular, measurements of the high pressure reactor vessel thermocouple seals, radiography, hold point inspections of work in progress and the control and generation of documentation of completed work, including welding. The inspector observed QA/QC personnel to be present and involved in the areas covered by this inspection. This involvement included supervision of quality examinations, procedure review, surveillance and auditing.

No violations were identified.

8. Exit Meeting

The inspector met with licensee representatives, listed in paragraph 1, at the conclusion of the inspection to summarize the scope and findings of the inspection. At no time during this inspection was written material provided to the licensee by the inspector.