

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-423/85-22

Docket No. 50-423

License No. CPPR-113

Priority --

Category C

Licensee: Northeast Nuclear Energy Company

P. O. Box 270

Hartford, Connecticut 06101

Facility Name: Millstone Unit 3

Inspection At: Waterford, Connecticut

Inspection Conducted: May 20 - June 14, 1985

Inspectors:

Harry W. Kerch  
Harry W. Kerch, Lead Reactor Engineer

8/5/85  
date

Richard H. Harris  
Richard H. Harris, NDE Technician

8/5/85  
date

Randy M. Campbell  
Randy M. Campbell, NDE Technician

8/5/85  
date

Approved by:

James T. Wiggins  
James T. Wiggins, Chief  
Materials and Processes Section

8/5/85  
date

Inspection Summary: Inspection on May 20 - June 14, 1985 (Report No. 50-423/85-22)

Areas Inspected: A routine, announced, NRC independent measurements inspection conducted at the utility construction site using the NRC Mobile Nondestructive Examination (NDE) laboratory consisting of examinations of selected safety related piping, fabricated to ASME Code, Section III, Classes 1, 2 and 3. Three regional based inspection personnel assisted by two contracted NDE personnel were utilized during this inspection. The inspection involved 440 onsite hours and 135 hours in the Region I office.

Results: One violation was identified concerning unacceptable radiographic indications (Paragraph 2.2) and one violation was identified concerning control of unique identification No. and drawing changes. (Paragraph 2.2)

## DETAILS

### 1. Persons Contacted

#### NUSCO/NNECO

R. E. Busch, Project Manager  
J. O. Crockett, MP3 Unit Superintendent  
K. W. Gray, Jr., Staff Assistant, NCQA  
E. J. LaWare, Engineering Technologist  
R. E. Lefebvre, Senior Engineer  
D. M. Miller, Jr., Startup Manager  
L. J. Nadeau, Assistant Project Engineer  
S. Orefice, Project Engineer  
E. J. Peckham, CQA Specialist  
R. W. Pritchard, PSI Project Engineer  
S. L. Sikorski, NDE Level III  
A. J. Silvia, Senior Engineer, Welding  
W. R. Sullivan, Startup Engineer

#### Stone & Webster

M. R. Matthews, Assistant Superintendent, FQC  
L. Peterson, Senior Engineer, FQC  
L. D. Nace, Project Manager  
R. J. Rudis, EA Program Manager  
R. J. Scannell, QA Program Administrator  
C. B. Sprouse, Supt. of Construction  
G. G. Turner, Resident FQC Manager  
W. H. Vos, Senior Engineer, FQC

#### NRC

M. Gaudino, Reactor Engineer  
R. H. Harris, Engineering Tech  
H. W. Kerch, Reactor Engineer  
A. Kortas, Reactor Engineer  
T. Rebelowski, Senior Resident Inspector  
R. J. Summers, Project Engineer  
J. T. Wiggins, Section Chief, Materials & Processes

### 2. Independent Measurements - NRC Nondestructive Examination and Quality Records Review of Safety Related Systems

During the period May 20 through 31, 1985, quality records received from Millstone Nuclear Plant were reviewed in the regional office for completeness and compliance to the licensee's FSAR commitments, applicable codes, standards and specifications. Subsequently, an on-site independent verification inspection was conducted during the weeks of

June 3 through June 14, 1985, using the NRC Mobile Nondestructive Examination (NDE) Laboratory. This inspection was conducted by Regionally based personnel in conjunction with NRC contracted personnel.

The purpose of this examination was to verify the adequacy of the licensee's welding and nondestructive examination quality control programs. This was accomplished by duplicating those examinations required of the licensee and evaluating the results. In addition to the required examinations, several other confirmatory examinations designed to verify conformance with material specifications were performed and compared to quality assurance records.

An NRC inspector made a random selection of shop and field weldments fabricated to ASME Class 1, 2 and 3 codes. These were intended to provide a representative sample of piping systems, components, and pipe size. The items selected had been previously accepted by the licensee based on vendor shop and on site QA/QC records.

## 2.1 Quality Documents Review

Forty safety related piping system document packages covering the items shown in attachment 3 were reviewed for compliance with licensee procedures, applicable codes, standards and regulatory requirements. The following documents were reviewed:

<u>Document</u>	<u>Attributes Reviewed</u>
Material Certifications (Base)	Material chemical and physical properties compared to standards and Code requirements.
NDE Records	Examinations meet codes and standards, licensee procedures and other commitments. Personnel properly qualified. Appropriate examinations performed.
Fabrication Records	A review of fabricator's traveler and fabrication records was performed and compared against other corresponding records and sign off sheets.
Drawings (isometrics)	Drawings were reviewed for proper designation of weldments, location and classification.
Procedures	Procedures were reviewed for completeness, and to verify the implementation of the licensee's commitments to Code requirements.

## Welding Material

Material certifications for welding materials were reviewed to determine if physical and chemical properties were as required by licensee's commitments to Code and Industry Standards.

Results: No violations were identified.

## 2.2 Nondestructive Examinations:

Nondestructive examinations were performed using NRC procedures with addenda written specifically to comply with the licensee's PSAR commitment to the ASME B&PV Code. The intent of these examinations was to duplicate, to the extent practicable, the techniques and methods of the original examinations.

The following NDE examinations were performed:

### Radiographic Examination:

Thirty-four safety related pipe weldments were radiographed using an Iridium-192 source per NRC procedure NDE-5-Rev. 0 addenda MS-1-5-1. ASME Class 1 and 2 weldments were examined. The resulting radiographs were evaluated per applicable Code requirements and compared to the licensee's radiographs.

### Results:

The NRC reviewers rejected weld RSS-9-FW2 because of an elongated indication approximately 1 inch in length, located at station 7-14. Weld RSS-7-3-4-2-SWB was also rejected because of an elongated indication at station 26.

The inspectors determined that the indications noted in the above weldment did not meet the acceptance criteria of ASME Code section III, Article NB/NC5320. Further, these indications had not been previously identified and dispositioned per Article NB/NC5310 of the Code by the licensee. Failure to identify and disposition these indications is considered a violation (423/85-22-01). As a result of this violation, Nonconformance and Disposition (N&D) reports, 13387 and 13533 have been issued by the site and the weldments have been re-radiographed and properly interpreted. The dispositions for the N&Ds were to repair the welds.

Weld MSS-32-SWC was radiographed by the NRC and the film was compared to the site radiographs. The NRC radiographic film and the site film did not match. The inspector learned that the site control drawing 2179-C.1-MSS-32 Rev. 2, dated 08/30/84, identified two vendor shop welds fabricated by TUBECO as SWIC and SWID. The weld identified on the drawing as MSS-32-SWC

was also identified as TUBECO SWIC. These welds no longer exist in this pipe spool because they have been cut out and replaced by another offsite vendor (Southwest Fabrication). Southwest used different unique numbers (i.e. SW2 and SW3) to identify these new welds. The pipe spool control drawing had not been revised to show the change to these welds. Consequently, the inspector initially attempted to compare a NRC radiograph of SW2 with a TUBECO radiograph of SWIC. Additionally, the inspector learned that SWIC was one of a number of welds that had been similarly removed and replaced by Southwest Fabrication when it assumed the pipe contract from TUBECO. The licensee stated that they were aware of this condition; however, no documentation was presented to support this statement. In this specific case, no direct safety implications were identified. The concern lies in the fact that during the transition from TUBECO to Southwest Fab other singular misidentified or unidentified welds might exist which do not appear on controlled drawings. The licensee stated that a decision was made not to update the site drawings until the completion of the code-stamping process.

The inspector informed the licensee that this decision was not consistent with the requirements of site quality procedures for piping fabrication which require that vendor-supplied items be uniquely identified on site isometrics. Not updating the drawings was identified as a violation. (423/85-22-02)

#### Penetrant Examination:

Twenty-eight safety related pipe weldments and adjacent base material ( $\frac{1}{2}$ " either side of weld) were examined using liquid penetrant techniques per NRC procedure NDE-9, Rev. 0 addenda MS-1-9-1.

Samples examined included ASME class 1 and 2 piping.

Results: No violations were identified.

#### Magnetic Particle Examination: (MT):

Four ASME Class 3 safety related pipe weldments and adjacent base material ( $\frac{1}{2}$ " either side of weld) were MT examined per NRC procedure NDE-6 Rev. 0 addenda MS-1-6-1.

Results: No violations were identified.

#### Thickness Measurements:

Twenty-nine safety related pipe weldments and adjacent base material (2' either side of weld) were examined to determine minimum wall thickness per NRC procedure NDE 11, Rev. 0. Measurements were performed using a NOVA-D100 thickness gage. Minimum wall thickness was determined using an ASTM standard pipe size and nominal thickness chart.

Results: No violations were identified.

Ferrite Measurements

Nineteen pipe weldments were checked for Delta Ferrite content using a type II Ferrite Indicator (Severn Gauge). This test was performed to verify that the weld filler metal deposited had a composition of sufficient delta ferrite to prevent weld metal solidification cracking. The Severn Gauge was checked against a coded calibration standard traceable to the National Bureau of Standards.

Ferrite numbers ranged from 5FN to 8.5FN

Results: No violations were identified.

Hardness:

Twelve safety related pipe weldments were examined for hardness using an Equo-tip hardness tester per NRC procedure NDE-12, Rev. 0. Hardness numbers determined by the use of the Equo-tip tester were converted to Brinell values and the approximate tensile strength was determined by use of conversion tables.

Results:

No violations were identified.

Alloy Analysis:

Three safety related pipe weldments and adjacent base material were examined using a Texas Nuclear Alloy Analyzer. This examination provides a qualitative and quantitative analysis of the major elements to assure the materials meet applicable requirements.

Results:

No violations were identified.

Visual Examination:

Fifty one safety related pipe weldments and adjacent base material ( $\frac{1}{2}$ " either side of weld) were visually examined for weld reinforcement, weld size, appearance, surface condition and overall workmanship per NRC procedure NDE-14 Rev. 0.

Results:

No violations were identified.

### Ultrasonic Examination:

An ultrasonic examination was performed on a pipe to reducer weldment, (licensees identification) FWS-17-FW-7C-M. This was an examination to confirm indications shown on UT data sheet MP-3-03. Using a Sonic Mark I flaw detector, the inspector found geometric reflections intermittently, 360° around the pipe, at the root area of the weld. The examination was performed using a technique as close as practical to the original. Calibration and the Distance Amplitude Curve were performed using site calibration block No. UT-35. The instrument setting, gain setting and search units were essentially the same as those used in the original examination.

### Results:

No violations were identified.

### 3. Radiographic Film Review

A sampling of licensee's radiographs were reviewed. The selection was made from a computer listing. The purpose of this review was to determine the compliance of the nondestructive examination program to ASME Section III Code requirements. The inspector reviewed 106 field welds and 12 shop welds to verify the accuracy of the interpretation and the adequacy of the licensee's radiographic program (see attachment 2). Listed below are the findings.

Radiographic reader sheet for weld CP-402700 FW-19-1 did not have the interpretation for the film area 2-3 which was reshot on 03/13/84. The reader sheet for this area was found to have been filed with the original radiographs, dated 02/09/84. This filing problem was resolved.

Weld CHS-9 FW5, film area 4-0, contained a 3" elongated indication and weld CHS-15-FW8 contained an elongated indication 360° around the weld. Visual examinations were performed by the licensee and the NRC on these welds. The indications were found to be apparent weld undercuts on the O.D. surface of the weld. Neither of the above weld radiographic reader sheets identified or dispositioned the apparent indications. The above items are unresolved pending licensee investigation and NRC review. Unresolved items (423/85-22-03)

Pipe to nozzle weld MSS-502-FW1-1 was radiographed by the NRC. Film area 62-69 contained an elongated indication 8" in length. A review of the licensee radiographs did not reveal this indication. The licensee re-radiographed this weld and the indication was apparent on the site film. An attempt to visually examine the weld root was determined to be impracticable due to limited access to the pipe I.D.

from the steam generator. PSI ultrasonic examination data were reviewed and the data indicated intermittent root geometry reflectors 360° around the weldment. In order to precisely define this indication the licensee ultrasonically examined this weld. This examination was witnessed by the NRC. The examination revealed an indication in the same area as the radiographic film, detectable from the pipe side only. The indication appeared to be caused by a size mismatch between the pipe and the nozzle. The inspector had no further concerns with this item.

#### Results:

No violations were identified.

#### 4. Previous NRC Inspection Findings

(Closed) Violation (50-423/83-14-01): Radiographic penetrameters placed across weld in the area of interest. This condition was found to be acceptable under the latest ASME III Code, provided that the lead identification numbers of the penetrameters do not obscure any part of the weld. The inspector reviewed the licensee's corrective action, such as re-radiographing where penetrometer lead numbers were placed in the area of interest. The inspector had no further concerns; this item is closed.

(Open) Violation (50-423/83-14-02): ASME Code radiographic film density problems. The NRC inspector viewed the remaining 50 vendor weld radiographic films and associated documentation. The radiographic film quality was poor in that the films were scratched and crimped, and showed evidence of finger prints, dirt and smudges on all the radiographs viewed. The above conditions have caused loss of radiographic detail. Film density still remains a problem.

The licensee and the NRC agreed to the resolutions for 50 vendor welds. Since the initial NRC Van inspection of August 1983, the licensee has performed several radiographic film viewing sample plans that ultimately ended up with a 100% radiographic film viewing of Tubeco's shop welds. The licensee identified and re-radiographed some 600-700 welds due to ASME radiographic film problems. These radiographs are considered ASME site final films. However, the inspector noted that the licensee did not have the re-radiographs reviewed by the independent ANI. The licensee discussed this problem with the ANI and a comprehensive radiographic review by the ANI is now in progress.

This item remains open pending completion of the film reviews.

#### 5. Ultrasonic Demonstration

The utility performed an ultrasonic test demonstration that was witnessed by the NRC. The purpose of this demonstration was to address the following concerns:

- (1) The ability of ultrasonic waves to penetrate cast stainless steel material.
- (2) The adequacy of the ultrasonic calibration block for ultrasonic testing of cast stainless steel material.

Three representative samples of Millstone centrifugally cast piping containing 15% through wall depth fatigue cracks were UT examined with defects verified. Another UT demonstration on weld LP-EC2-SWB was performed with results as follows: ID reflectors were detected intermittently, 360°, adjacent to the weld. The reflector (indication) appeared to be a counterbore condition. A geometric plot of this reflector was made, and the reflector was found to be approximately 1 1/4" from the weld root area. The ID of the counterbore was previously blended smooth, with the machine edges rounded out. The inspector believes that due to transducer wobble, beam spread and, redirection of the beam in the cast stainless steel material, this reflector was incorrectly reported off location by 9°. It appeared that the recorded reflector was probably due to ID surface irregularities originating at the weld root. The 9° shift represented a difference of 1 1/2" from the actual area (weld root) to the recorded reflector, causing problems with reported information. However, the inspector felt that a significant indication could have been detected using the licensee's method of ultrasonic examination. Exact sizing and location of indications still would remain a problem when performing UT on this type of material.

A single calibration block, identified as UT-7 (3.28" thickness), was used for all main coolant loop ultrasonic examinations. The test block material is SA-351, grade CF8A, and was manufactured from a cast elbow. A surface check was performed on the calibration block (125 RMS) and also on the required examination area of the piping (32RMS). An attenuation comparison was performed by the licensee between the calibration block and a pipe section. A similar comparison between the block and a pipe elbow section showed that the attenuation was essentially equal. The centrifugally cast pipe attenuation was 6 db greater than the calibration block (cast elbow material) thus in this case providing less sensitivity to detecting indications in the pipe. The range of thickness for all components examined was 2.1" to 3.81", as reported on the licensee's ultrasonic examinations records. Because of the difference between the thickness of the calibration block and the pipes examined, it appeared that the thickness requirement of ASME section XI Appendix III, Paragraph III - 3410 had not been met. This problem is unresolved pending a review of the licensee's basis for use of the calibration block. (423/85-22-04)

#### 6. Review of NDE Procedures:

The following NDE procedures were reviewed to verify their technical adequacy and conformance to industry Codes and Standards:

STONE & WEBSTER

QAD-9.32 Rev. A      Liquid Penetrant Examination  
QAD-9.41 Rev. B      Radiographic Examination  
QAD-9.52 Rev. C      Ultrasonic thickness measurement

TUBECO INC.

T-405 Rev. 2

No violations were identified.

7. Attachments:

Attachment No. 1 is a tabulation of specific items examined and results.  
Attachment No. 2 is a list of specific radiographs reviewed and results.  
Attachment No. 3 is a list of specific documentation packages reviewed.  
Attachment No. 4 is a list of TUBECO Radiograph Resolutions.

8. Unresolved Items

Unresolved items are matters about which more information is necessary to determine whether it is a violation, a deviation, or acceptable. Unresolved items are discussed in paragraphs 3 and 5.

9. Exit:

An exit interview was held on June 14, 1985, with members of the licensee's staff. The scope and findings of this inspection were summarized. No written material was provided to the licensee during this inspection.

## INDEPENDENT MEASUREMENT PROGRAM

SITE: Millstone Unit #3

DATE: 6/3 thru 6/14/85 Page 1 of 4

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
FW1 RHS-502	1	N/A	N/A	N/A	N/A	ACC	N/A	N/A	N/A	ACC	
FW7 RHS-7	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	*
SW-10 RHS-8-1	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	*
FW27 RCS-LP3	1	N/A	N/A	N/A	N/A	ACC	N/C	ACC	N/A	ACC	*
SWC CHS-44-1-2	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	*
FW13 CHS-15	1	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	
FW2 SIL-157	2	N/A	N/A	N/A	N/A	ACC	N/A	N/A	N/A	ACC	
FW 33-1 SIL-160	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	
SW-C SIL-7-4	1	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	
FW-5 SIL-10	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	
SW-C SIL-10-3	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	
FW-4 SIL-2	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	
FW2 RSS-7	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	*
SW-B RSS-7-3	2	N/A	ACC	ACC	N/A	REJ	N/A	ACC	N/A	ACC	Elongated indica- tion at Read Point 26

Attachment #1

## INDEPENDENT MEASUREMENT PROGRAM

DATE: 6/3 thru 6/14/85 Page 2 of 4

SITE: Millstone Unit #3

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	IFERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
SWE SIL-2-4	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	
FW7-1 RSS-8	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	*
SWJ RSS-8-2	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	*
FW2 RSS-9	2	N/A	ACC	ACC	N/A	REJ	N/A	ACC	N/A	ACC	Elongated Indica- tion At Read Point 7-14 Approx. # 1 inch.
SWC RSS-9-1	2	N/A	ACC	N/A	N/C	ACC	N/A	ACC	N/A	ACC	
SWE MSS-25-1-5	2	N/A	N/A	N/A	N/C	ACC	N/A	N/A	N/A	ACC	
FW-1-1 MSS-502	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	*
SWD MSS-32-1	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	*
FW3 FWS-14	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	*
FW-6-BM FWS-13	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	*
SW-H FWS-13742	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	*
FW-3 SIL-2	2	N/A	ACC	ACC	N/A	ACC	N/A	N/A	N/A	ACC	*
SW-C SIL-2-2	2	N/A	ACC	N/A	N/A	ACC	N/A	N/A	N/A	ACC	*
FW4 MSS-504	2	N/A	N/A	N/A	N/A	ACC	N/A	N/A	N/A	ACC	

Attachment #1

## INDEPENDENT MEASUREMENT PROGRAM

DATE: 6/3 thru 6/14/85 Page 3 of 4

SITE: Millstone Unit #3

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
FW28 QSS-3	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	*
SWG QSS-3-1	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	*
FW-1 QSS-2	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	*
SWD QSS-2-2	2	N/A	ACC	ACC	N/A	ACC	H/C	ACC	ACC	ACC	*
FW41 QSS-1	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	*
SWC QSS-1-2	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	ACC	ACC	*
FW-7C-M FWS-17	2	N/A	N/A	N/A	N/A	N/A	ACC	N/A	N/A	ACC	Geometric Reflector Intermit- tant 360°
FW28-1 CCD-523-4	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	
FW29-1 CCD-523-4	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	
FW-30-1 CCD-523-4	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	
FW31-1 CCD-523-3	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	
FW-1 SIH-12-1-2	2	ACC	ACC	N/A	N/A	N/A	N/A	N/A	ACC	ACC	
FW-7 SIH-12-1-2	2	N/A	ACC	N/A	N/A	N/A	N/A	N/A	ACC	ACC	
FW-1 SIH-7-4	2	ACC	ACC	N/A	N/A	N/A	N/A	ACC	ACC	ACC	

Attachment #1

## INDEPENDENT MEASUREMENT PROGRAM

DATE: 6/3 thru 6/14/85 Page 4 of 4

SITE: Millstone Unit #3

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
FW2 SIH-7-4	2	N/A	ACC	N/A	N/A	N/A	N/A	ACC	ACC	ACC	
FW3 SIH-7-4	2	ACC	ACC	N/A	N/A	N/A	N/A	ACC	ACC	ACC	
FW4 SIH-7-4	2	N/C	ACC	N/A	N/A	N/A	N/A	ACC	ACC	ACC	
FW3 SIL-5-1	2	N/A	N/A	N/A	N/A	N/A	N/C	ACC	N/A	ACC	
FW5 SIL-9-T	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	
SWB SIL-9-3	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	
FW-7 SIH-12-4	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	
SWB SIH-12-4	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	
FW5 SIL-13	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	

\* Comparison of Rt Film Made.

A - ARTIFACTS  
S - SURFACE  
CC - CONCAVITY  
CV - CONVEXITY

[illegible]

C - CRACK  
SL - SLAG  
P - POROSITY  
T - TUNGSTEN

LF - LACK FUSION  
IP - INADEQUATE PENETRATION  
LI - LINEAR INDICATION  
UI - UNFUSED INSERT

A - ARTIFACTS  
S - SURFACE  
CC - CONCAVITY  
CV - CONVEXITY

[illegible]

C - CRACK  
SL - SLAG  
P - POROSITY  
T - TUNGSTEN

LF - LACK FUSION  
IP - INADEQUATE PENETRATION  
LI - LINEAR INDICATION  
UI - UNFUSED INSERT

A - ARTIFACTS  
S - SURFACE  
CC - CONCAVITY  
CV - CONVEXITY

[illegible]

A - ARTIFACTS  
S - SURFACE  
CC - CONCAVITY  
CV - CONVEXITY

[illegible]



C - CRAC  
SL - SLAG  
P - POROSITY  
T - TUNGSTEN

LF - LACK FUSION  
IP - INADEQUATE PENETRATION  
LI - LINEAR INDICATION  
UI - UNFUSED INSERT

A - ARTIFACTS  
S - SURFACE  
CC - CONCAVITY  
CV - CONVEXITY

[illegible]

# REVIEW OF DOCUMENTATION PACKAGES

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SITE: Millstone Unit #3  
Docket No. 50-423

LINE NUMBER	CLASS NUMBER	REVIEW	COMMENTS
RHS-502	FW-1	ACC	N/A
RHS-7	FW-7	ACC	N/A
RHS-8-1	SW-1D	ACC	N/A
RCS-LP3	FW-27	ACC	N/A
CHS-15	SW-C	ACC	N/A
GJS-15	FW-13	ACC	N/A
SIL-13	FW-5	ACC	N/A
SIL-157	FW-2	ACC	N/A
SIL-160	FW-33-1	ACC	N/A
SIL-7-4	SW-C	ACC	N/A
SIL-10	FW-5	ACC	N/A
SIL-10-3	SW-C	ACC	N/A
SIL-2	FW-4	ACC	N/A
SIL-2-4	SW-E	ACC	N/A
SIL-2	FW-3	ACC	N/A
SIL-2-2	SW-C	ACC	N/A
SIL-9-1	SW-1D	ACC	N/A
SIL-9-3	SW-1D	ACC	N/A
SIH-12	FW-7	ACC	N/A
SIH-12-4	SW-B	ACC	N/A
SIH-1	FW-2	ACC	N/A

ATTACHMENT #3

REVIEW OF DOCUMENTATION PACKAGES

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SITE: Millstone Unit #3  
Docket No. 50-423

LINE NUMBER	CLASS NUMBER	REVIEW	COMMENTS
SIH-1-1	SWG	ACC	N/A
QSS-3	FW-28	ACC	N/A
QSS-3-1	SWG	ACC	N/A
QSS-2	FW-1	ACC	N/A
QSS-2-2	SW-D	ACC	N/A
QSS-1	FW-41	ACC	N/A
QSS-1-2	SW-C	ACC	N/A
RSS-7	FW-2	ACC	N/A
RSS-7-3	SW-B	ACC	N/A
RSS-8	FW-7-1	ACC	N/A
RSS-8-2	SW-J	ACC	N/A
RSS-9	FW-2	ACC	N/A
RSS-9-1	SW-C	ACC	N/A
MSS-25-1-5	SW-E	ACC	N/A
MSS-502	FW-1-1	ACC	N/A
MSS-32-1-5	SW-C	ACC	N/A
FWS-14	FW-3	ACC	N/A
FWS-13	FW-6-BM	ACC	N/A
FWS-13-7-4	SW-H	ACC	N/A

ATTACHMENT 3

SUMMARY OF TUBECO SUPPLIED RADIOGRAPHS WHERE WELD DENSITY  
EXCEEDS PENETRAMETER DENSITY BY MORE THAN 30%

<u>PIPE SPOOL NUMBER</u>	<u>SHOP WELD</u>	<u>RESOLUTION</u>
3MSS-25-1-5-2	D	Reshoot
32-1-5-2	C	Reshoot completed
35-2-5-2	A	End prep now MSS-35 FW-1
35-1-5-2A	B	NRC review and accepted
25-1-5-2	E	Reshoot completed
30-1-5-2	C	Reshoot
31-1-5-2	C	Reshoot
32-1-5-2	E	Reshoot
25-1-5-2	B	Reshoot
3FWS-13-7-4-2	H	Reshoot completed
15-7-4-2	H	Reshoot
17-6-4-2	H	Reshoot
22-6-1-2	D	Re-examined to meet code compliance
3 SIH-4-6-2-2	K	Weld deleted per EDCR P-P-3070
3 RHS-4-2-4-2	D	Reshoot
4-2-4-2	E	Reshoot
7-4-4-2	J	Reshoot
7-6-4-2	C	Reshoot
3 FWA-9-3-4-2	AA	Class 3 - MP inspect
13-4-4-2	H	Class 3 - MP inspect
14-1-4-3	D	Weld deleted per CRN 019
3 CHS-10-3-2-2	B	Not required - Typo on N&D 10450
57-1-2-2	B	Reshoot
9-2-2-2	D	Reshoot
44-1-2-2	C	Reshoot completed
44-1-2-2	B	Reshoot
15-3-1-1	B	Weld deleted per Iso
3 QSS-3-3-4-	D	Reshoot
3 RSS-10-3-4-2	D	Reshoot
12-1-4-2	E	Reshoot

<u>PIPE SPOOL NUMBER</u>	<u>WELD</u>	<u>RESOLUTION</u>
3 SIL-2-2-3-2	C	Reshoot
2-4-2-2	D	Joint was reshot - Sat. by TUBECO
7-1-1-2	B	Reshoot
8-2-4-2	K	Reshoot
8-2-4-2	M	Reshoot
8-3-4-2	G	Reshoot
10-3-4-2	H	Reshoot
12-1-4-2	J	Reshoot
3 CCP-1-4-3-3	D	Class 3 - MP inspect
5-6-2-3	B	Class 3 - MP inspect
6-1-2-2	C	Reshoot
7-3-2-3	G	Class 3- MP inspect
8-1-2-3	C	Class 3 - MP inspect
8-3-2-3	E	Class 3 - MP inspect
8-3-2-3	F	Class 3 - MP inspect
3 RCS-SL3	E	NRC reviewed and accepted
3 RCS-SL3	H	NRC reviewed and accepted
LP1-CL2	F	NRC reviewed and accepted
LP2-CL2	F	NRC reviewed and accepted
LP4-CL2	E	NRC reviewed and accepted