

## MEMORANDUM


**united engineers** S CONSTRUCTORS INC

JN 3 '82 D.C.C.

No. 9763.006

R. Reliability &amp; Quality Assurance

J. J. Parisano\* - 06U6

JM: D. E. McGarrigan\* - 14U6

OFFICE: Philadelphia

P.O. 248-51

DATE: April 16, 1982

(Reissued) May 28, 1982 - CM 91

COPIES: A.M. Ebner - 06U0

D.H. Rhoads - 06U0

J.B. Silverwood/ - 14U6

R.H. Leonard

\*C. Kelly - 06U6

\*R.C. Lesnefsky - 14U6

J.N. Babcock - 14U4

J.P. Cannon - 14U3

D.J. Reinert - 14U3

D.C. Lambert - Site

Subject: Public Service Company of New Hampshire  
 Seabrook Station - Units 1 and 2  
 Penetration/Plate Welds  
 Pullman Higgins NCR 2117

As per our meeting of April 15, 1982 I have summarized the background information, technical justification and proposed resolutions for the questions on the containment penetration/plate welds. These questions and the subject NCR required extensive code review and resulted in the following:

1) Code Boundary Between ASME Section III Division 1 and Division 2.

The Code boundary is defined by the UELC Drawing 9763-F-805578. The weld between the penetration sleeve and plate performs a containment function providing for the process piping to penetrate containment. At the option of the Division 2 designer, this weld was originally designed to be welded to Class 2 Division 1 rules. However, this Division 1 work is part of containment not part of the piping system. Pullman-Higgins must complete a separate N-5 Code Data Report for this weld which will be included in the Construction Report for the Containment.

2) Subsection NE Or Subsection NC For Penetration/Plate and Plate/Pipe Welds.

The penetration/plate weld joint configuration provides a full penetration corner weld. The plate/pipe weld is a partial penetration weld. Both joint designs were selected to provide the structural integrity required for these joints as well as being ASME Code approved joint configurations. These joints can be made under the requirements of either subsection as allowed by Division 2. The present design calls for Class 2 welds to Subsection NC. This Subsection requires radiography of the joint. Attempts to get meaningful radiography have failed. Subsection NC does not allow the substitution of ultrasonics or magnetic particle methods for the penetration/plate welds. The design will be changed to call out the weld as Class MC, Subsection NE. Pullman-Higgins does have an MC Certification and Subsection NE does allow the use of alternate NDE methods.

3) Nondestructive Examination of the Plate Material and Finished Welds.

Subsection NC requires Magnetic Particle Examination prior to welding of weld edge preps in material joints 2" thick and over. The change to subsection NE will require Magnetic Particle Examination of plate material greater than  $\frac{1}{2}$ ". This change will affect all the mechanical penetration plates because they are  $\frac{3}{4}$ ", 1", and 2" thick. However, the material is SA 516 GR60 supplied with Ultrasonic examination. Ultrasonic examination is used by the material supplier to detect lamellar defects. The Code's reason for specifying magnetic particle examination of the weld joint prep was to detect lamellar type defects. The NCR should be dispositioned "Accept-as-is" based on the substitution of ultrasonic for magnetic particle examination. In addition, Subsection NE requires that the final welds and all exposed cut edges be Magnetic Particle examined. This will be done. The NDE required for acceptance of the penetration/plate weld is Ultrasonics, Magnetic Particle, or Liquid Penetrant. The Magnetic Particle examination will cover both material and weld requirements.

4) Impact Testing of Plate Material.

Subsection NC did not require impact testing of the plate. It was an option only required if specified in the Design Specification. Engineering did not require impacts as directed by YAEC. Subsection NE does require impact tests. Dravo who supplied the material has additional material and impact tests can be performed.

Proposed Resolution Items

- 1) UE&C change the penetration/plate and plate/pipe welds to "Class MC - Subsection NE. The penetration/plate weld is a Category C weld joint and the plate/pipe weld is a Category D weld joint.
- 2) Disposition Pullman-Higgins NCR 2117 "Accept-as-is" for all penetration plates of Unit 1. Attach this memo for technical justification. Have the Authorized Inspector and YAEC concur with this disposition. Include this NCR and the P-H N-5 Data Report in the Construction Report.
- 3) UE&C have Dravo perform Impact Test on the Plate material at the  $-25^{\circ}\text{F}$  test temperature required for the containment penetration base metal. Impact test should be done in accordance with Subsection NE requirements.
- 4) Have Pullman-Higgins perform Magnetic Particle Examination of all mechanical penetration plate welds and exposed cut edges.
- 5) Have Pullman-Higgins prepare an N-5 Code Data Report for these welds. The Structural Integrity Test will be the Containment Pressure Test at 1.15 times the design pressure as required by CC-6000 and Specification 80-1.
- 6) UE&C have Unit 2 penetration plate weld joint preps Magnetic Particle examined by Dravo or Pullman-Higgins prior to welding.

- 7) Revise Drawing 9763-I-805578, Piping System Design Specification 9763.006-248-43 (Table 2.2-15) and Containment Design Specification to define these welds as Subsection NE, Class MC.

  
D. E. McGarrigan

DEM/mc

TO: Harold Gray, M+PF

FROM: A. Cerne, Seabrook

3 pages follow

Harold,

As per our discussion today  
with Jack.

NR-QA MGR. P.H.

Tony

APPENDIX A

NOTICE OF VIOLATION

Public Service Company of New Hampshire  
Seabrook Unit 1

Docket No. 50-443  
License No. CPPR-135

As a result of the inspection conducted June 21 - July 2, 1982, and in accordance with the NRC Enforcement Policy, (10 CFR 2, Appendix C) published in the Federal Register Notice 47 FR 9987 (March 9, 1982), the following violations were identified:

- A. 10 CFR 50, Appendix B, Criterion VI requires that *MEASURES BE ESTABLISHED TO CONTROL THE ISSUANCE OF DOCUMENTS SUCH AS INSTRUCTIONS, PROCEDURES AND DRAWINGS. THESE DOCUMENTS SHALL BE DISTRIBUTED TO AND USED AT THE LOCATION WHERE THE PRESCRIBED ACTIVITY IS PERFORMED. THE PSAR, PARAGRAPH 17.1.6 STATES " . . .*

*"Each organization performing quality related activities covered by this program, including vendors and site constructors, is required to have a document control system. The system shall be defined in written procedures. It shall provide assurance that procedures, specifications, drawings and instructions including changes which prescribe activities affecting quality are reviewed for adequacy and approved for release by authorized personnel (Subsection 17.1.3), and distributed to the locations where quality related activities are performed."*

*THE PULLMAN POWER PRODUCTS DOCUMENT CONTROL PROCEDURE VI-1 PARA 1.1 SCOPE IS:*

*"To provide general instructions to assure all documents, are controlled. The requirements shall assure that documents, including revisions, are reviewed, approved and distributed to and used by personnel at the location where the activity is being performed."*

APPENDIX A

Revised March 1982 for the entire  
Circuitry Panel 2

Contrary to the above on October 1, 1982, the inspector observed revision 4 of ISO-SL-X35-01 to be in use by personnel preparing to reinstall moderate energy pipe containment vessel end plate assembly X35. While revision 5 of this ISO, prepared on September 17, 1982, was available at the weld rod issue station.

It should be noted that revision 5 arrived at the weld rod issue within four hours of reaching its last step in the chain of approval and would be expected to be in the hands of the craftsman by the next work shift. This violation is not specifically addressed to the revision 5 - revision 4 issue but rather to the failure to have measures established to control changes to documents so they are distributed to and used at the location where the prescribed activity is performed such that work done ~~performed~~ is controlled to be in conformance to those changes.

This is a Severity Level V violation (Supplement II) applicable to Docket No 50-443.

SEPTEMBER 17, 1982, WAS AVAILABLE AT THE  
WELD ROD ISSUE STATION.

IT SHOULD BE NOTED THAT REVISION 5 ARRIVED  
AT THE WELD ROD ISSUE WITHIN FOUR HOURS OF  
REACHING ITS LAST STEP IN THE CHAIN OF APPROVAL  
AND WOULD BE EXPECTED TO BE IN THE HANDS  
OF THE CRAFTSMAN BY THE NEXT WORK SHIFT.  
THIS VIOLATION IS NOT SPECIFICALLY ADDRESSED TO  
THE REVISION 5 - REVISION 4 ISSUE BUT RATHER  
TO THE FAILURE TO HAVE MEASURES ESTABLISHED  
TO CONTROL CHANGES TO DOCUMENTS SO THEY  
ARE DISTRIBUTED TO AND USED AT THE LOCATION  
WHERE THE PRESCRIBED ACTIVITY IS PERFORMED  
SUCH THAT WORK DONE ~~PERFORMED~~ IS CONTROLLED  
TO BE IN CONFORMANCE TO THOSE CHANGES.

THIS IS A SEVERITY LEVEL V VIOLATION (SUPPLEMENT II)  
APPLICABLE TO DOCKET NO 50-443.

B) 10 CFR 50, APPENDIX B CRITERION V REQUIRES  
THAT ACTIVITIES AFFECTING QUALITY SHALL BE  
PRESCRIBED BY DOCUMENTED INSTRUCTIONS, PROCEDURES  
OR DRAWINGS. THE PSAR, PARAGRAPH 17.1.5  
REQUIRES THAT "EACH ORGANIZATION IS REQUIRED TO  
PERFORM THEIR RESPECTIVE QUALITY RELATED ACTIVITIES  
COVERED BY THIS PROGRAM IN ACCORDANCE WITH  
DOCUMENTED INSTRUCTIONS, PROCEDURES OR DRAWINGS"

THE UETC ENGINEERING CHANGE AUTHORIZATION (ECA) OF MARCH 19, 1982 PROVIDES FOR CHANGE OF ASME CODE DESIGNATION FROM NC CLASS II TO CLASS MC SUBSECTION NE FOR END PLATE TO PIPE AND THRU PIPE TO END PLATE CONTAINMENT BOUNDARIES.

THE UETC LETTER OF APRIL 16, 1982 AND ITS REISSUE OF MAY 28, 1982 STATES THAT THE PENETRATION/PLATE AND PLATE/PIPE WELDS WILL BE CHANGED TO CLASS MC, SUBSECTION NE. THESE LETTERS ALSO SUMMARIZE THE EFFECT OF THE CODE DESIGNATION CHANGE ON THE WELD AND BASE MATERIAL NON DESTRUCTIVE EXAMINATION REQUIREMENTS.

CONTRARY TO THE ABOVE, THE INSPECTOR OBSERVED ON SEPTEMBER 28, 1982 THAT THE DRAWINGS AND FIELD INSTRUCTIONS APPLICABLE TO BOTH THE CONTAINMENT PENETRATION/PLATE AND PLATE/PIPE WELDS FOR CONTAINMENT PENETRATION X35 WHICH WAS BEING PREPARED FOR INSTALLATION DESIGNATED THESE WELDS AS ASME NC CLASS II.

This is a Severity Level IV violation (Supplement II).

Pursuant to the provisions of 10 CFR 2.201, Public Service Company of New Hampshire is hereby required to submit to this office within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) the corrective actions which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending this response time.

The responses directed by this notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Dated

~~ENCLOSURE~~

*Shirley D. Strout*  
Martin, Director

U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

PAGE ①

Report No. B2-12

Docket No. 50-443

License No. CFPR-135 Priority - Category A

Licensee: PUBLIC SERVICE OF NEW HAMPSHIRE  
1000 ELM ST

MANCHESTER NEW HAMPSHIRE 03105

Facility Name: SEABROOK NEW HAMPSHIRE

~~INSPECTION~~  
Meeting at: SEABROOK NEW HAMPSHIRE, - UNIT 1

~~INSPECTION~~  
Meeting conducted: SEPT 28 - OCTOBER 1, 1982

~~INSPECTORS~~  
~~NRC Personnel:~~

E. H. GRAY, REACTOR INSPECTOR

\_\_\_\_\_  
date signed

\_\_\_\_\_  
date signed

\_\_\_\_\_  
date signed

Approved by:

J. DARR, SECTION CHIEF  
MATERIALS AND PROCESSING SECTION

\_\_\_\_\_  
date signed

~~INSPECTION~~  
Meeting Summary:

~~ROUTINE UNANNOUNCED~~ INSPECTION BY THE REGIONAL BASED INSPECTOR OF  
PROCEDURES, INSTRUCTIONS, DRAWINGS RECORDS AND WORK  
ACTIVITIES RELATIVE TO REACTOR VESSEL INTERNALS AND  
CONTAINMENT ELECTRICAL  
MECHANICAL AND ACCESS PENETRATIONS. ~~AND~~

THE INSPECTION INVOLVED 28 INSPECTOR HOURS ON SITE.

RESULTS: OF THE AREAS INSPECTED, ONE VIOLATION WAS IDENTIFIED  
IN THE AREA OF DOCUMENT CONTROL.

① PERSONS CONTACTED

YANKEE Atomic Electric Company (YAEC)

- \* J. - AZZOPARDI - Quality Assurance (Q.A.) ENGINEER
- \* D. L. COVILL - LEAD CIVIL Q.A. ENGINEER
- \* R. E. GUILLETTE - Q.A. ENGINEER
- \* J. H. HERRIN - SITE MANAGER (PSNH)  
B. MISSAU QUALITY ASSURANCE
- \* W. T. MIDDLETON - QUALITY ASSURANCE SUPERVISOR
- \* W. F. MONTEITH - " " \_\_\_\_\_
- J. F. NAY - LEAD MECHANICAL Q.A. ENGINEER
- J. W. SINGLETON - FIELD Q.A. MANAGER.

UNITED ENGINEERS AND CONSTRUCTORS (UE+C)

- V. AJEMIAN - NEWINGTON STORAGE SUPERVISOR
- R. BEAUMONT - Q.A. ENGINEER.
- \* R. H. BRYANS - SITE ENGINEERING MANAGER  
CARRABBA
- J. CARRABBA - STOREROOM/PREVENTIVE MAINTENANCE SUPERVISOR
- J. GRIES - STOREROOM/PREVENTIVE MAINTENANCE INSPECTOR
- \* J. A. GRUSETSKIE - SITE ENGINEER
- \* D. C. LAMBERT - Q.A. FIELD SUPERVISOR

PULLMAN HIGGINS (P-H)

- R. DONALD - AST. Q.A. MANAGER
- R. JOHNSON - QA ENGINEERING
- A. NANCE - CHIEF FIELD ENGINEER.

USNRC

- \* R. GRAMM - RESIDENT INSPECTOR
- \* H. CERNE - SR. RESIDENT INSPECTOR

\* DENOTES THOSE PRESENT - AT THE EXIT INTERVIEW

(2)

## 2) CONTAINMENT PENETRATIONS

THE INSPECTOR SELECTED SAMPLES OF ELECTRICAL, PIPING AND ACCESS PENETRATIONS, OBSERVING BOTH WORK IN PROGRESS AND COMPLETED WORK. PORTIONS OF THE SITE PSAR, DRAWINGS, PROCEDURES, INSTRUCTIONS AND DOCUMENTS WERE REVIEWED.

THE ATTACHMENT WELD OF ELECTRICAL PENETRATION 1EDEM113-H37 AS DETAILED ON WESTINGHOUSE DRAWING FOR SPECIFICATION NUMBER E-40144 DATED 3-30-81 LACKS THE DEPTH OF THE COUNTERBORE IN THE BULKHEAD EXTENSION. SIMILAR <sup>UNINSTALLED</sup> ELECTRICAL PENETRATIONS TO OBSERVE THIS COUNTERBORE DEPTH WERE NOT AVAILABLE FOR INSPECTION. AS THE PENETRATION TO BULKHEAD EXTRINSIC WELD ROOT GAP MOST LIKELY WOULD BE DETERMINED BY THE COUNTERBORE DEPTH ON WELD JOINT FITUP THE INSPECTOR ASKED TO SEE THE DRAWING DEFINING THIS DIMENSION. - THIS ITEM IS UNRESOLVED PENDING LICENSEE SUBMITTAL OF A DRAWING OR DRAWINGS SHOWING THE COUNTERBORE DEPTH, ITS EFFECT ON <sup>WELD</sup> JOINT ROOT GAP

3

A REVIEW OF QUALITY RECORDS OF SIMILAR  
ACTIVITIES AS NECESSARY TO ASSURE THAT  
OR WILL BE  
C REQUIRED WELD PENETRATION HAS BEEN ACHIEVED  
(143/B2-12-01)

HIGH ENERGY PIPING PENETRATIONS WERE  
OBSERVED IN POSITION AND THE DOCUMENTATION  
FIELD HEAD TYPE  
X-13 INCLUDING DRAWINGS,  
WELD PROCESS INSTRUCTIONS, ~~AND~~ NON DESTRUCTIVE  
TESTING AND INSPECTION REPORTS WERE  
REVIEWED.

NO VIOLATIONS WERE IDENTIFIED

MODERATE ENERGY PIPING PENETRATIONS WERE  
OBSERVED IN POSITION AND WITH INSTALLATION  
WORK IN PROGRESS. THE CONTAINMENT PENETRATION  
TO END PLATE AND END PLATE TO PIPE ASSEMBLY  
IDENTIFIED AS X-35 AND RELEVANT DRAWINGS.  
WELD PROCESS INSTRUCTIONS AND INSPECTIONS WERE  
REVIEWED BY THE INSPECTOR.

THE FOLLOWING VIOLATIONS AS NOTED IN APPENDIX A  
WERE OBSERVED:

(4)

THE UETC ENGINEERING CHANGE AUTHORIZATION (ECA) DATED 3/19/82 CHANGING THE ASME CODE CLASSIFICATION OF THESE WELDS FROM MC, CLASS II TO SUBSECTION NF, CLASS MC HAD NOT BEEN IMPLEMENTED. THIS REVISION AFFECTS THE NONDESTRUCTIVE EXAMINATION OF ~~BOTH~~ THE THE BASE MATERIALS AND FINISHED WELDS. THIS IS A VIOLATION OF 10 CFR 50, APPENDIX B CRITERION VI, "DOCUMENT CONTROL." (443/82-12-02)

THE DRAWING AND INSTRUCTIONS AVAILABLE TO THE CRAFTSMAN ON 10/1/82 AT THE WORK AREA DID NOT INDICATE CHANGES MADE ON THE ASSEMBLY DETAILS ~~BY~~<sup>BY</sup> THE REVISION TO DRAWING ISO-SL-X35-01 MADE ON 9/17/82 AND RELEASED ON 10/1/82. THIS VIOLATION IS ADDRESSED TO THE PROBLEM OF NOT HAVING MEASURES ESTABLISHED TO CONTROL CHANGES SO THE CHANGES WILL BE USED AT THE LOCATION WHERE THE ACTIVITY IS PERFORMED. THIS IS A VIOLATION OF 10 CFR 50, APPENDIX B, CRITERION V, "INSTRUCTIONS, PROCEDURES AND DRAWINGS." (443/82-12-03)

THE INSPECTOR INFORMED LICENSEE SITE MAINTENANCE AND QA PERSONNEL DURING THE OCTOBER 1, 1982 EXIT INTERVIEW OF THESE VIOLATIONS.

(5)

THE PERSONNEL ACCESS PENETRATION IDENTIFIED AS IRWIN P2030-1979, SERIAL # 32704 AND SHOWN ON DRAWING E90, CONTRACT 14691 WAS OBSERVED IN POSITION. NO WORK WAS IN PROGRESS ON THIS ACCESS PENETRATION. NO VIOLATIONS WERE IDENTIFIED.

### 3) REACTOR VESSEL INTERNALS (RVI)

INSTALLATION OF THE REACTOR VESSEL INTERNALS HAS BEEN SUBLET TO THE NUCLEAR INSTALLATION SERVICES COMPANY (NISCO) ALTHOUGH AT INSTALLATION OF INTERNALS HAD NOT ACTUALLY STARTED BY THE DATE OF THIS INSPECTION.

THE INSPECTOR REVIEWED THE FOLLOWING NISCO PROCEDURES AND INSTRUCTIONS APPLICABLE TO RVI INSTALLATION.

Q.A. MANUAL, REVISION H OF 5/28/81 PER ASME SECTION III  
E.S. No. 56. WELDING FILLER METAL CONTROL PROCEDURE  
E.S. No. 100-1. MAGNETIC PARTICLE EXAMINATION PROCEDURE.  
E.S. No. 100-2. LIQUID PENETRANT EXAMINATION PROCEDURE  
E.S. No. 100-5. VISUAL INSPECTION OF WELDS.

E.S. No. 116-1. QUALIFICATION AND CERTIFICATION OF  
NON DESTRUCTIVE EXAMINATION PERSONNEL.

E.S. No. 116-2. QUALIFICATION AND CERTIFICATION OF  
INSPECTION PERSONNEL.

E.S. No. 137. PART 21 PROCEDURE.

E.S. No. 140. CALIBRATION AND CONTROL OF  
MEASURING AND TEST EQUIPMENT.

E.S. No. 300. GENERAL WELDING PROCEDURE.

NO POTENTIAL VIOLATIONS WERE IDENTIFIED.

THE INSPECTOR VISITED THE REACTOR VESSEL  
INTERIOR OBSERVING THE ENTRANCE CONTROL  
AND PRESENT FAVORABLE CONDITION OF THE  
VESSEL INTERIOR.

NO VIOLATIONS WERE IDENTIFIED.

REACTOR VESSEL INTERNALS INCLUDING THE REACTOR HEAD,  
CORE BARREL <sup>AND</sup> CONTROL ROD DRIVE MECHANISMS  
WERE OBSERVED IN STORAGE. INTERNALS WERE  
LOCATED BOTH ON SITE AND OFF SITE AT  
NEWINGTON, N.H. RECORDS OF PERIODIC INSPECTIONS

7

IN STORAGE INSPECTIONS UNDER CONTROL OF THE PREVENTIVE MAINTENANCE SUPERVISOR WERE OBSERVED AND REVIEWED. THE ACTUAL STORAGE CONDITIONS OF TEMPERATURE, HUMIDITY AND CLEANLINESS WERE OBSERVED AND COMPARED TO THE MANUFACTURERS RECOMMENDED STORAGE CONDITIONS.

NO VIOLATIONS WERE IDENTIFIED.

#### 4) SITE TOUR

THE INSPECTOR OBSERVED OTHER WORK AND WORK ACTIVITIES IN PROGRESS AROUND THE SITE INCLUDING:

ASME CLASS I AND CLASS II PIPE STORAGE HANDLING, END PREPARATION, FITUP AND WELDING WERE OBSERVED AND A SAMPLE OF DOCUMENTS CONTROLLING THE WORK WAS REVIEWED. THE INSPECTOR INTERVIEWED WELDERS AND OTHER CRAFTSMEN CONCERNING TASKS IN PROGRESS.

NO VIOLATIONS WERE IDENTIFIED.

### 5) UNRESOLVED ITEMS

UNRESOLVED ITEMS ARE MATTERS ABOUT WHICH MORE INFORMATION IS REQUIRED IN ORDER TO ASCERTAIN WHETHER THEY ARE ACCEPTABLE ITEMS, VIOLATIONS OR DEVIATIONS. AN UNRESOLVED ITEM DISCLOSED DURING THE INSPECTION IS DISCUSSED IN PARAGRAPH 2.

### 6) EXIT INTERVIEW

AN EXIT INTERVIEW WAS HELD ON OCTOBER 1, 1982 WITH MEMBERS OF THE LICENSERS STAFF AS DENOTED IN PARAGRAPH 1. THE INSPECTOR DISCUSSED THE SCOPE AND FINDINGS OF THE INSPECTION.

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FUEL OIL  
STORAGE  
TANK

FIRE PROTECTION  
PUMP HOUSE  
& TANKS

GATEHOUSE

PLANT ROAD

HEATER BAY

TURBINE RM.

DEM.  
WATER &  
COND.  
STOR.

ADMINISTRATIVE  
BLD'G

13.8 KV. SW.  
GR. ROOM

MAKE-UP  
VENTILATION  
AIR INTAKE

DIESEL  
GEN.  
BLD'G.

CONTROL  
BLD'G.

UNIT #2

CONTAINMENT  
#2 BLD'G.

FUEL  
STOR.  
BLD'G.

DIESEL  
GEN.  
BLD'G.

CONT.  
BLD'G.

REFUELING  
WATER

REFUELING  
WATER

PRIM. WATER

PRIM.  
AUX.  
BLD'G.

WASTE  
PROC.  
BLD'G.

TRUCK  
LOADING AREA

R.R.

COOLING TOWER

RETAINING

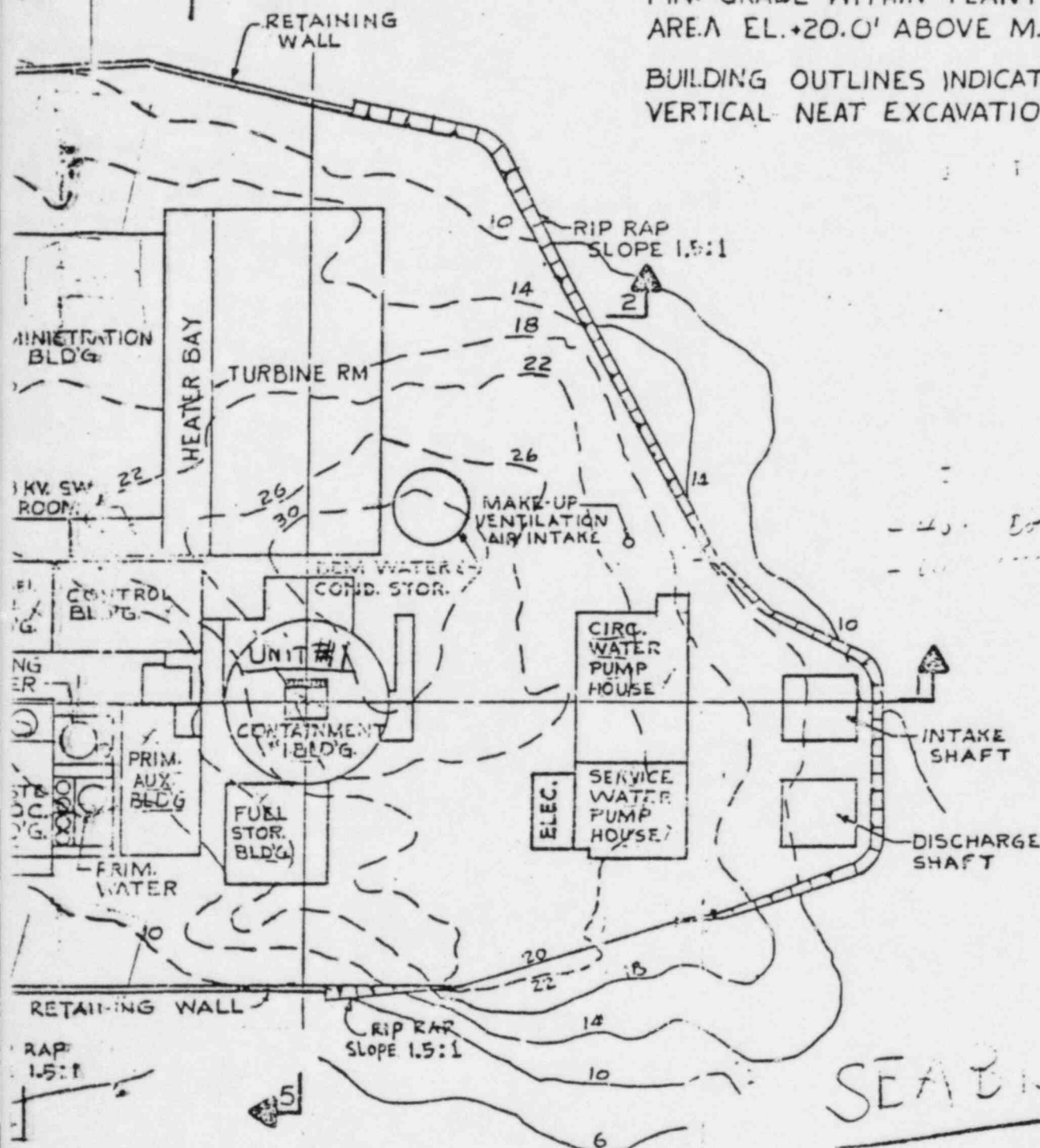
RIP RAP  
SLOPE 1.5:1

PLAN OF EXCAVATION & FIN

SCALE: 0 25 50 75 100 200 300

# NOTES

- INDICATES UNDISTURBED GRADES BEYOND PLANT AREA
- INDICATES EXISTING GRADES WITHIN PLANT AREA
- FIN. GRADE WITHIN PLANT AREA EL.+20.0' ABOVE M.S.L.
- BUILDING OUTLINES INDICATE VERTICAL NEAT EXCAVATION



N # FINISH GRADE

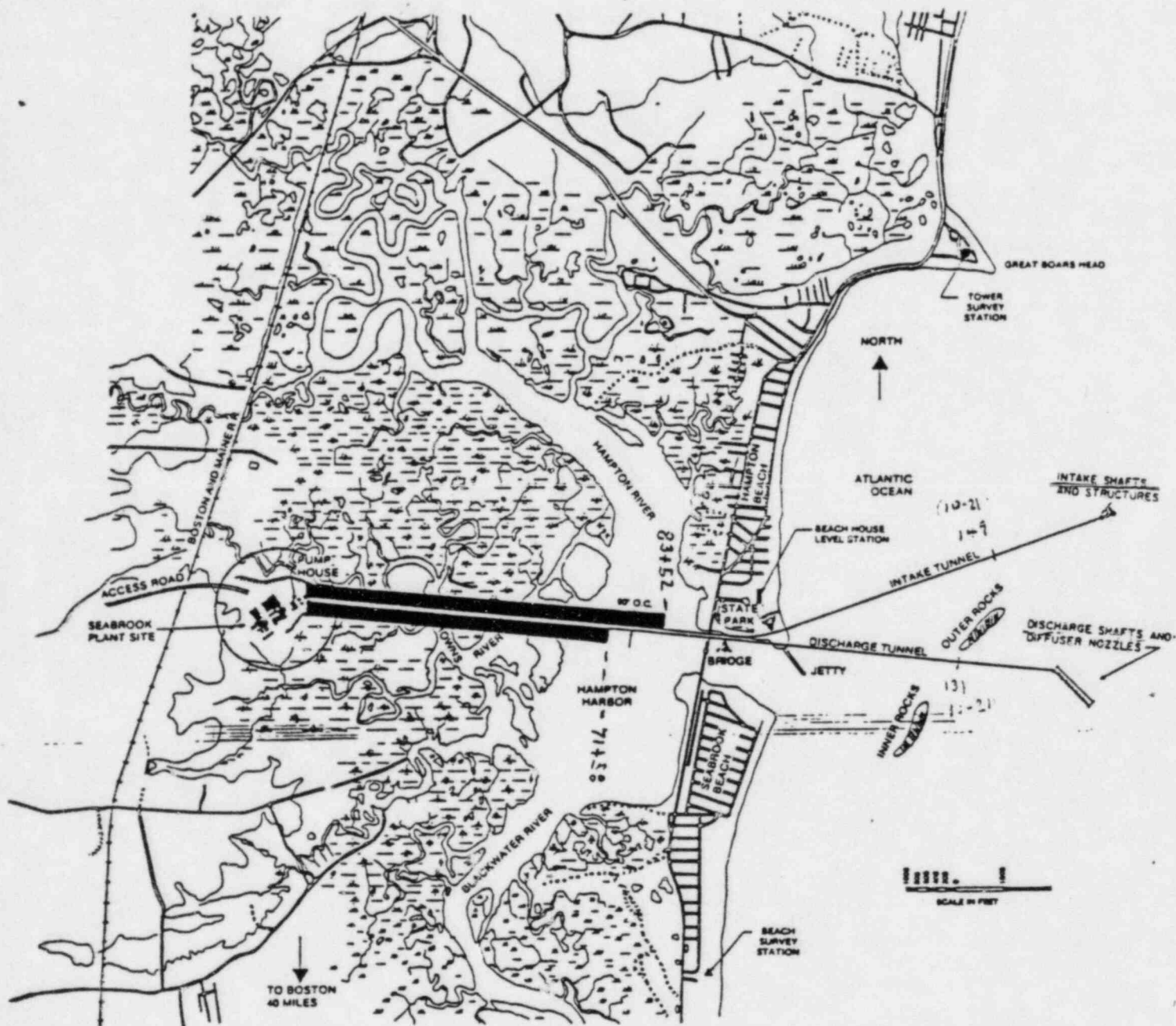
0 100 200 300 400 500

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE  
SEABROOK STATION

Preliminary Safety Analysis Report

PLAN OF EXCAVATION & FINISH GRADE

TUNNEL PROGRESS  
WEEK ENDING 1-19-1980



Oct 21, 80 — 149+00  
PLAN-SEABROOK STATION  
CIRCULATING WATER TUNNEL & SHAFT SYSTEM  
April 11, 80 105+00 Intake Tunnel

131+00  
93+00  
Discharge Tunnel

Tunnel Station	83+52		71+58	
	This Week	To Date	This Week	To Date
Distance Bored	73+50		67+50	
Average Boring Rate • Ft/Day	10		10	
TBM Utilization • Operating hours/Total hours	5		4	

May 19, 1982

SBN-276  
T.F. B 4.2.7

United States Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

Attention: Richard W. Starostecki, Director  
Division of Resident and Project Inspection

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket  
Nos. 50-443 and 50-444  
(b) USNRC Letter, dated April 19, 1982, "Combined Inspection  
Nos. 50-443/82-02 and 50/444/82-02"

Subject: Response to Inspection Nos. 50-443/82-02; 50-444/82-02

Dear Sir:

In response to the violation, which you reported in Reference (b), PSNH offers the following:

NRC Notice of Violation: (443/82-02-02)

10 CFR 50, Appendix B, Criterion IX and the Seabrook Station PSAR require that special processes, including welding and non-destructive testing, be controlled using qualified procedures in accordance with applicable codes. The applicable editions of the ASME Boiler and Pressure Vessel Code, Sections III and IX, specify respectively (1) magnetic particle examination (MT) of weld edge preparation surfaces in material two inches thick or more and (2) welding procedure qualification for impact required material less than 5/8 inch thick, using a test coupon representing the minimum thickness to be welded.

Contrary to the above, as of March 19, 1982, welding had been accomplished on containment piping penetrations (sleeve to end-plate closure) with (1) MT not performed on the weld edge preparation of certain two-inch thick end-plates and (2) a welding procedure (IT12-III-1-OB-12) not qualified to the minimum thickness listed in its thickness range for impact required material.

This is a Severity Level IV Violation (Supplement II).

8206070395

Response:

Corrective Action Taken and Results Achieved

Due to the different provisions of ASME Codes, year and addenda, utilized as a basis for design, shop fabrication, and installation (i.e., the 1971 code for design, the 1974 code for shop fabrication, and the 1977 code for installation) inappropriate Nondestructive Examination (NDE) and impact test requirements for material and fabrication of the affected components were specified by the designer.

The design specifications and appropriate drawings are presently in the process of being revised to properly define the required code boundary limits and classification.

Impact tests will be performed as required by code and weld procedures are in the process of being properly qualified to the required code provisions.

Total corrective action is scheduled to be completed by July 15, 1982.

Notice of Violation: (443/82-02-04)

10 CFR 50, Appendix B, Criterion III and the Seabrook Station PSAR require that the appropriate quality standards be specified and the applicable design criteria be translated into drawings and procedures. The applicable editions of the ASME, Boiler & Pressure Vessel Code, Section III, Table XVII-2452.1-1 and AWS Code D1.1, Table 2.7 specify minimum fillet weld sizes for joining members.

Contrary to the above, as of February 26, 1982, the design criteria for fillet weld sizes specified on several UE&C Drawings (e.g.: F104038) governing pipe whip restraint installation were incorrect in detailing undersized welds with respect to either ASME, Section III or AWS requirements. Installation of certain pipe whip restraints (e.g.: PW-203-5) to incorrect weld criteria had been completed and accepted by quality control inspection personnel.

This is a Severity Level IV Violation (Supplement II).

Response:

Corrective Action Taken and Results Achieved

As a result of this inspection, UE&C initiated an engineering review of all pipe whip restraint drawings and analysis. This review resulted in the following determinations:

- a) Fillet weld sizes were based on stress requirements only and AISC and ASME minimum weld size requirements had not been introduced.
- b) Forty-two undersize fillet welds had been specified in the design drawings. Thirty-seven configurations of pipe whip restraints are involved, from a total of one hundred and twelve pipe whip restraints.

UE&C, the designer, has initiated Engineering Change Request (ECA) NO. 19/0289A which listed the welds identified above and requested that the installation contractor reinspect the one hundred and twelve pipe whip restraints to determine if the weld sizes met the minimum weld size criteria of ASME and AISC. Non-conforming welds will be identified and corrected.

The reinspection is expected to be completed by May 31, 1982.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

*W. P. Johnson*  
W. P. Johnson  
Vice President

COMMONWEALTH OF MASSACHUSETTS)

)ss

MIDDLESEX COUNTY )

Then personally appeared before me, W. P. Johnson, who, being duly sworn, did state that he is a Vice President of Yankee Atomic Electric Company, that he is duly authorized to execute and file the foregoing request in the name and on the behalf of Public Service Company of New Hampshire and that the statements therein are true to the best of his knowledge and belief.

*A. L. Legendre, Jr.*

A. L. Legendre, Jr.  
My Commission Expires

Notary Public  
August 5, 1988



APPENDIX A  
NOTICE OF VIOLATION

Public Service Company of New Hampshire  
Seabrook Unit 1

Docket No. 50-443  
License No. CPPR-135

As a result of the inspection conducted February 16 - March 22, 1982, and in accordance with the NRC Enforcement Policy, 47 FR 9987 (March 9, 1982), the following violations were identified:

- A. 10 CFR 50, Appendix B, Criterion IX and the Seabrook Station PSAR require that special processes, including welding and nondestructive testing, be controlled using qualified procedures in accordance with applicable codes. The applicable editions of the ASME Boiler and Pressure Vessel Code, Sections III and IX, specify respectively (1) magnetic particle examination (MT) of weld edge preparation surfaces in material two inches thick or more and (2) welding procedure qualification for impact required material less than 5/8 inch thick, using a test coupon representing the minimum thickness to be welded.

Contrary to the above, as of March 19, 1982, welding had been accomplished on containment piping penetrations (sleeve to end-plate closure) with (1) MT not performed on the weld edge preparation of certain two-inch thick end-plates and (2) a welding procedure (IT12-III-1-0B-12) not qualified to the minimum thickness listed in its thickness range for impact required material.

This is a Severity Level IV Violation (Supplement II).

- B. 10 CFR 50, Appendix B, Criterion III and the Seabrook Station PSAR require that the appropriate quality standards be specified and the applicable design criteria be translated into drawings and procedures. The applicable editions of the ASME, Boiler & Pressure Vessel Code, Section III, Table XVII-2452.1-1 and AWS Code D1.1, Table 2.7 specify minimum fillet weld sizes for joining members.

Contrary to the above, as of February 26, 1982, the design criteria for fillet weld sizes specified on several UE&C drawings (eg: F104038) governing pipe whip restraint installation were incorrect in detailing undersized welds with respect to either ASME, Section III or AWS requirements. Installation of certain pipe whip restraints (eg: PW-203-5) to incorrect weld criteria had been completed and accepted by quality control inspection personnel.

This is a Severity Level IV Violation (Supplement II).

Pursuant to the provisions of 10 CFR 2.201, Public Service Company of New Hampshire would be required to submit to this office within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) the corrective

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## DETAILS

### 1. Persons Contacted

#### Yankee Atomic Electric Company (YAEC)

F. W. Bean, Lead Electrical QA Engineer  
D. L. Covill, Lead Civil QA Engineer  
R. E. Guillette, QA Engineer (Framingham)  
J. H. Herrin, Site Manager (PSNH)  
G. F. McDonald, Jr., QA Manager (Framingham)  
J. F. Nay, Jr., Lead Mechanical QA Engineer  
S. B. Sadosky, Lead Start-up/Test QA Engineer  
J. W. Singleton, Field QA Manager  
R. Tucker, Engineer (Framingham)

#### United Engineers and Constructors (UE&C)

R. H. Bryans, Site Engineering Manager  
T. R. Frolo, Welding Engineer  
J. A. Grusetskie, Engineering Manager Assistant  
R. A. Kountz, Welding Superintendent  
D. C. Lambert, Field Superintendent of QA  
D. E. McGarrigan, Project QA Manager (Philadelphia)  
J. J. Murphy, Area Field Engineer

#### Fischbach-Boulos-Manzi (FBM)

M. A. D'Orsay, QA Document Specialist  
D. Kester, CASP Engineer

#### Pullman-Higgins (Pullman)

R. G. Davis, Field QA Manager  
D. B. Hunt, QA Records Supervisor  
C. Scannell, Chief Field Engineer

#### Royal Insurance

J. C. Anzivino, Authorized Nuclear Inspector

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### 3. License Action on Previous Inspection Findings

(Closed) Noncompliance (443/81-09-02): Undersized welds on Steam Generator lateral supports. The inspector reviewed the content and disposition of UE&C Nonconformance Report (NCR) 1086, thru Revision 2, and correspondence between Westinghouse and YAEC regarding the weld deviations. The following actions were noted:

- engineering analysis of each undersized weld condition with acceptability based upon loading direction, allowable design stress, and structural overdesign considerations.
- evaluation of the Westinghouse QA program relative to the specific problem at Teledyne-Brown and other fabricators with corrective action emphasized at both the design and QA levels.
- determination that the deficiency did not represent a major breakdown in the QA program and that 10CFR50.55(e) reportability was not required.

The inspector evaluated the above actions and conclusions, along with supporting engineering data. A generic approach to this problem and reinspections by YAEC, UE&C, and Westinghouse personnel were noted. The inspector has no further questions on either the acceptability of field conditions or the direction of future corrective action.

### 4. Containment Piping Penetrations and Isolation Valves (Unit 1)

#### a. Containment On-Line Purge (COP) Valves

The inspector examined the condition of the two COP Valves (V1 and 4) installed in the supply and return lines outside Unit 1 containment. The UE&C design specification (248-45), Posi Seal drawings and certifications, and connecting Dravo piping spool piece drawings were all reviewed as was the FSAR chapter 3.8, governing design pressure and temperature criteria. The inspector verified proper valve actuator orientation and confirmed "active" valve requirements for all four containment isolation valves in this system.

No items of noncompliance were identified.

#### b. Containment Piping Penetrations

The inspector witnessed welding and grinding on the multiple piping penetration end plate to containment sleeve closure, governed by Pullman isometric drawing SL-X57-01. UE&C drawings were reviewed in conjunction with Regulatory Guide 1.19 and the ASME Boiler and Pressure Vessel Code, Section III to determine code boundaries and installation criteria. Paragraph 3.8.2.1C of the FSAR indicates the jurisdictional boundary between ASME III, Division 1 and 2, to be the outside face of the containment concrete, while UE&C drawings (eg: F805575) illustrate the end plate connecting weld to be the code boundary. The specific delineation of this boundary affects material requirements (impact)

and weld NDE. The inspector questioned both the specified method of NDE (UT) for the closure welds and the determination that impact requirements need not be considered.

While it is recognized that the A/E has the authority to establish code boundaries as an engineering prerogative, the results should be consistent with commitments made to the applicable editions of the ASME code. Since these closure welds are open to the containment atmosphere and essential to containment integrity, the questions raised by the inspector and the apparent inconsistency between the FSAR and drawings remain unresolved pending further analysis by the licensee (443/82-02-01).

The inspector also reviewed the welding procedure specifications (WPS) for both the end plate to sleeve closure weld (IT12-III-1-0B-12) and the piping to end plate partial penetration welds (81-III-8/1-0B-12). Supporting procedure qualification records (PQR) were examined for qualification of the WPS to essential variables of ASME, Section IX. The Dravo test reports and certifications for certain end plates (X20,21,22, and 23), each two inches thick, were compared to the material and NDE requirements of the applicable subsection of ASME, Section III.

With regard to both Section III and IX requirements, the following findings were noted:

- (1) Contrary to ASME III, NC-5130, no magnetic particle examination was performed on the weld edge preparation surfaces of three of the above four, two-inch thick end plates. All are currently installed.
- (2) Contrary to ASME IX, QW-403.6, WPS IT12-III-1-0B-12 lists a thickness range below the minimum for which it is qualified by PQR 016A in impact required material.

These items indicate a lack of control over welding of the end plate to sleeve, penetration welds. The inspector informed the licensee Site Manager, and Corporate and Field QA Managers during an exit interview on March 19, 1982 that this failure to control a welding process represented a noncompliance with regard to 10 CFR 50, Appendix B, Criterion IX (443/82-02-02).

Additionally the inspector examined material records for the liner sleeve material for several containment penetrations listed on UE&C drawing F101497. Ishikawajima-Hurima Heavy Industries (IHI) process records, material certifications, and nonconformance dispositions were spot-checked to confirm conformance to purchase and code requirements. No further items of noncompliance were identified.

## 5. Pipe Whip Restraint Installation (Unit 1)

The inspector examined the installed condition of pipe whip (PW) restraints PW-203-5 for a safety injection line. He checked welds, configuration,

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 4b and 5.

10. Management Meetings

At periodic intervals during the course of this inspection, meetings were held with senior plant management to discuss the scope and findings of this inspection.