POWER AUTHORITY OF THE STATE OF NEW YORK

10 COLUMBUS CIRCLE NEW YORK, N. Y. 10019

(212) 397-6200

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THOMAS F. McCRANN, JR.
CONTROLLER

March 20, 1979
JPN-79-16

Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Thomas A. Ippolito
Operating Reactors Branch No. 3
Division of Operating Reactors

Subject: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Inservice Inspection Report for
Second Refueling Outage

Dear Sir:

Enclosed are ten (10) copies of James A. FitzPatrick, "Inservice Inspection NIS-1 Data Report and Summary", resulting from the Fall 1978 refueling outage.

This second refueling outage inservice inspection was conducted in accordance with the ASME Boiler and Pressure Vessel Code Section XI, Inservice Inspection of Nuclear Reactor's Coolant System, 1970 edition and the Plant Technical Specification.

Very truly yours,

Paul J. Early
Assistant Chief Engineer-
Projects

A001 S 1/10 REPRO -30 ADD'L CYS

7903220 215

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner POWER AUTHORITY OF THE STATE OF NEW YORK 10 COLUMBUS CIRCLE, NEW YORK, N.Y.
(Name and Address of Owner)

2. Plant JAMES A. FITZPATRICK P.O. BOX 41 LYCOMING, N.Y.
(Name and Address of Plant)

3. Plant Unit #1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date 7/28/75 6. National Board Number for Unit 20764

7. Components Inspected

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
REACTOR VESSEL	COMBUSTION ENG.	CE 66108	N/A	20764
RPV STUDS & NUTS	COMBUSTION ENG.	PART NOS. 250-01&250-02	N/A	N/A
RECIRC. P-1A STUDS & NUTS	BYRON JACKSON	PART NOS. 2-6 & 2-10	N/A	N/A

SYSTEM	MANUFACTURER	NOMINAL PIPE SIZE	THICKNESS(t)	MATERIAL
RECIRC.	KELLOGG	28" DIA.	1.235	STAINLESS
"	"	12" DIA.	.688	
"		4" DIA.	.351	
CONTROL ROD DRIVE	KELLOGG	3" DIA.	.300	STAINLESS
CORE SPRAY	KELLOGG	10" DIA.	.594	STAINLESS
"	"	10" DIA.	.594	CARBON
REACTOR WATER CLEAN-UP	KELLOGG	6" DIA.	.432	STAINLESS

(CON'T.)

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This form (E00029) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner POWER AUTHORITY OF THE STATE OF NEW YORK 10 COLUMBUS CIRCLE
(Name and Address of Owner) NEW YORK, N.Y.

2. Plant JAMES A. FITZPATRICK P.O. BOX 41 LYCOMING, N.Y.
(Name and Address of Plant)

3. Plant Unit #1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date 7/28/75 6. National Board Number for Unit 20764

7. Components Inspected

SYSTEM	MANUFACTURER	NOMINAL PIPE SIZE	THICKNESS(t)	MATERIAL
MAIN STEAM	KELLOGG	24" DIA.	1.219	CARBON
"	"	6" DIA.	.750	"
FEEDWATER	KELLOGG	18" DIA.	1.156	CARBON
"	"	12" DIA.	.844	"
RHR	KELLOGG	24" DIA.	1.218	STAINLESS
"	"	24" DIA.	1.218	CARBON
"	"	20" DIA.	1.125	STAINLESS

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This form (E00029) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

EBASCO SERVICES
INCORPORATED

UTILITY CONSULTANTS - ENGINEERS - CONSTRUCTORS

TWO RECTOR STREET
NEW YORK, N.Y. 10006

CABLE ADDRESS EBASCOE

INSERVICE INSPECTION PROGRAM

FOR

JAMES A FITZPATRICK NUCLEAR POWER PLANT

This document details the planned scope of examinations by Ebasco for refueling outage No. 2, including items and areas selected for examinations, examination and documentation procedures, and isometrics containing identification of all areas to be examined.

Certification and qualification of examiners, materials, and equipment will be available on site for review prior to the start of examinations.

Efforts are made to provide access to all planned examination. However due to circumstances such as excessive radiation environment or other condition which may make the examination inaccessible some variations in the examination schedule may occur. In this event substitute areas may be selected.

The program and the procedures incorporated herein require approval by the Power Authority of the State of New York and acceptance by the Authorized Inspector prior to the start of operations.

Prepared By: Daniel H. Nunez Jr. III Site Supervisor
Ebasco Services Incorporated Title

Approval: Walter Sawicki ISI Supervising Engr.
Ebasco Services Incorporated Title

PASNY Approval [illegible] [illegible]
Title

Authorized Inspector Approval: Richard L. Patch A.N.I.I.

Agency: HARTFORD STEAM BOILER INSPECTION & INSURANCE

EBASCO SERVICES
INCORPORATED

UTILITY CONSULTANTS - ENGINEERS - CONSTRUCTORS

TWO RECTOR STREET
NEW YORK, N.Y. 10006

CABLE ADDRESS EBASCOF

EBASCO PERSONNEL INVOLVED IN
PERFORMANCE OF ISI FOR J. A. FITZPATRICK
- - FALL OUTAGE 1978 - -

NAME	TYPE AND LEVEL OF CERTIFICATION		
	UT	PT	VT
W. Sawicky	III	III	-
D. Nuzzo	III	-	-
R. Paillaman	II	-	II
P. Puig	II	II	II
J. Marrs	II	-	II
G. Egner	I	-	-
N. Paul	III	III	II

EBASCO SERVICES
INCORPORATED

UTILITY CONSULTANTS - ENGINEERS - CONSTRUCTORS

TWO RECTOR STREET
NEW YORK, N.Y. 10006

CABLE ADDRESS EBASCOE

EBASCO ULTRASONIC EQUIPMENT USED
DURING ISI OF J. A. FITZPATRICK
- - FALL 1978 OUTAGE - -

INSTRUMENTS

MANUFACTURER	MODEL	SERIAL NUMBER
Krautkramer	USM2MT	975-156
Krautkramer	USM2M	777249
Sonic	FTS-MK.I	754720

TRANSDUCERS

MANUFACTURER	STYLE	SERIAL NO.	SIZE	FREQUENCY	ANGLE
Aerotech	Gamma	D04875	.5" Dia	2.25MHz	45°
Aerotech	Gamma	D05868	.5" Dia	2.25MHz	45°
Aerotech	Gamma	L17509	.5" Dia	2.25MHz	45°
Aerotech	Gamma	L17510	.5" Dia	2.25MHz	45°
KBI	Z101CR	K10120	.5" Dia	2.25MHz	0°
KBI	Z101CR	K10135	.5" Dia	2.25MHz	0°
KBI	Z103ABS	L13149	.5" X 1"	2.25MHz	45°
KBI	Z103ABS	L13151	.5" X 1"	2.25MHz	45°
KBI	Z103ABS	L13163	.5" X 1"	2.25MHz	45°
Panametrics	A104R-HD	7612	1" Dia	2.25MHz	0°
Panametrics	A1029	8754	.5" Dia	2.25MHz	0°
Sonic	73CBD	S754801	.5" Dia	5MHz	0°

I - INTRODUCTION

Inservice inspection of the James A. Fitzpatrick Nuclear Power Plant, during the fall outage of 1978, was performed in accordance with the plant technical specification and the ASME Boiler and Pressure Vessel Code Section XI, Inservice Inspection of Nuclear Reactor Coolant Systems, 1970 edition.

This report contains the program plan, the final report (including a summary of all examination data) and required certifications for equipment and personnel. The inspection methods employed were visual, surface and volumetric nondestructive examination techniques conducted in accordance with the procedures in the enclosed program plan.

Ebasco controlled documents, such as the I.S.I. Quality Assurance Manual and the Procedure for Qualification and Certification of Nondestructive Examination Personnel, were reviewed on site by PASNY representatives, the authorized Inspector and the Nuclear Regulatory Commission. A controlled copy of the I.S.I. Q.A. Manual has been issued to Mr. A. V. Sorrentino of PASNY'S Power Operations department.

II - EXAMINATION SCHEDULE

The examination schedule as listed in the program plan was provided by plant maintenance personnel to conform with routine inservice maintenance operations and to allow construction people to prepare the components for inspection a minimum of 3 to 5 work days before the scheduled examination date. The actual completion date for each system or component is noted on the Inservice Examination Checklist in Part II-A of the final report.

III - NONDESTRUCTIVE EXAMINATION PROCEDURES

In accordance with the ASME Code, Section XI, procedures for performing nondestructive examination of welds, supports and bolting were prepared and submitted for approval before the scheduled examination date. All procedures were reviewed by the Power Authority for the State of New York, the Nuclear Regulatory Commission and the Hartford Steam Boiler Inspection and Insurance Co. (the assigned authorized inspection agency). All approved revisions were incorporated and noted on the revision sheet before any examinations were performed using that procedure.

IV - EXAMINATION EQUIPMENT AND MATERIALS

A - Instruments - Ultrasonic test instruments used for volumetric examinations included the Sonic Model FTS Mark I and the Krautkramer Model USM2. All instruments were operated with a self-contained rechargeable battery using the pulse-echo mode of sound transmission. In addition to the certification records provided in Part III-A of this report, daily amplitude linearity checks were conducted to assure optimum instrument performance

at the outset of each day or the first time an instrument was used for that day. This data is also included in Part III-A.

B. Transducers - The table below lists the transducers used to perform the ultrasonic examinations.

MANUFACTURER	STYLE	SERIAL NO.	SIZE	FREQUENCY	ANGLE
Aerotech	Gamma	DO4875	.5" Dia	2.25MHz	45°
Aerotech	Gamma	DO5868	.5" Dia	2.25MHz	45°
Aerotech	Gamma	L17509	.5" Dia	2.25MHz	45°
Aerotech	Gamma	L17510	.5" Dia	2.25MHz	45°
KBI	Z101CR	K10120	.5" Dia	2.25MHz	0°
KBI	Z101CR	K10135	.5" Dia	2.25MHz	0°
KBI	Z103ABS	L13149	.5" X 1"	2.25MHz	45°
KBI	Z103ABS	L13151	.5" X 1"	2.25MHz	45°
KBI	Z103ABS	L13163	.5" X 1"	2.25MHz	45°
Panametrics	A104R-HD	7612	1" Dia	2.25MHz	0°
Panametrics	A1029	8754	.5" Dia	2.25MHz	0°
Sonic	73CBD	S754801	.5" Dia	5MHz	0°

C. Couplant - The ultrasonic couplant used for the inservice inspection was Ultragel II, supplied by Echo Laboratories. Material certification is provided in Part III-B of this report.

D. Penetrant - The liquid penetrant material used for the inservice inspection was Spotcheck, supplied by Magnaflux Corporation. Certification is provided in Part III-B of this report.

E. Calibration Blocks - Most calibration blocks used for ultrasonic examination were provided by the Power Authority for the State of New York and located on site. However, in some cases it was necessary to borrow appropriate blocks from the nearby Nine Mile Point Unit I Power Station, owned by the Niagra Mohawk Power Co. There were no drawings available for any of the calibration blocks used which often necessitated dimensional checks to assure code compliance between the actual component and the block.

V - EXAMINATION PERSONNEL

Personnel performing examinations during the inservice were qualified and certified within the guidelines recommended by the American Society for Nondestructive Testing (ASNT) in accordance with SNT-TC-1A 1968 and 1975 editions. Affirmation of personnel qualification and certification is provided in Part III-C.

VI - COMPONENT IDENTIFICATION

Components subject to nondestructive examination were identified using the drawings and isometrics in Part II-A of this report. There was no formal identification stamped on any welds and in most instances identification was performed by following systems from tagged valves and vessel nozzle markings. The only items with stamped identification were the reactor vessel closure head studs, nuts and washers.

VII - PLANT SUPPORT PERSONNEL

A. Construction - Crouse Nuclear Construction Co., contracted by the utility, was responsible for ensuring that all components subject to nondestructive examination be made accessible and if necessary, surface conditions prepared for inspection. In most instances, component preparation included at least the removal of insulation to provide sufficient access. Some welds also required minor grinding or filing when problems occurred with transducer movement or coverage. Because many components did not have stamped identification, it was exceptionally helpful to have a Crouse supervisor (assigned specifically to the ISI crew) assist in locating many of the welds and supports.

B. Radiation Protection - For the purpose of protecting personnel and achieving good radiation exposure control, it was necessary to obtain a Radiation Work Permit (RWP) for all examinations performed during the outage. Permit requests had to be submitted to Radiation Protection 12 hours before the scheduled examination. This was necessary for the following reasons: 1) to permit the Radiation Protection personnel to conduct a preliminary survey of the radiation hazards involved in the examination area, 2) to determine the type of RWP to be issued (i.e., Regular, Special, Continuing or Extended), 3) to check the qualifications of the person assigned as Leadman to verify proper radiation protection training and 4) to check radiation exposure levels and qualification status of all personnel to work on that RWP. Because all examinations were not performed in the same general area, a scheduled day's work might be issued on 3 or 4 different RWP's. It became necessary to schedule 2 days of work into 1 shift to consolidate examinations on different systems within the same physical location. In doing this, two very important things were accomplished: 1) excessive time wasted suiting-up and unsuiting in the radiation protection clothing was substantially reduced and 2) radiation exposure of examination personnel was kept to a minimum. The RWP process though time consuming, was helpful in allowing the protection technicians to apply lead blankets and special audible metering devices in high radiation level areas.

VIII - NDE METHODS AND RESULTS

A. Visual - All visual examinations were performed by direct visual contact without the use of any remote (camera type) equipment. The only rejectable visual indication was in the Main Steam support weld #H29247. The data pertaining to this support is located in Part II-C. This weld was repaired and after reexamination no rejectable indications were found.

B. Surface - All surface examinations employed the liquid penetrant method. There were two welds containing rejectable indications. The first was in the Reactor Water Clean-up system in weld #6-12-141B. The second, in the Main Steam support weld #H29247. The indication in #6-12-141B was removed by filing and reexamination resulted in no further indications. Weld #H29247 required rewelding after repair and the final examination resulted in no rejectable indications. The data for these welds is in Part II-C of this report.

C. Volumetric - The volumetric examination method employed was ultrasonics. All welds were examined using 0° longitudinal wave and 45° shear wave techniques. There were no rejectable indications found ultrasonically. Those indications caused by component geometry are noted so on the appropriate data sheets in Part II-C.

ASME SECTION XI CATEGORY D

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Nozzle to Vessel				
N-2C	(UT)	0° B.M. - No reportable indications 0° WHAZ - No reportable indications	Unable to scan F.N. exam area due to insulation- see Data Sheet #sNV-01BM, NV-01WH and NV-01AB	Acceptable
N-3A	(UT)	0° B.M. - No reportable indications	Unable to scan F.N. exam area due to insulation- see Data Sheet #sNV-02BM, NV-02WH and NV-02AB	Acceptable

ASME SECTION XI CATEGORY F

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Bimetalic Welds				
N-1A SE	(UT)	0° B.M. - No reportable indications		Acceptable
		45° - No reportable indications		
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable
N-2C SE	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Attenuation Factor	
		45° - No reportable indications	Used - Refer to DCAR	
	(PT)	No reportable indications	033/77 for method	Acceptable
	(VT)	No reportable indications	employed	Acceptable
N-2D SE	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Attenuation Factor	
		45° - No reportable indications	Used - Refer to DCAR	
	(PT)	No reportable indications	033/77 for method	Acceptable
	(VT)	No reportable indications	employed	Acceptable

ASME SECTION XI CATEGORY F

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
N-2J SE	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Attenuation Factor	
		45° - No reportable indications	Used - Refer to DCAR	
	(PT)	No reportable indications	033/77 for method	Acceptable
	(VT)	No reportable indications	employed	Acceptable
N-5A	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Attenuation Factor	
		45° - No reportable indications	Used - Refer to DCAR	
	(PT)	No reportable indications	033/77 for method	Acceptable
	(VT)	No reportable indications	employed	Acceptable
N-5B	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Attenuation Factor	
		45° - No reportable indications	Used - Refer to DCAR	
	(PT)	No reportable indications	033/77 for method	Acceptable
	(VT)	No reportable indications	employed	Acceptable

ASME SECTION XI CATEGORY F

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
N-8A SE	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	See Data Sht.#NSE-05BM for method employed	
		45° - No reportable indications		Acceptable
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable
N-9 SE	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable
3-03-960	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY F

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
6-12-141B	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(PT)	No reportable indications after retest	See Data Sht.#S12-01PT, and DCAR 010/78	Acceptable
	(VT)	No reportable indications		
10-14-481	(UT)	0° B.M. No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable
10-14-502	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY F

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
20-10-120	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable
24-10-130	(UT)	0° B.M. - No examination	Due to component geometry on both sides of weld, 0° B.M. was not performed.	Acceptable
		0° WHAZ - No reportable indications		
		45° - Circumferential only - No reportable indications	Due to component geometry axial exam. not performed.	
	(PT)	No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY F

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
24-10-131	(UT) 0° B.M. - No examination	Due to component geometry on both sides of weld, 0° B.M. was not performed.	Acceptable
	0° WHAZ - No reportable indications		
	45° - No reportable indications	Axial exam. limited from valve side of weld.	
24-10-132	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - No reportable indications		
	45° - No reportable indications		
	(PT) No reportable indications		Acceptable
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY G-1

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
RPV Studs	(UT)	0° B.M. - No reportable indications		Acceptable
Nos. 32-37	(VT)	No reportable indications	Studs in place-only stud above flange exam. visually	Acceptable
RPV Nuts	(UT)	0° B.M. - No reportable indications		Acceptable
Nos. 32-37	(VT)	No reportable indications		Acceptable
Recirc. Pump	(UT)	0° B.M. No reportable indications		Acceptable
P-1A Studs	(VT)	No reportable indications	Studs in place-only stud above nut exam. visually	Acceptable
Nos. 1-16				
Recirc. Pump	(UT)	0° B.M. - No reportable indications		Acceptable
P-1A Nuts	(VT)	No reportable indications	Nuts in place-only nut Top and O.D. exam. visually	Acceptable
Nos. 1-16				

ASME SECTION XI CATEGORY G-2

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Valve Bolting			
14-CSP-14A	(VT) No reportable indications		Acceptable
14-CSP-14B	(VT) No reportable indications		Acceptable
34-FWS-28A	(VT) No reportable indications		Acceptable
34-FWS-28B	(VT) No reportable indications		Acceptable
29-RV-71G	(VT) No reportable indications		Acceptable
29-RV-71K	(VT) No reportable indications		Acceptable
29-RV-71L	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY G-2

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Incore Monitor Flange Bolting			
12-09	(VT) No reportable indications		Acceptable
36-09	(VT) No reportable indications		Acceptable
20-25	(VT) No reportable indications		Acceptable
28-25	(VT) No reportable indications		Acceptable
20-33	(VT) No reportable indications		Acceptable
12-41	(VT) No reportable indications		Acceptable
36-41	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY G-2

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
CRD Flange Bolting			
10-07	(VT) No reportable indications		Acceptable
14-07	(VT) No reportable indications		Acceptable
14-15	(VT) No reportable indications		Acceptable
02-19	(VT) No reportable indications		Acceptable
06-23	(VT) No reportable indications		Acceptable
10-23	(VT) No reportable indications		Acceptable
02-27	(VT) No reportable indications		Acceptable
02-31	(VT) No reportable indications		Acceptable
06-31	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY G-2

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
14-31	(VT)	No reportable indications		Acceptable
02-35	(VT)	No reportable indications		Acceptable
06-35	(VT)	No reportable indications		Acceptable
06-39	(VT)	No reportable indications		Acceptable
14-39	(VT)	No reportable indications		Acceptable
06-43	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
3-03-950	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - No reportable indications		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
3-03-950A	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - No reportable indications		
	45° - No reportable indications		Acceptable
	(VT) No reportable indications		Acceptable
3-03-950B	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - No reportable indications		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
3-03-950C	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
3-03-950D	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
3-03-951	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
3-03-952	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
3-03-953	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
3-03-954	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
3-03-955	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
3-03-956	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
3-03-958	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
3-03-959	(UT)	0° B.M. - No reportable indications	Limited scan on inside radius of elbow	Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications	Limited scan on inside radius of elbow	
	(VT)	No reportable indications		Acceptable
28-02-2-32	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-38	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
4-02-2-39	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-40	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-41	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
4-02-42	(UT)	0° B.M. - No reportable indications	Limited access-top of tee	Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-43	(UT)	0° B.M. - No reportable indications	Scanned weld area only - See Data Sheet	Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications	Scanned weld area only - See Data Sheet	
	(VT)	No reportable indications		Acceptable
4-02-2-44	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
4-02-2-45	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-46	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-47	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
28-02-2-36	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - No reportable indications		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
28-02-2-90	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - No reportable indications		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
4-02-2-93	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
4-02-2-94	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-95	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-96	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
4-02-2-97	(UT) 0° B.M. - No reportable indications	Configuration does not allow examination from valve side	Acceptable
	0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
4-02-2-98	(UT) 0° B.M. - No reportable indications	Limited scan from tee side (11:00 to 1:00 o'clock) configuration does not allow	Acceptable
	0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
4-02-2-99	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-2-100	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indication	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
4-02-101	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
4-02-2-102	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications	Cal. performed as noted on 0° B.M. Data Sheet	
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
28-02-2-103	(UT)	0° B.M. - No reportable indications		
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-471	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
10-14-472	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-473	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-474	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
10-14-475	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-476	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-477	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
10-14-480	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-488	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-489	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
10-14-492	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-493	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-494	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
10-14-495	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-496	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-497	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
10-14-498	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
10-14-501	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - Not required		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
N-3A SE	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
6-29-532	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
24-29-514	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
24-29-543	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable
24-29-574	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
24-29-605	(UT)	0° B.M. - No reportable indications	Unable to scan the required volume. Limited from 5 to 7 o'clock due to welded support.	Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications	½ Node exam. performed on area noted above.	
	(VT)	No reportable indications		Acceptable
24-29-606	(UT)	0° B.M. - No reportable indications		Acceptable
		0° WHAZ - No reportable indications		
		45° - No reportable indications		
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
12-34-375	(UT)	0° B.M. - No reportable indications 0° WHAZ - No reportable indications 45° - No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable
12-34-377	(UT)	0° B.M. - No reportable indications 0° WHAZ - No reportable indications 45° - No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable
18-34-423	(UT)	0° B.M. - No reportable indications 0° WHAZ - No reportable indications 45° - No reportable indications		Acceptable
	(VT)	No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
20-10-118	(UT) 0° B.M. - No reportable indications 0° WHAZ - No reportable indications 45° - No reportable indications		Acceptable
	(VT) No reportable indications		Acceptable
20-10-119	(UT) 0° B.M. - No reportable indications 0° WHAZ - No reportable indications 45° - No reportable indications		Acceptable
	(VT) No reportable indications		Acceptable
12-02-2-13	Circumferential Weld (UT) 0° B.M. - No reportable indications 0° WHAZ - Not required 45° - No reportable indications		Acceptable
	(VT) No reportable indications		Acceptable
12-02-2-13	Longitudinal Weld - Pipe (UT) 0° B.M. - No reportable indications 0° WHAZ - Not required 45° - No reportable indications		Acceptable
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
12-02-2-13	Longitudinal Weld - Elbow		
	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - Not required		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
12-02-2-24	Circumferential Weld		
	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - Not required		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
12-02-2-24	Longitudinal Weld - Pipe		
	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - Not required		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
12-02-2-24	Longitudinal Weld - Elbow		
	(UT) 0° B.M. - No reportable indications		
	0° WHAZ - Not required		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
12-02-2-71	Circumferential Weld		
	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - Not required		Acceptable
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
12-02-2-71	Longitudinal Weld - Pipe		
	(UT) 0° B.M. - No reportable indications	Scan limited to 5"	Acceptable
	0° WHAZ - Not required	from circ. weld due	
	45° - No reportable indications	to restraint bracker	
	(VT) No reportable indication		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
12-02-2-71	Longitudinal Weld - Elbow		
	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - Not required		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
12-02-2-77	Circumferential Weld		
	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - Not required		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable
12-02-2-77	Longitudinal Weld - Pipe		
	(UT) 0° B.M. - No reportable indications	Scan limited to 5"	Acceptable
	0° WHAZ - Not required	from circ. weld due	
	45° - No reportable indications	to restraint bracket	
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY J

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
12-02-2-77	Longitudinal Weld - Elbow		
	(UT) 0° B.M. - No reportable indications		Acceptable
	0° WHAZ - Not required		
	45° - No reportable indications		
	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY K-1

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Recirc. Pump P-1A Support Weld	(UT)	0° B.M. - No reportable indications 0° WHAZ - No reportable indications 45° - No reportable indications	Located on bot. left side of pump when facing the RPV	Acceptable
	(VT)	No reportable indications		
Hanger #24	(PT)	No reportable indications		Acceptable
RWCU	(VT)	No reportable indications		Acceptable
Support #H29247 Main Steam	(PT)	No reportable indications after retest	Refer to Data Sheets SH-03PT and 04-PT for exam results. Refer to DCAR 012-78 for disposition	Acceptable
	(VT)	No reportable indications after retest	Refer to data sheets SH-03VS and 04VS and DCAR 012-78	Acceptable

ASME SECTION XI CATEGORY K-1

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Support #H29248	(PT) No reportable indications		Acceptable
Main Steam	(VT) No reportable indications		Acceptable
Support #H29249	(PT) No reportable indications		Acceptable
Main Steam	(VT) No reportable indications		Acceptable
*Support #H29138	(PT) No reportable indications		Acceptable
Main Steam	(VT) No reportable indications		Acceptable
*Support #H29142	(PT) No reportable indications		Acceptable
Main Steam	(VT) No reportable indications		Acceptable
*Support #H29250	(PT) No reportable indications		Acceptable
Main Steam	(VT) No reportable indications		Acceptable

*Additional support welds examined in accordance with Section XI, IS-244 due to indication in weld #H29247 of the main steam system.

ASME SECTION XI CATEGORY K-2

EXAMINATION ITEM	INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Valve Hangers			
02-2-9A-NN-11	(VT) No reportable indications		Acceptable
02-2-9B-NN-11	(VT) No reportable indications		Acceptable
Core Spray			
Snubbers - A Loop			
14-5A-S-23	(VT) No reportable indications		Acceptable
14-5A-S-24	(VT) No reportable indications		Acceptable
Snubbers-B Loop			
14-5B-S-43	(VT) No reportable indications		Acceptable
14-5B-S-44	(VT) No reportable indications		Acceptable
14-5B-S-46	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY K-2

EXAMINATION ITEM		INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Recirc. Loop A				
Snubber	02-2-2A-S-9	(VT) No reportable indications		Acceptable
Restraint	02-2-3A-NN-1D	(VT) No reportable indications		Acceptable
Restraint	02-2-3A-NN-2D	(VT) No reportable indications		Acceptable
Restraint	02-2-4A-NN-1A	(VT) No reportable indications		Acceptable
Restraint	02-2-5A-NN-1C	(VT) No reportable indications		Acceptable
Restraint	02-2-6A-NN-1E	(VT) No reportable indications		Acceptable
Restraint	02-2-7A-NN-2C	(VT) No reportable indications		Acceptable
Restraint	02-2-8A-NN-2A	(VT) No reportable indications		Acceptable

ASME SECTION XI CATEGORY K-2

EXAMINATION ITEM			INSPECTION RESULTS	REMARKS	REVIEW RESULTS
Recirc. Loop B					
Restraint	02-2-3B-NN-1D	(VT)	No reportable indications		Acceptable
Restraint	02-2-3B-NN-2D	(VT)	No reportable indications		Acceptable
Restraint	02-2-4B-NN-1A	(VT)	No reportable indications		Acceptable
Restraint	02-2-5B-NN-1C	(VT)	No reportable indications		Acceptable
Restraint	02-2-6B-NN-1E	(VT)	No reportable indications		Acceptable
Restraint	02-2-7B-NN-2A	(VT)	No reportable indications		Acceptable
Restraint	02-2-8B-NN-2C	(VT)	No reportable indications		Acceptable

DEFICIENCY AND CORRECTIVE ACTION REPORTS (DCAR)

POWER AUTHORITY OF THE STATE OF NEW YORK

DEFICIENCY and CORRECTIVE ACTION REPORT (DCAR)

- Site Location: JAFNPP
- Report No. 033-77
- From: Quality Control Supervisor
- Date: 7/18/77
- To: Resident Manager
- Inspection Type: Receipt ☐ Manufacturing ☐ Surveillance ☒ Installation ☐
- Component/System Description: Core Spray System

  Category "F"

  Ultrasonic Examination for weld numbers:

  N-5A-SE

  N-5B-SE

- Deficiency/Discrepancy Description: The ISI Program Category F examination requirements for Core Spray Welds Number N-5A-SE and N-5B-SE specify that a .750" calibration block be used. This calibration block (F7S) was used in the baseline inspection and was also used on the above welds during the inservice inspection program. However, the thickness of the material at these welds is 1.1 inch and according to code a 1.1 or 1.5" calibration block is required. There is no calibration block of the required thickness on Site.

- Q.C. Action: NONE

- Peter Olsen
  Quality Control Inspector

  J H Kirchen
  Quality Control Supervisor

September 13, 1977

MEMORANDUM TO: Myles Cosgrove

FROM: Peter K. Olsen

SUBJECT: Equivalent Response Calibration Reflectors, Analysis and Justification

REFERENCE:
A) JAF - DCAR #033-77, DCAR #057-77 and DCAR #058-77
B) G.E. Procedure No. 160A7505 - Rev. 2
C) ASME Section XI - 1970 Edition
D) ASME Section III - 1968 Edition - Appendix IX

Due to the design configuration of weld joints listed in Ref. (A), Ref. (B) cannot be used for the inservice inspection requirements of Ref. (C).

The code requirements per Ref. (C) for calibration standards are as shown in Figure 1. Due to the configuration of these standards, calibration is not possible per Ref. (B). When the ratio of outside pipe diameter to pipe wall thickness is less than 8 to 1, a signal cannot be obtained from the inside diameter of the pipe as also shown in Figure 1.

Since Ref. (C) does not concern itself with design configurations of less than 8 to 1, an alternate method must be employed. An alternate calibration method is allowed per Ref. (D), para. 343(c).

To comply with Ref. (D), para. 343(c), a signal comparison of equivalent response reflectors must be determined employing a flat calibration standard and an equivalent section of pipe.

To accomplish the above, holes were drilled in various standards as shown in Figure (2). Each drilled and reamed hole is 1/8" diameter and 1/2" below the surface. By comparing the db signal difference of the flat standard and the curved standard, an attenuation factor can be determined.

The method to determine the attenuation factors is as follows:

For the longitudinal wave method, obtain a peaked signal from the appropriate flat standard (as shown in Figure 3) and adjust the height to 50% screen. Without further instrument adjustment, obtain a peaked signal from the appropriate curved standard (Figure 3). Using the db controls, adjust the peaked signal from the curved standard to 50% screen. This db difference is the attenuation factor.

For the shear wave method, obtain a peaked signal from the appropriate flat standard Figure (3) and adjust the height to 50% screen. Without further instrument adjustment, obtain a peaked signal from the appropriate curved standard (Figure 3). Using the db controls, adjust the peaked signal from the curved standard to 50% screen. This db difference is the attenuation factor.

The equipment used and calibration data for the attenuation comparison is as follows:

a. Instrument - Branson 303 - Ser. #703204
b. Transducer - Aerotech 1/2" 2.25mhz - 45 S
Ser. #D15229 - Wedge - H4
Harisonic 1/2" 2.2mhz - dual L - Ser. #DI0208/P714
c. Accessories - per Ref. (B)
d. Calibration of Equipment - Ref. (B) Attachment (A)
e. Transducer certification - refer to G.E. documents

The results of the attenuation comparison are as follows:

		L Wave	S Wave
a.	Cal. Standard No. F-10 to F-5	in 4 db	in 5 db
b.	Cal. Standard No. F-10 to PIR-75.2	in 3 db	in 4 db
c.	Cal. Standard No. F-11S to F-7S	in 3 db	in 6 db

The attenuation factors and appropriate calibration standards for weld-joints per Ref. (A) are as follows:

Weld Iden No.	Cal. Standard	Attenuation Factors	
		L Wave	S Wave
N-5-A-SE & N-2A-SE	F-11S	in 3 db	in 6 db
N-5-B-SE & N-2H-SE	F-11S	in 3 db	in 6 db
N-TH-A-C1	F-10	in 3 db	in 4 db
N-TH-B-C1	F-10	in 3 db	in 4 db
N-TH-C-C1	F-10	in 4 db	in 5 db

Instructions for G.E. Inspection personnel

Inspection of Ref. (A) to be performed in accordance with Ref. (B) with the following exceptions:

a. Para. 4.2.3 - 1/2" 2.25mhz dual transducer - #DI0208 or equiv.
b. Para. 4.2.4 - 1/2" 2.25mhz - 45 degree ± 3 - #D15229 or equiv.
c. Para. 5.3.6.2 - after the primary reference level has been established, add the appropriate attenuation factor
d. Para. 5.3.7.1 - after the primary reference level has been established, add the appropriate attenuation factor
e. Para. 7.4.4 - Not Applicable

Prepared By: P.K. Olsen
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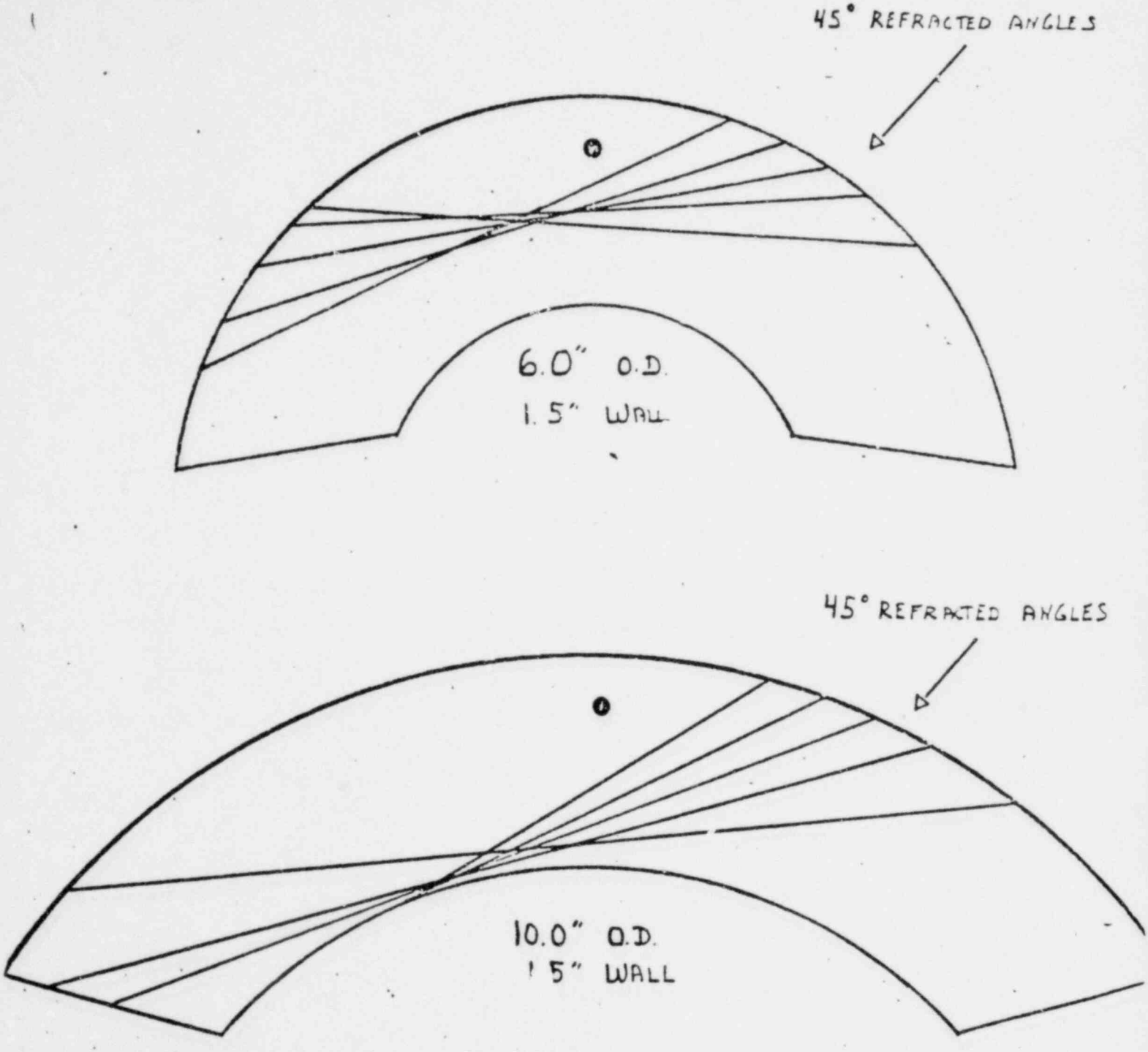
PKO/mes

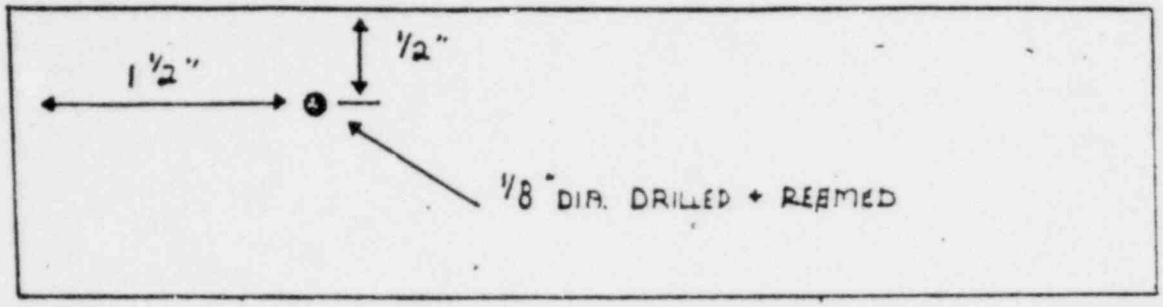
REVIEWED BY: Steve Krueger Date 9/13/77
PASNY Representative Level III



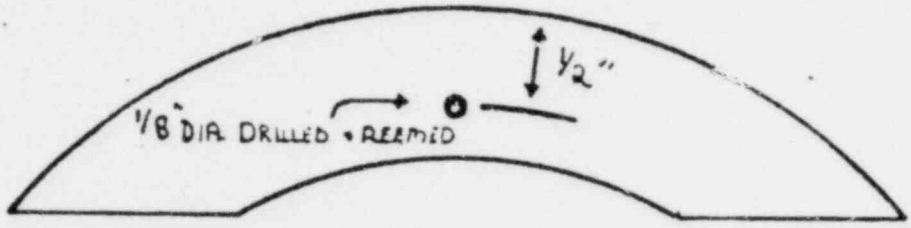
CODE REQUIRED CALIBRATION STANDARDS

SHEAR WAVE REFRACTED ANGLES

FIGURE 1



CALIBRATION STANDARD SER. Nos. F-10 + F-11S



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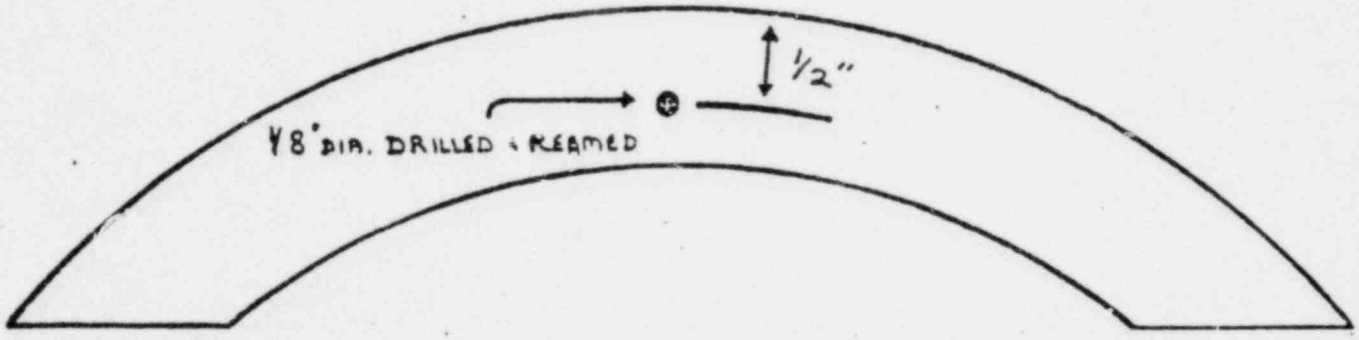
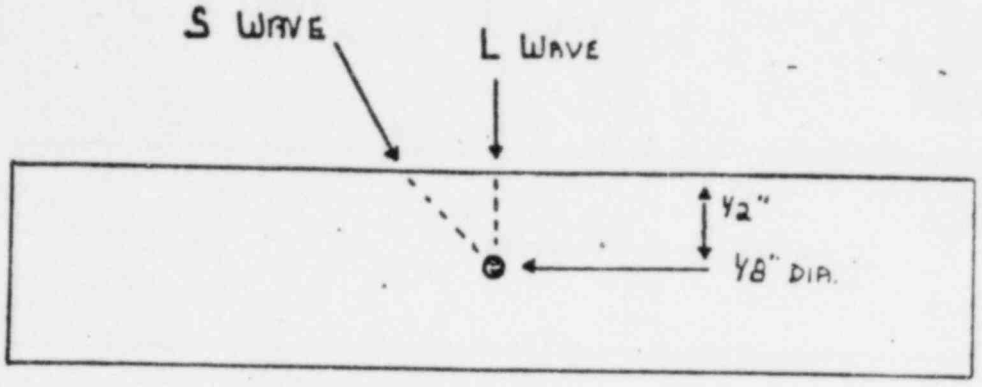


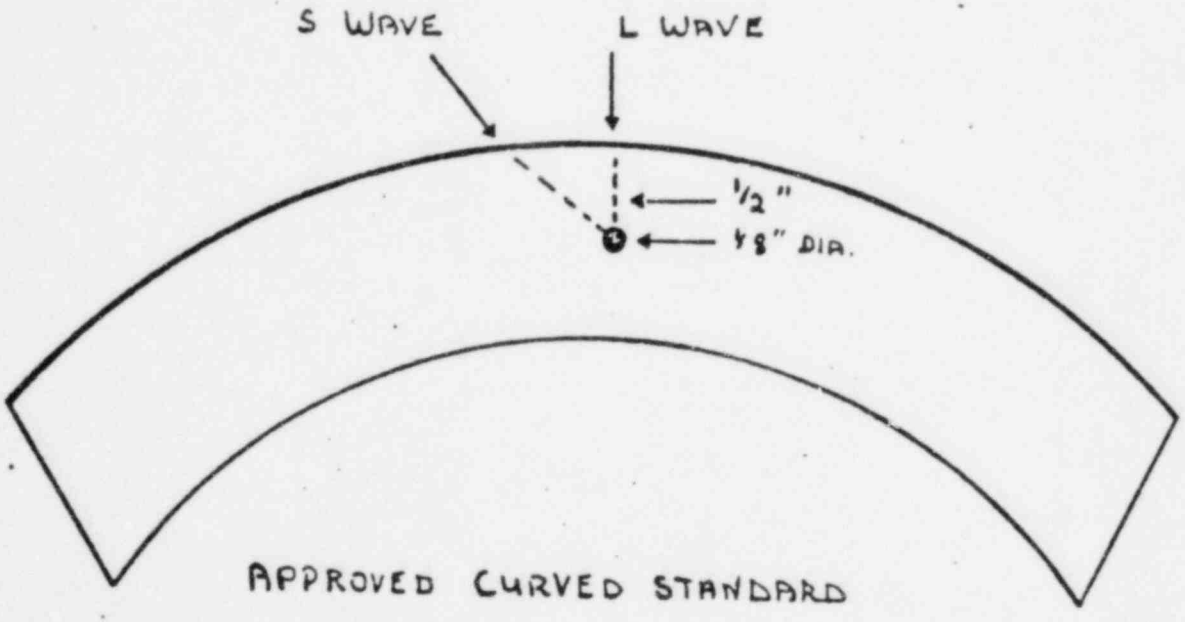
CALIBRATION STANDARDS SER. NOs. F-7S + PIR-.75-2

ATTENUATION COMPARISON STANDARDS

FIGURE 2



APPROPRIATE FLAT STANDARD



APPROVED CURVED STANDARD

METHOD TO DETERMINE ATTENUATION FACTORS

FIGURE 3

POWER AUTHORITY OF THE STATE OF NEW YORK

DEFICIENCY and CORRECTIVE ACTION REPORT (DCAR)

- Site Location: JAFNPP — Report No. 010-78
- From: Quality Control Supervisor — Date: 10/4/78
- To: Resident Manager
- Inspection Type: Receipt ☐ Manufacturing ☐ Surveillance ☒ Installation ☐
- Component/System Description: Reactor Water Cleanup piping
  Dissimilar metal weld 6-12-141B
- Deficiency/Discrepancy Description: Inservice inspection category F examination requirements (Liquid Penetrant) reveals three (3) linear indications within a 1½" area. The longest indication does not exceed ½".
- Q.C. Action: Recommend area be ground and reexamined

POWER AUTHORITY OF THE STATE OF NEW YORK

DEFICIENCY and CORRECTIVE ACTION REPORT (DCAR)

- Site Location: JAFNPP — Report No. 012-78
- From: Quality Control Supervisor — Date: 10/10/78
- To: Resident Manager
- Inspection Type: Receipt ☐ Manufacturing ☐ Surveillance [X] Installation ☐
- Component/System Description: MSIV A line support H29-247

- Deficiency/Discrepancy Description: Examination requirements for ISI Program Category K-1 Liquid Penetrant reveals a linear indication 1" long located 4-3/8" clockwise from bottom centerline

- Q.C. Action: Recommend three (3) more MSIV Category K-1 supports be LP examined to meet the additional examination requirements of ASME Sect. XI, Para IS-244 (Initial Examination 3 MSIV Supports)

- Quality Control Inspector — Quality Control Supervisor