

50-251

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER

TO: Mr. George Lear

FROM: FPL

Miami, Fl. 33101
Robert E. Uhrig

DATE OF DOCUMENT

04-11-77

DATE RECEIVED

04-14-77

LETTER
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DESCRIPTION

Ltr. Ref, our 04-07-77 meeting regarding reactor vessel status...Advising that an Appendix G. inservice inspection of the Unit 4 reactor vessel belt-line area need not be conducted until after June 1980...and Trans The Following:

(2 pages)

PLANT NAME: TURKEY POINT UNIT 4

jcm

ENCLOSURE

Consists of Information concerning Reactor Vessel Material Surveillance Program for Units 3 & 4 Forged Pressure Vessels Weld and Copper Data.....

(23 encl rec'd)
(6 pages)

SAFETY

FOR ACTION/INFORMATION

ENVIRO

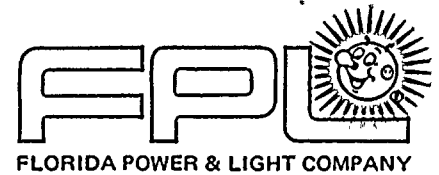
ASSIGNED AD:		ASSIGNED AD:
BRANCH CHIEF:	Lear (5)	BRANCH CHIEF:
PROJECT MANAGER:	Elliott	PROJECT MANAGER:
LIC. ASST. :	Parrish	LIC. ASST. :

INTERNAL DISTRIBUTION

REG FILE	SYSTEMS SAFETY	PLANT SYSTEMS	SITE SAFETY & ENVIRO ANALYSIS
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I-&E (2)	SCHROEDER	BENAROYA	
OELD		LAINAS	
GOSSICK & STAFF	ENGINEERING	IPPOLITO	ENVIRO TECH.
MIPC	MACARRY	KIRKWOOD	ERNST
CASE	BOSNAK		BALLARD
HANAUER	SIHWEIL	OPERATING REACTORS	YOUNGBLOOD
HARLESS	PAWLICKI	STELLO	
			SITE TECH.
PROJECT MANAGEMENT	REACTOR SAFETY	OPERATING TECH.	GAMMILL
BOYD	ROSS	EISENHUT	STEPP
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HOUSTON	ROSZTOCZY	BAER	
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EXTERNAL DISTRIBUTION

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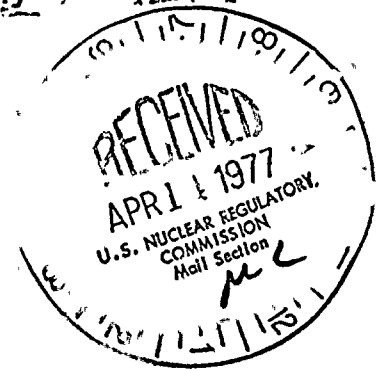


April 11, 1977
L-77-113

Regulatory

File Cy.

Office of Nuclear Reactor Regulation
Attention: Mr. George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



Dear Mr. Lear:

Re: Turkey Point Unit 4
Docket No. 50-251
Fracture Toughness Requirements

On April 7, 1977, a meeting was held with members of your staff to discuss the status of the Turkey Point Unit 4 reactor vessel with respect to the fracture toughness requirements of Section V.B of Appendix G to 10 CFR 50. At that meeting, we showed that the weld metal surveillance data for the Turkey Point Unit 3 reactor vessel represent not only the core midplane circumferential welds in Unit 3, but in Unit 4 as well. Data supporting this conclusion are attached.

The data show that the weldment samples from a Unit 3 surveillance capsule "T" and from both the Unit 3 and Unit 4 reactor vessels were made from the same combination of filler wire heat number and welding flux lot number. However, the weldment samples from a Unit 4 surveillance capsule "T", although containing the same filler wire heat number, used a different welding flux lot number. Therefore, the Unit 3 capsule "T" sample is more representative of the Unit 4 reactor vessel.

Irradiation data from the Unit 3 capsule was submitted to the NRC on October 19, 1976 (L-75-363). The data exhibited a shelf energy of 58 ft-lbs at a fluence of 5.7×10^{18} nvt. Accordingly, the mid-plane circumferential vessel weld in Unit 4 can be expected to maintain a shelf energy level in excess of 50 ft-lbs at the 1/4 T location until at least June 1980 at which time this location will have received a fluence of 5.7×10^{18} nvt.


771050306

Office of Nuclear Reactor Regulation
Page Two

In the October 19 letter, we also stated that additional reports were being prepared by our NSSS vendor to complete summarizing the fatigue, accident, and fracture analyses for Units 3 and 4. We expect to receive these additional reports in draft form in about one week, and should be able to forward them on to your office in approximately 6 to 8 weeks.

The evaluation discussed above supports the conclusion we presented at the April 7 meeting that an Appendix G inservice inspection of the Unit 4 reactor vessel belt-line area need not be conducted until after June 1980.

Very truly yours,


Robert E. Uhrig
Vice President

REU/MAS/cpc

Attachment

cc: Mr. Norman C. Moseley, Region II
Robert Lowenstein, Esquire

FLORIDA POWER & LIGHT CO.
 REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM
 TURKEY POINT UNIT NOS. 3 AND 4
 FORGED PRESSURE VESSELS
 WELD AND COPPER DATA

WELD DATA

	<u>Unit #3</u>		<u>Unit #4</u>	
	<u>Wire</u>	<u>Flux</u>	<u>Wire</u>	<u>Flux</u>
	<u>Heat No.</u>	<u>Lot No.</u>	<u>Heat No.</u>	<u>Lot No.</u>
Girth Weld	71249	8445	71249	8445
Surveillance Welds	71249	8445	71249	8457

SURVEILLANCE WELD METAL COPPER ANALYSIS (WT. %)

		<u>Unit #3</u>	<u>Vendor</u>
<u>Sample</u>			
Original Unirradiated	.31		Spectro Chemical Laboratory
Re-Check #1 Unirradiated	.33		Spectro Chemical Laboratory
Re-Check #2 Unirradiated	.32		Westinghouse R&D Center
		<u>Unit #4</u>	<u>Vendor</u>
<u>Sample</u>			
Original Unirradiated	.30		Spectro Chemical Laboratory
Irradiated Broken Charpy #1	.27		Southwest Research Institute
Irradiated Broken Charpy #2	.29		Southwest Research Institute
Irradiated Broken Charpy #3	.30		Southwest Research Institute

REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM
FLORIDA POWER AND LIGHT COMPANY
TURKEY POINT NUCLEAR FACILITY

- 1.) ESTIMATED MAXIMUM FLUENCE ($E > 1$ MEV) AT THE INNER SURFACE OF THE REACTOR VESSEL WALL AS OF 1/1/77.
 - UNIT #3 - 5.33×10^{18} N/CM²
 - UNIT #4 - 4.47×10^{18} N/CM²

- 2.) NUMBER OF EFFECTIVE FULL POWER YEARS (EFPY) OF OPERATION ACCUMULATED AS OF 1/1/77
 - UNIT #3 - 2.68 EFPY
 - UNIT #4 - 2.17 EFPY

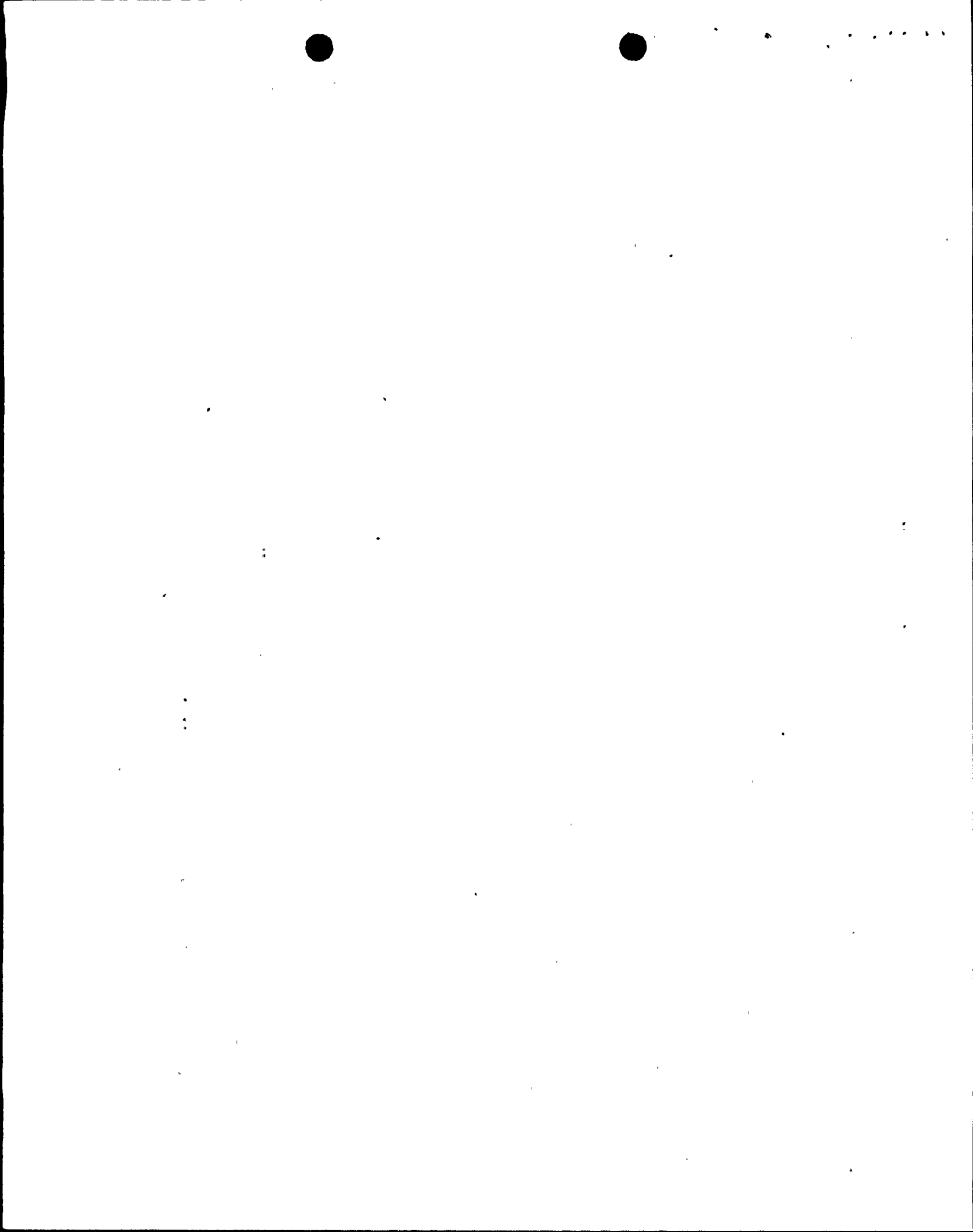
- 3.) VESSEL FABRICATOR - BABCOCK & WILCOX COMPANY

- 4.) A.) LOCATION OF WELDS IN THE REACTOR VESSEL - SEE SKETCH
B.) INFORMATION RELATIVE TO WELDS IN BELTLINE REGION OF THE VESSEL
 - 1.) SHOP CONTROL NUMBER OR PROCEDURE QUALIFICATION NUMBER - NOT AVAILABLE AT THIS TIME
 - 2.) FILLER METAL AND HEAT NUMBER - SEE TABLE
 - 3.) TYPE OF FLUX AND LOT NUMBER - SEE TABLE
 - 4.) WELDING PROCESS - SEE TABLE
 - 5.) POST WELD HEAT TREATMENT UNIT #3 AND #4
 - 1100 TO 1150°F - 48 HRS. (B&W WELD QUAL. TESTS)
 - 1100 TO 1150°F - 10-1/4 HRS. (INTER TO LOWER SHELL WELD)
 - 1125°F - 10-1/4 HRS. (SURVEILLANCE WELD)

6.) CHEMICAL COMPOSITION - SEE TABLE

7.) DROPWEIGHT - NOT PERFORMED

5.) A&B.) INFORMATION ON WELD MATERIAL INCLUDED IN THE VESSEL MATERIAL
SURVEILLANCE PROGRAM - SEE TABLE



TURKEY POINT UNIT NO. 3

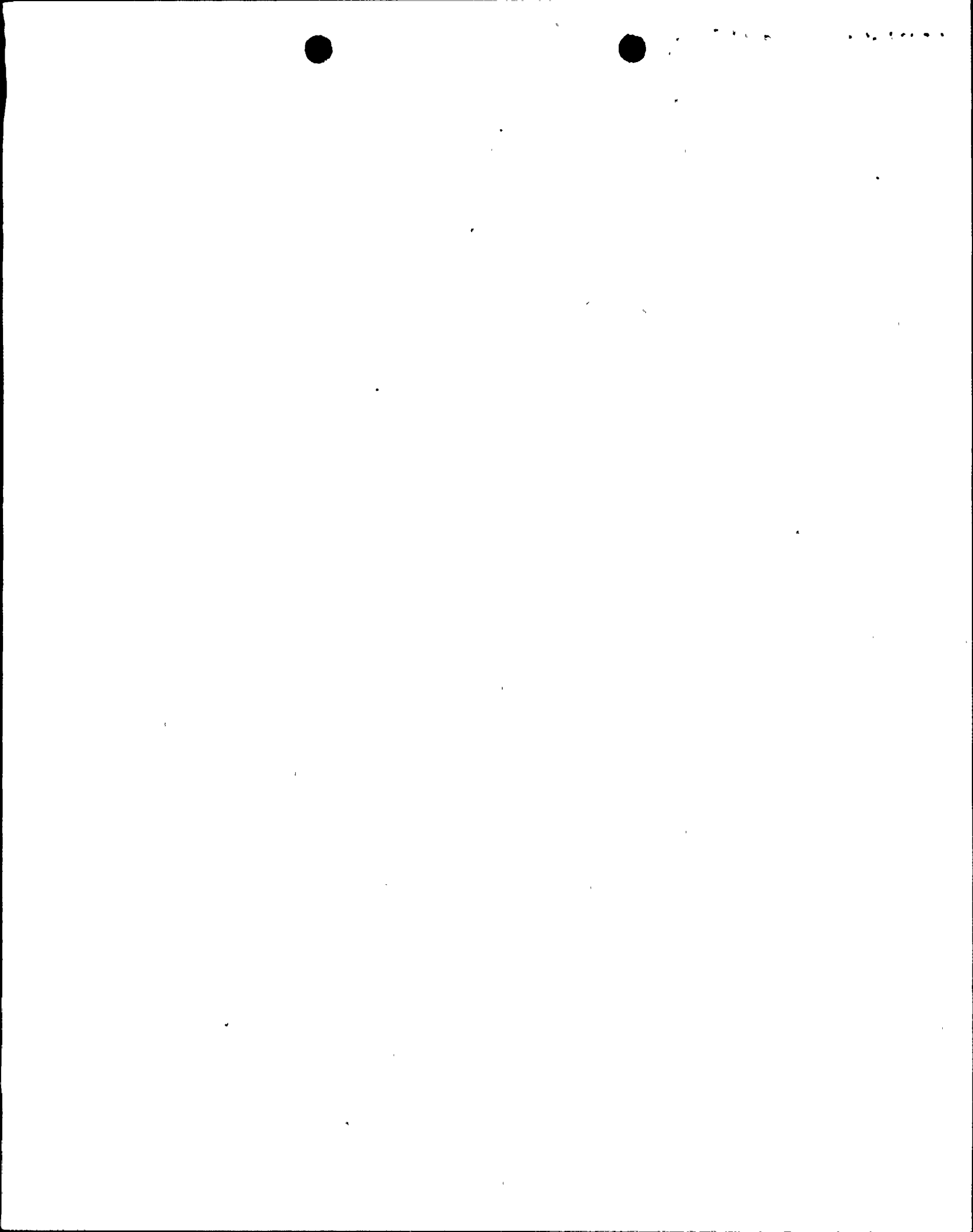
<u>SURVEILLANCE WELDMENT</u>	<u>C</u>	<u>MN</u>	<u>P</u>	<u>S</u>	<u>Si</u>	<u>CR</u>	<u>NI</u>	<u>MO</u>	<u>CU</u>	<u>Ft-lb Energy at 10°F</u>
1/8" Page Wire Heat No. 71249,* Linde 80 Flux Lot No. 8445	.07	1.28	0.21	0.14	.52	.17	.57	.36	.21	45,45,46
<u>NOZZLE SHELL TO INTER. SHELL WELD</u>										
1/8" Page Wire Heat No. 72442,* Linde 80 Flux Lot No. 8579	.08	1.52	.018	.015	.42	.06	.64	.39	.25	40,52,41
1/8" E8015 G Wire Heat No. 83D529	.04	.73	.010	.014	.34	.01	.90	.48	---	---
5/32" E8015 G Wire Heat No. 89D285	.04	.66	.010	.020	.23	.03	1.04	.48	---	---
3/16" E8015 G Wire Heat No. 86C127	.04	.76	.008	.019	.22	.02	.85	.65	---	---
3/16" E8015 G Wire Heat No. 78C491	.05	.82	.009	.015	.22	.02	.76	.66	.02	---
<u>INTER. SHELL TO LOWER SHELL WELD</u>										
1/8" Page Wire Heat No. 71249,* Linde 80 Flux Lot No. 8445	.07	1.28	.021	.014	.52	.17	.57	.36	.21	45,45,46
<u>LOWER SHELL TO DUTCHMAN WELD</u>										
1/8" Wire Heat No. 61782,* Linde 80 Flux Lot No. 8457	.08	1.24	.015	.013	.47	.06	.50	.54	.17	56,44,55

* Submerged Arc Weld - All others are manual metal arc used for repairs.

TURKEY POINT UNIT NO. 4

<u>SURVEILLANCE WELDMENT</u>	<u>C</u>	<u>MN</u>	<u>P</u>	<u>S</u>	<u>SI</u>	<u>CR</u>	<u>NI</u>	<u>MO</u>	<u>CU</u>	<u>Ft-1b Energy at 10°F</u>
1/8" Page Wire Heat No. 71249 }* Linde 80 Flux Lot No. 8457	.07	1.42	.020	.016	.51	.16	.55	.49	.23	38,34,52
<u>NOZZLE SHELL TO INTER. SHELL WELD</u>										
1/8" Am. C&C Wire Heat No. 72105 }* Linde 80 Flux Lot No. 8669	.07	1.60	.014	.011	.48	---	.46	.40	.27	39,35,44
1/8" Am. C&C Wire Heat NO. 72442 }* Linde 80 Flux Lot No. 8669	.064	1.49	.014	.017	.54	.02	.57	.41	.27	29,35,30
5/32" E8015 G Wire Heat No. 89D285	.04	.66	.010	.020	.23	.03	1.04	.48	---	---
<u>INTER. SHELL TO LOWER SHELL WELD</u>										
1/8" Page Wire Heat No. 71249 }* Linde 80 Flux Lot No. 8445	.07	1.28	.021	.014	.52	.17	.57	.36	.21	45,45,46
5/32" E8015 G Wire Heat No. 78C180	.08	.67	---	---	.31	.04	.79	.51	---	---
<u>LOWER SHELL TO DUTCHMAN WELD</u>										
1/8" Wire Heat No. 61782 }* Linde 80 Flux Lot No. 8457	.08	1.24	.015	.013	.47	.06	.50	.54	.17	56,44,55
1/8" E8015 Wire Heat No. 86C127	.06	.70	.008	.015	.26	---	.94	.57	---	---

* Submerged Arc Welds - All others are manual metal arc used for repairs.



TURKEY POINT REACTOR VESSELS

