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NRC FORM 195 U.S. NUC (2-76)			CLEAR	REGULATORY COM LON	DOCKET NUMBER	
NRC DISTRIBUT	FILE NUMBER					
TO:	FROM: Towa Electri	ic Lie	ht & Pwr. Company	DATE OF DOCUMENT 6/9/77		
Mr. George Lear		Cedar Rapids		DATE RECEIVED 6/15/77		
图LETTER □NOTORIZED □ORIGINAL @UNCLASSIFIED BCOPY		PROP			NUMBER OF COPIES RECEIVED	
					1 00 SIGN	
DESCRIPTION			ENCLO	SURE		
RE THEIR 3-14-77 LTR			Consists of the results of the inspection of the ferrite measurements of the Feedwater Nozzle Blend Radius Cladding			
• •	WKNO	WLEDGE	D .	•	+ •	
ACKNOW LIDOVE DO NOT REMOVE				(1-P)		
RJL 6/17/77					10 encl	
SAFETY FOR ACTION/II					NVIRONMENTAL	
ASSIGNED AD:			ASSIGNED AD: V. MOORE (LTR)			
BRANCH CHIEF: (5) LPAR			BRANCH CHIEF:			
PROJECT MANAGER: WETPTORE			PROJECT MANAGER:			
LICENSING ASSISTANT: PHRILISH		EISH	LICENSING ASSISTANT:			
				B. HARLESS		
		INTERNAL D	ISTRIB	UTION		
REG FILES	SYSTEM	IS SAFETY		PLANT SYSTEMS	SITE SAFETY &	
NRC PDR	HEINEMA	'N	TE	DESCO	ENVIRON ANALYSIS	
1 & E (2)	SCHROET	ER	BE	NAROYA	DENTON & MULLER	
OELD.			LA	INAS	CRUTCHFIELD	
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HANAUER	KNIGHT			ROSA	ENVIRO TECH.	
MIPG	BOSNAK				ERNST	
CASE 4 CASE	STRWEI	.T.	OP	ERATING REACTORS		
CASE A STORY	1			ERATING REACTORS STELLO	BALLARD YOUNGBLOOD	
CASE A WE BOYD	SIHWEI PAWI.IC			STELLO	BALLARD .	
BOYD	PAVILIC	OKI		STELLO ELSENHUT	BALLARD YOUNGBLOOD	
BOYD PROJECT MANAGEMENT	PAWI.IC REACTO			STELLO EISENHUT SHAO	BALLARD .	
BOYD PROJECT MANAGEMENT SKOVHOLT	PAWLIC REACTO	OKI		STELLO EISENHUT SHAO BAER	BALLARD YOUNGBLOOD SITE TECH.	
PROJECT MANAGEMENT SKOVHOLT P. COLLINS	PAWLIC REACTO ROSS NOVAK	OR SAFETY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON	PAWLIC REACTO ROSS NOVAK ROSZTOO	OR SAFETY		STELLO EISENHUT SHAO BAER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2)	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ	PAWLIC REACTO ROSS NOVAK	OR SAFETY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES	REACTO ROSS NOVAK ROSZTOO CHECK	OR SAFETY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ	REACTO ROSS NOVAK ROSZTOO CHECK	CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES	REACTO ROSS NOVAK ROSZTOO CHECK AT&I SALTZMA	OR SAFETY CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES	REACTO ROSS NOVAK ROSZTOO CHECK AT&I SALTZMA RUTBERG	OR SAFETY CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS KREGER	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES SK	REACTO ROSS NOVAK ROSZTOO CHECK AT&I SALTZMA RUTBERC EXTERNA	OR SAFETY CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS KREGER CONTROL NUMBER	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES SK L.PDR: CROWN GARDIOS II	REACTO ROSS NOVAK ROSZTOO CHECK AT&I SALTZMA RUTBERO EXTERNA	OR SAFETY CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS KREGER	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES SK LPDR: COMO GARRIOS //	REACTO ROSS NOVAK ROSZTOO CHECK AT&I SALTZMA RUTBERC EXTERNA	OR SAFETY CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS KREGER CONTROL NUMBER 77/7/0005	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES SK LPDR: PROVE APPLES II TIC NAT LAB	REACTO ROSS NOVAK ROSZTOO CHECK AT&I SALTZMA RUTBERO EXTERNA	OR SAFETY CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNG BLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS KREGER CONTROL NUMBER 77/7/0005	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES SK LPDR: PROVE (APRICS II TIC NAT LAB REG IV (J. HANCHETT)	REACTO ROSS NOVAK ROSZTOG CHECK AT&I SALTZM RUTBERG EXTERNA	OR SAFETY CZY N AL DISTRIBUTION		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNGBLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS KREGER CONTROL NUMBER 77/7/0005	
BOYD PROJECT MANAGEMENT SKOVHOLT P. COLLINS HOUSTON MELTZ HELTEMES SK LPDR: PROVE [APRICS II TIC NAT LAB	REACTO ROSS NOVAK ROSZTOG CHECK AT&I SALTZM RUTBERG EXTERNA	OR SAFETY CZY		STELLO EISENHUT SHAO BAER BUTLER	BALLARD YOUNG BLOOD SITE TECH. GAMMILL (2) SITE ANALYSIS VOLLMER BUNCH J. COLLINS KREGER CONTROL NUMBER	

IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office

CEDAR RAPIDS. IOWA

LEE LIU
VICE PRESIDENT - ENGINEERING

June 9, 1977 IE-77-1136

Regulatory Docket File

Mr. George Lear, Chief Operating Reactors, Branch 3 Division of Operating Reactors Nuclear Regulatory Commission Washington, D. C. 20555

Dear Mr. Lear:

We conducted the Feedwater Nozzle Inspection at the Duane Arnold Energy Center (DAEC) in accordance with the procedures forwarded to you in our March 14, 1977, letter.

In all cases, there were no apparent defects. Ultrasonic inspection was conducted of the Reactor Vessel Nozzle Forging Inner Radii, Reactor Vessel Nozzle Bore and Thermal Sleeve/Safe End Weld. A boroscope inspection of the Thermal Sleeve/Safe End Weld was conducted. A visual inspection of the Feedwater Sparger and the Nozzle Blend Radii was also conducted. Mr. Vince Noonan of your staff reviewed records and visually checked the boroscope resolution during this visit to the DAEC. Enclosed are results of the ferrite measurements of the Feedwater Nozzle Blend Radius Cladding.

If you have any questions, please feel free to call Mr. Ken Harrington (319-398-4129) of our staff.

Very truly yours,

Lee Liu

Vice President - Engineering

LL/KAM/hmb Enclosure

cc: D. Arnold

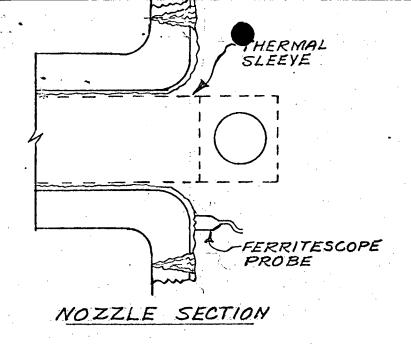
R. Lowenstein

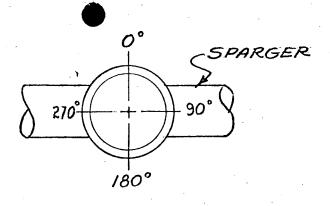
J. Wetmore

L. Root

A-107, B-11a

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VIEW OF TYPICAL NOZZLE

NOZZLE AZIMUTH	MEASUREME LOCATION		T FERRITSCOPE MEASURENTS PERCENT FERRITE			
		PROBE HORIZONTAL		RANDOM MEASUREMENT OUTSIDE TANGENT		
① _O°		<i>5</i> .3	4.0 \$ 4.5	8.0		
	180°	5.0, 5.5, 5.0	2.7	9.0.		
	225°	e e considerante de la considera	2.5			
②— _{/35°}	O°		3.5	9.0		
	1800	4.0	4.5	4.0		
3 <u>225°</u> 4 315	O°	4.0, 4.5, 5.0, 4.3	4.0, 4, 5	5.0		
	180°	4.0	4.0	4.0		
	245°	4,5	4,5	e marie e marie e e e e e e e e e e e e e e e e e e		
	0°	4.5, 5.0	4.5, 5.0	3.5		
		3.5	_ 4.5			
	225°	3.0	2.0 .			

DATA SHEET

DATE OF INSPECTION 4-1-77