



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

*Tera*

OCT 30 1980

Those on Attached Address Listing:

This IE Information Notice No. 80-38 is forwarded to provide a notification of a potential source of degradation that might occur in a safety related component over long term operation. No specific action or written response is required at this time. If you have any questions related to this matter, please contact this office.

Sincerely,

*James G. Keppler*  
James G. Keppler  
Director

Enclosure: IE Information  
Notice No. 80-38

cc w/encl:  
Mr. D. W. Kane,  
Sargent & Lundy  
Reproduction Unit NRC 20b

810 1050 289

Q

RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Docket Nos. 50-10, 50-237, 50-249;  
50-254, 50-265; 50-295, 50-304; 50-373,  
50-374; 50-454, 50-455; 50-456 and 50-457

Commonwealth Edison Company  
ATTN: Mr. Cordell Reed,  
Vice President  
Post Office Box-767  
Chicago, IL 60690

cc w/encl:

Mr. J. S. Able, Director of Nuclear Licensing	Mr. Gunner Sorensen, Site Project Superintendent
Mr. D. J. Scott, Station Superintendent	Mr. R. Cosaro, Project Superintendent
Mr. N. Kalivianakis, Station Superintendent	Mr. J. F. Gudac, Station Superintendent
Mr. K. Graesser, Station Superintendent	Central Files
Mr. L. J. Burke, Site Construction Superintendent	Director, NRR/DPM
Mr. T. E. Quaka, Quality Assurance Supervisor	Director, NRR/DOR
Mr. R. H. Holyoak, Station Superintendent	AEOD
Mr. B. B. Stephenson, Project Manager	Resident Inspectors, RIII
Mr. V. I. Schlosser, Project Manager	PDR
Mr. R. E. Querio, Station Superintendent	Local PDR
	NSIC
	TIC
	Mr. Dean Hansell, Office of Assistant Attorney General
	Myron M. Cherry, Chicago

Docket No. 50-358

Cincinnati Gas and Electric  
Company  
ATTN: Mr. Earl A. Borgmann  
Senior Vice President  
Engineering Services  
and Electric Production  
139 East 4th Street  
Cincinnati, OH 45201

cc w/encl:

Mr. J. R. Schott, Plant Superintendent	Local PDR
Central Files	NSIC
Director, NRR/DPM	TIC
Director, NRR/DOR	Harold W. Kohn, Power Siting Commission
AEOD	Citizens Against a Radioactive Environment
Resident Inspector, RIII	Helen W. Evans, State of Ohio
<del>PDR</del>	

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

SSINS No.: 6835  
Accession No.:  
8008220180  
IN-80-38

*Dupe*

October 30, 1980

IE Information Notice No. 80-38: CRACKING IN CHARGING PUMP CASING CLADDING

Description of Circumstances:

In January 1980 Commonwealth Edison Company (CECo) reported to the NRC that a radiographic examination had revealed crack indications in the cladding on the suction end plate of the 1A charging pump at Zion Unit 1. This centrifugal charging pump 1A is one of two pumps installed in Zion Unit 1 for high head safety injection of borated water to the reactor loops. These pumps are additionally utilized as charging pumps during normal operation. ASME Section XI inservice inspection rules referenced in the plant technical specification requires pump examination only once during the 10 year service interval and this pump had been in service about 7 years.

The pumps are 2-1/2 inch, 11 stage, Type IJ manufactured by the Pacific Pumps Division of Dresser Industries. The pump casing end assembly in the area of interest, Figure 1, consists of a suction end plate of A515 grade 60 carbon steel plate welded to the casing barrel forging of A266 class 1 carbon steel using an Inconel weldment. The entire inner surface is clad with type 308 stainless steel applied by submerged arc welding.

An in-situ ultrasonic examination conducted in late April confirmed clad cracking indications at the barrel case to end plate inner radius for approximately 330 degrees around the circumference and that the cracking possibly extended into the pump base material in the bottom 180 degrees of the assembly. A review of the original radiographs revealed crack like indications in the clad overlay, however, not to the extent observed during this examination.

Subsequently, the entire suction end of the pump was removed and cross sections metallographically examined to further evaluate the nature and extent of the cracking. It was determined that initiation and propagation of the clad cracks probably resulted from stress concentration and dilution effects in the initial corner bead pass due to the difficult access and bead sequencing required by the fairly sharp corner geometry. Extension of the cracks at the base metal-clad interface ranged to a depth of 1/16 inch maximum in the 1-1/2 inch thick base material. These crack tip areas were well blunted and slightly cavitated from corrosion effects due lengthy exposure to the localized boric acid attack. Examination of the crack morphology revealed that the clad cracking essentially arrested at the base metal-clad interface and that base metal corrosion progressed at a relatively slow rate.

The 1A charging pump was replaced with a new pump provided with a casing constructed entirely of stainless steel. The licensee is currently developing improved NDE procedures for examination of the three remaining pumps at the next refueling outage. Further, the licensee and pump manufacturer are developing repair procedures in the event cracks are discovered in the remaining pumps.

A corrosion evaluation provided CECO by Westinghouse indicates the corrosion rate of carbon steel subject to environmental conditions typical of the installed pumps is on the order of 2-1/2 to 4 mils per month. Additionally, a stress analysis of the pump casing by the manufacturer using ASME Section III, Subsection NC rules, indicates that at design conditions a flaw with depth of 0.763 inches could be tolerated.

Based on the available information no immediate safety concern is indicated. However, the observed conditions reveal a potential source of pump degradation over long term operations. Therefore, to assure maximum availability, it appears prudent to perform a nondestructive examination of this pump type at the earliest practical time during the first code required in-service inspection interval and if cracking is confirmed, take appropriate corrective actions per the rules of ASME Section XI BP&V Code.

This Information Notice is provided as a notification of a potential source of degradation of a safety related component that is still under review by the NRC staff. It is expected that recipients will review the information for possible applicability to their facility. No specific action or response is requested at this time. If you have any questions regarding this matter, please contact the director of the appropriate NRC Regional Office.

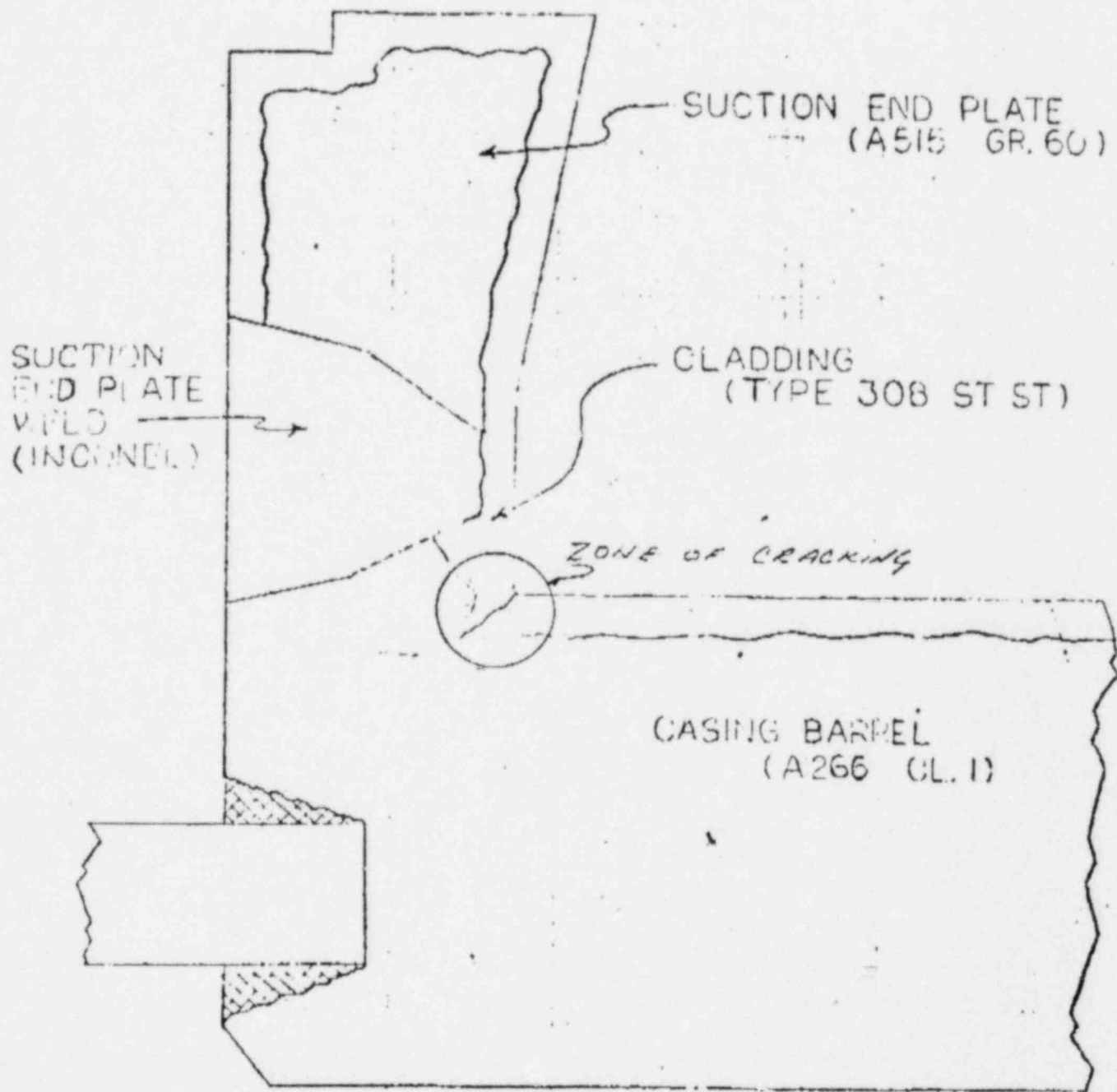
Enclosure:  
Figure 1

RECENTLY ISSUED  
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
80-37	Containment cooler leaks and reactor cavity flooding at Indian Point Unit 2	10/24/80	All nuclear power facilities holding power reactor OLs or CPs
80-36	Failure of Steam Generator Support Bolting	10/10/80	All nuclear power reactor facilities holding power reactor OLs or CPs
80-35	Leaking and dislodged Iodine-124 implant seeds	10/10/80	All categories G and G1 medical licensees
80-34	Boron dilution of reactor coolant during steam generator decontamination	9/26/80	All pressurized water reactor facilities holding power reactor OLs
80-33	Determination of teletherapy timer accuracy	9/15/80	All teletherapy (G3) licensees
80-32	Clarification of certain requirements for Exclusive-use shipments of radioactive materials	8/12/80	All NRC and agreement state licensees
80-31	Maloperation of Gould-Brown Boveri Type 480 volt type K-600S and K-DON 600S circuit breakers	8/27/80	All light water reactor facilities holding OLs or CPs
80-30	Potential for unacceptable interaction between the control rod drive scram function and non-essential control air at certain GE BWR facilities	8/19/80	All boiling water reactor facilities holding power reactor OLs or CPs.
80-29	Broken studs on Terry turbine steam inlet flange	8/7/80	All light water reactor facilities holding power reactor OLs or CPs*

\* Operating Licenses or Construction Permits

FIGURE 1



POOR ORIGINAL

RIII'S CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION  
PERMIT HOLDERS (BWR's and PWR's)

Docket No. 50-315  
Docket No. 50-316

American Electric Power Service  
Corporation  
Indiana and Michigan Power Company  
ATTN: Mr. John E. Dolan  
Vice Chairman  
Engineering and Construction  
2 Broadway  
New York, NY 10004

cc w/encl:  
Mr. D. V. Shaller,  
Plant Manager  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
AEOD  
Resident Inspector, RIII  
PDR  
Local PDR  
NSIC  
TIC  
Ronald Callen, Michigan  
Public Service Corporation

RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Docket No. 50-266

Docket No. 50-301

Wisconsin Electric Power Company

ATTN: Mr. Sol Burstein  
Executive Vice President  
Power Plants

231 West Michigan  
Milwaukee, WI 53201

cc w/encl:

Mr. G. A. Reed, Plant  
Manager  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
Timothy Colburn, ORB/NRR  
AEOD  
Resident Inspector, RIII  
PDR

Local PDR  
NSIC  
TIC  
Sandra A. Bast, Lakeshore  
Citizens for Safe Energy  
Mr. John J. Duffy, Chief  
Boiler Inspector  
Mr. Peter Anderson, Wisconsin's  
Environmental Decade

Docket No. 50-305

Wisconsin Public Service  
Corporation

ATTN: Mr. E. R. Mathews  
Vice President  
Power Supply and  
Engineering

P. O. Box 1200  
Green Bay, WI 54305

cc w/encl:

D. C. Hintz, Plant  
Superintendent  
Mr. W. Sayles, Chief  
Engineer  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR

AEOD  
Resident Inspector, RIII  
PDR  
Local PDR  
NSIC  
TIC  
Mr. John J. Duffy, Chief  
Boiler Inspector



RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Docket No. 50-440

Docket No. 50-441

The Cleveland Electric Illuminating  
Company

ATTN: Mr. Dalwyn R. Davidson  
Vice President - Engineering

P. O. Box 5000  
Cleveland, OH 44101

cc w/encl:

Central Files

Director, NRR/DPM

Director, NRR/DOR

PDR

Local PDR

NSIC

TIC

Harold W. Kohn, Power

Siting Commission

Mr. Daniel D. Wilt,

Attorney

Helen Evans,

State of Ohio

Docket No. 50-155

Docket No. 50-255

Consumers Power Company

ATTN: Mr. R. B. DeWitt

Vice President

Nuclear Operations

212 West Michigan Avenue

Jackson, MI 49201

cc w/encl:

Mr. D. P. Hoffman, Nuclear  
Licensing Administrator

Mr. C. J. Hartman,  
Plant Superintendent

Mr. R. W. Montross, Manager

Central Files

Director, NRR/DPM

Director, NRR/DOR

AEOD

Resident Inspectors, RIII

PDR

Local PDR

NSIC

TIC

Ronald Callen, Michigan

Public Service Commission

Myron M. Cherry, Chicago

RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Docket No. 50-329  
Docket No. 50-330

Consumers Power Company  
ATTN: Mr. James W. Cook  
Vice President  
Midland Project  
1945 West Parnafl Road  
Jackson, MI 49201

cc w/encl:  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
PDR  
Local PDR  
NSIC  
TIC  
Ronald Callen, Michigan  
Public Service Commission  
Myron M. Cherry, Chicago

Docket No. 50-409

Dairyland Power Cooperative  
ATTN: Mr. F. W. Linder  
General Manager  
2615 East Avenue - South  
La Crosse, WI 54601

cc w/encl:  
Mr. R. E. Shimshak,  
Plant Superintendent  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
AEOD  
Resident Inspector, RIII  
PDR  
Local PDR  
NSIC  
TIC  
Mr. John Duffy, Chief  
Boiler Inspector

RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Pocket No. 50-341

The Detroit Edison Company  
ATTN: Mr. Edward Hines, Assistant  
Vice President and Manager  
Quality Assurance  
2000 Second Avenue  
Detroit, MI 48226

cc w/encl:  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
AEOD  
Resident Inspector, RIII  
PDR  
Local PDR  
NSIC  
TIC  
Ronald Callen, Michigan Public  
Service Commission  
Eugene B. Thomas, Jr.,  
Attorney

Docket No. 50-461  
Docket No. 50-462

Illinois Power Company  
ATTN: Mr. W. C. Gerstner  
Executive Vice President  
500 South 27th Street  
Decatur, IL 62525

cc w/encl:  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
PDR  
Local PDR  
NSIC  
TIC  
Mr. Dean Hansell, Office of  
Assistant Attorney General  
Mr. Gary N. Wright, Chief  
Division of Nuclear Safety

RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Docket No. 50-331

Iowa Electric Light and Power  
Company

ATTN: Mr. Duane Arnold  
President

IE Towers  
P. O. Box 351  
Cedar Rapids, IA 52406

cc w/encl:

D. Mineck, Chief  
Engineer

Central Files  
Director, NRR/DPM  
Director, NRR/DOR

AEOD  
Resident Inspector, RIII

PDR  
Local PDR

NSIC  
TIC

Docket No. 50-367

Northern Indiana Public Service  
Company

ATTN: Mr. Eugene M. Shorb  
Senior Vice President

5265 Hohman Avenue  
Hammond, IN 46325

cc w/encl:

Central Files  
Director, NRR/DPM  
Director, NRR/DOR

PDR  
Local PDR

NSIC  
TIC

Mr. Dean Hansell, Office of  
Assistant Attorney General

RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Docket No. 50-263  
Docket No. 50-282  
Docket No. 50-306

Northern States Power Company  
ATTN: Mr. Dennis E. Gilberts  
Vice President  
Power Production and System  
Operation  
414 Nicollet Mall  
Minneapolis, MN 55401

cc w/encl:

Mr. W. A. Shamla,  
Plant Manager  
Mr. F. P. Tierney, Jr.,  
Plant Manager  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
AEOD

Resident Inspectors, RIII  
PDR  
Local PDR  
NSIC  
TIC  
John W. Ferman, Ph.D.,  
Nuclear Engineer, MPCA

Docket No. 50-546  
Docket No. 50-547

Public Service of Indiana  
ATTN: Mr. S. W. Shields  
Senior Vice President  
Nuclear Division  
Post Office Box 190  
New Washington, IN 47162

cc w/encl:

Mr. Steve J. Brewer, Nuclear  
Safety and Licensing Supervisor  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
PDR  
Local PDR  
NSIC

TIC  
LeBoeuf, Lamb, Leiby & MacRae  
Mr. Dave Martin, Office of the  
Attorney General  
Mr. John R. Galloway, Staff  
Director, Environment, Energy  
and Natural Resources Subcommittee

RIII's CORPORATE ADDRESSES FOR OPERATING LICENSEES AND CONSTRUCTION PERMIT HOLDERS  
(BWR's and PWR's)

Docket No. 50-346

Toledo Edison Company  
ATTN: Mr. Richard P. Crouse  
Vice President Nuclear  
Edison Plaza  
300 Madison Avenue  
Toledo, OH 43652

cc w/encl:

Mr. T. Murray, Station  
Superintendent  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
AEOD  
Resident Inspector, RIII  
PDR  
Local PDR  
NSIC  
TIC  
Harold W. Kohn, Power  
Siting Commission  
Helen W. Evans, State  
of Ohio

Docket No. 50-483

Docket No. 50-486

Union Electric Company  
ATTN: Mr. John K. Bryan  
Vice President - Nuclear  
P. O. Box 149  
St. Louis, MO 63166

cc w/encl:

Mr. W. H. Weber, Manager,  
Nuclear Construction  
Central Files  
Director, NRR/DPM  
Director, NRR/DOR  
PDR  
Local PDR  
NSIC  
TIC  
Region I & IV  
Ms. K. Drey  
Mr. Ronald Fluegge, Utility  
Division, Missouri Public  
Service Commission