

DISTRIBUTION:

Docket File bcc: TERA
 LB#1 Rdg. PDR
 JYoungblood LPDR
 MRushbrook NSIC
 LKintner TIC
 DEisenhut ACRS (16)
 SHanauer
 RMattson
 HThompson
 RVollmer
 RHartfield, MPA
 OELD
 OIE

APR 7 1982

Docket No.: 50-341

Mr. Harry Tauber
 Engineering & Construction
 Detroit Edison Company
 2000 Second Avenue
 Detroit, Michigan 48226

Dear Mr. Tauber:

Subject: "Fast Scram" Hydrodynamic Loads on Control Rod Drive Systems

We were recently informed by a vendor of control rod drive (CRD) systems of a potential reportable condition applicable to boiling water reactors (Enclosure). Specifically, this vendor indicates that its analysis of the hydrodynamic loads in the piping and on the supports of a particular CRD system for a "worst case" condition resulted in structural loads which were larger than some of the previous design loads for this system. These larger loads result from a rapid actuation of the CRD.

The conditions assumed by this vendor for its "worst case" calculation of the hydrodynamic loads were: (1) a design basis opening time of 20 milliseconds for the inlet line scram valve; and (2) a scram during the start-up phase of the plant with no pressure in the reactor vessel. The vendor also stated that its modeling of the CRD system may not be sufficiently representative of the actual system to accurately calculate hydrodynamic loads.

This matter has been previously discussed with the members of Licensing Review Group II (LRG II). This group agreed to pursue this issue on their individual dockets. Accordingly, we will consider this matter to be an open item on your docket until we can resolve this issue.

Our concern in this matter is that the hydrodynamic loads in the CRD system for your facility may not have been properly evaluated. Accordingly, we request that you provide the following information for your facility.

1. The design basis opening time for the inlet line scram valve.
2. An evaluation of the hydrodynamic loads in your CRD system resulting from actuation of the inlet line scram valve using the design basis opening time specified in Item 1.

8205040199

OFFICE							
SURNAME							
DATE							

Mr. Harry Tauber

- 2 -

APR 7 1982

3. A description of the conditions and configurations of the plant which result in the maximum hydrodynamic loads in the CRD system.
4. A statement regarding the appropriateness of the mathematical model used to calculate the hydrodynamic loads in the CRD system resulting from a scram.
5. A comparison of the hydrodynamic loads evaluated in Item 2 with the present design basis loads for the CRD system.

In the event that the hydrodynamic loads calculated for your facility exceed the present design basis structural loads for the CRD system, indicate which components are affected and submit a proposed plan for structurally reinforcing the affected components.

Please amend your application to provide the above requested information. Our review schedule is based on the assumption that the additional information will be available for our review by August 1, 1982. If you wish clarification of the requests or if you cannot meet these dates, please telephone the Licensing Project Manager, L. Kintner, within 7 days after receipt of this letter.

Sincerely,

Original signed by:
B. J. Youngblood,
B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing

Enclosure:
As stated

cc w/encs.: See next page

OFFICE	DL:LB#1	DL:LB#1					
SURNAME	LLKintner/lg	BJYoungblood					
DATE	3/29/82	3/17/82					

Mr. Harry Tauber
Vice President
Engineering & Construction
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

cc: Mr. Harry H. Voigt, Esq.
LeBoeuf, Lamb, Leiby & MacRae
1333 New Hampshire Avenue, N. W.
Washington, D. C. 20036

Peter A. Marquardt, Esq.
Co-Counsel
The Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Mr. William J. Fahrner
Project Manager - Fermi 2
The Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Mr. Larry E. Schuerman
Detroit Edison Company
3331 West Big Beaver Road
Troy, Michigan 48064

David E. Howell, Esq.
3239 Woodward Avenue
Berkley, Michigan 48072

Mr. Bruce Little
U. S. Nuclear Regulatory Commission
Resident Inspector's Office
6450 W. Dixie Highway
Newport, Michigan 48166

Dr. Wayne Jens
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Mr. James G. Keppler
Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137



ENCLOSURE

Reactor Controls, Inc.

October 14, 1981



Director Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: A Potential Reportable Condition

Gentlemen:

The purpose of this letter is to bring to the attention of your office and the other organizations listed on an attachment to this letter, a condition that Reactor Controls believes may present a Potential Reportable Condition affecting safety of the Control Rod Drive Hydraulic System in the Boiling Water Reactor plants for which Reactor Controls supplied portions of the system. The item that causes our concern is as follows.

While performing the stress analysis of the piping and supports of the system for a BWR-6 unit, we were required to consider hydro dynamic loads. To do so RCI requested the opening time of the Inlet Line Scram Valve. The reply stated the time to be twenty milliseconds. Using this opening time, the resultant hydro dynamic load required modifications to the design of the pipe supports. This was on the basis of using the worst case, ie, during a start up scram when there is no pressure in the reactor vessel, resulting in a greater differential pressure from the accumulator.

At that time we thought that the "Fast Scram" feature of the BWR-6 was introducing a new load condition on the system. But upon further inquiry we have been informed by General Electric Company that the same valve opening time applies to earlier units of the Boiling Water Reactor also.

Reactor Controls has fabricated and installed the piping and supports for many Control Rod Drive Hydraulic Systems and designed those supports without considering Hydro Dynamic loads due to the scram function.

Our concern is that this additional load may represent a potential safety consideration for those plants whose design did not include it. Consequently we feel our obligation is to inform your office. By copy of this letter we are also informing those utilities constructing or operating plants for which Reactor Controls has provided portions of the Control Rod Drive Hydraulic System.

However we are also aware of, and wish to point out, that the Control Rod Drive Hydraulic System has many years of successful operation at all plants without

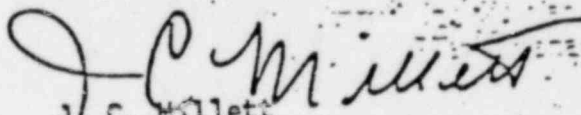
Reactor Controls, Inc.

October 14, 1981

Page 2

any reported difficulties from this load. Our findings are the result of analysis using computer programs that may not parallel the system closely enough to represent the actual condition. But we are taking the opportunity by this letter to inform you of the facts as we presently understand them.

Very truly yours,


J. C. Millett
Vice President
REACTOR CONTROLS, INC.

Attachment

JCM:pk

Copies sent to:

Mississippi Power & Light Company
Post Office Box 756
Port Gibson, Mississippi 39150
Attn: Mr. George Rogers

Bechtel Power Corporation
15740 Shady Grove Road
Gaithersburg, Maryland 20760
Attn: Mr. Adrian Zaccaria,
Project Engineer

Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101
Attn: Mr. M.J. Cooney
Supt. of Nuclear Generation

Bechtel Power Corporation
Post Office Box 3965
San Francisco, California 94119
Attn: Mr. H.C. Morris
Project Engineer

Bechtel Power Corporation
Post Office Box 3965
San Francisco, California 94119
Attn: Mr. R. Elias
Project Engineer

LILCO.
Post Office Box 604
North Country Road
Wading River, New York 11792
Attn: Mr. W.J. Museler

Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690
Attn: Mr. B.R. Shelton

Stone & Webster Engineering Corporation
3 Executive Campus
Post Office Box 5200
Cherry Hill, New Jersey 08034
Attn: Mr. C. Zappile

Send Letter to:
John D. Leonard Jr.
Resident Manager
Fitzpatrick Nuclear Power Station
Post Office Box 41
Lycoming, New York 13093

Pilgrim Unit #1
Boston Edison Company
Plymouth, Massachusetts 02360
Attn: Mr. Peter O'Brien

Vermont Yankee
Post Office Box 157
Vernon, Vermont 05354
Attn: Mr. Fred Burger
QA Coordinator

Millstone Unit #1
Northeast Utilities Service Company
Post Office Box 270
Hartford, Connecticut 06101
Attn: Mr. Dick Werner

River Bend
Stone & Webster Engineering Corporation
3 Executive Campus
Post Office Box 5200
Cherry Hill, New Jersey 08034
Attn: Mr. C.G. White
Contract Administrator

Gulf States Utilities Company
Post Office Box 2951
Beaumont, Texas 77704
Attn: Mr. W.J. Cahill
Sr. Vice President-RBNG

Copies sent to:

Laguna Verde
EBASCO Services, Inc.
One Jericho Plaza
Jericho, New York 11753
Attn: Mr. N.P. Singh
Project Manager

Hatch
Georgia Power Company
E.I. Hatch Nuclear Plant
Post Office Box 442
Baxley, Georgia 31513
Attn: Mr. M. Manry
Plant Manager

TVA-Stride
Tennessee Valley Authority
640 E. Commerce Union Bank Building
Chattanooga, Tennessee 37401
Attn: Mr. J. Marcel Anderson
Purchasing Agent

Browns Ferry - TVA
Tennessee Valley Authority
640 E. Commerce Union Bank Building
Chattanooga, Tennessee 37401
Attn: Mr. J. Marcel Anderson
Purchasing Agent

Cooper
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68601
Attn: Mr. J. Pilant
Div. Manager of Licencing & Q.A.

Duane Arnold
Iowa Electric Light & Power Company
Post Office Box 351
Cedar Rapids, Iowa 52406
Attn: Mr. Karl Meyer
Manager of Nuclear Licencing

Brunswick
Carolina Power & Light Company
Post Office Box 1551 (M/C 7C3)
Raleigh, North Carolina 27602
Attn: Mr. S.R. Zimmerman
Manager of Licencing & Permits