

A 04/26/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)  
DISTRIBUTION FOR INCOMING MATERIAL

50-410

REC: CASE E G  
NRC

ORG: RHODE G K  
NIAGARA MOHAWK PWR

DOCDATE: 04/18/78  
DATE RCVD: 04/26/78

DOCTYPE: LETTER NOTARIZED: NO

COPIES RECEIVED

SUBJECT:

LTR 1 ENCL 0

RESPONSE TO ORAL REQUESTS MADE BY NRC... FURNISHING INFO CONCERNING SUBJECT  
FACILITY, (UNIT 2) COOLING TOWER.

PLANT NAME: NINE MILE POINT - UNIT 2

REVIEWER INITIAL: XJM  
DISTRIBUTOR INITIAL: *me*

\*\*\*\*\* DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS \*\*\*\*\*

ENVIRONMENTAL COMMENTS  
(DISTRIBUTION CODE C002)

FOR ACTION: ASST DIR MOORE\*\*LTR ONLY(1)  
PROJ MGR NORRIS\*\*LTR ONLY(1)

BR CHIEF REGAN\*\*LTR ONLY(1)  
LIC ASST DUNCAN\*\*LTR ONLY(1)

FOR INFO: VASSALLO\*\*LTR ONLY(1)  
FOR INFO: KANE\*\*LTR ONLY(1)

VARGA\*\*LTR ONLY(1)  
SERVICE\*\*LTR ONLY(1)

INTERNAL: REG FILE\*\*LTR ONLY(1)  
~~1 - E\*\*LTR ONLY(2)~~  
HANAUER\*\*LTR ONLY(1)  
ERNST\*\*LTR ONLY(1)  
YOUNGBLOOD\*\*LTR ONLY(1)  
VOLLMER\*\*LTR ONLY(1)  
J. COLLINS\*\*LTR ONLY(1)

NRC PDR\*\*LTR ONLY(1)  
OELD\*\*LTR ONLY(1)  
DENTON/MULLER\*\*LTR ONLY(1)  
BALLARD\*\*LTR ONLY(1)  
GAMMILL\*\*LTR ONLY(2)  
BUNCH\*\*LTR ONLY(1)  
KREGER\*\*LTR ONLY(1)

EXTERNAL: LPDR'S  
OSWEGO, NY\*\*LTR ONLY(1)  
NATL LAB ANL\*\*LTR ONLY(6)  
NSIC\*\*LTR ONLY(1)  
TIC\*\*LTR ONLY(1)  
ACRS CAT B\*\*LTR ONLY(0)

DISTRIBUTION: LTR 34 ENCL 0  
SIZE: 3P

CONTROL NBR: 781160153

\*\*\*\*\* THE END \*\*\*\*\*

*may  
ul*

THE UNITED STATES OF AMERICA  
DEPARTMENT OF THE ARMY  
OFFICE OF THE CHIEF OF STAFF

MEMORANDUM FOR THE CHIEF OF STAFF  
SUBJECT: [Illegible]

DATE: [Illegible]  
BY: [Illegible]

1. [Illegible]  
2. [Illegible]  
3. [Illegible]

4. [Illegible]  
5. [Illegible]

6. [Illegible]

7. [Illegible]

8. [Illegible]  
9. [Illegible]

10. [Illegible]  
11. [Illegible]

12. [Illegible]  
13. [Illegible]

14. [Illegible]

15. [Illegible]  
16. [Illegible]

17. [Illegible]  
18. [Illegible]

19. [Illegible]  
20. [Illegible]

21. [Illegible]  
22. [Illegible]  
23. [Illegible]  
24. [Illegible]  
25. [Illegible]  
26. [Illegible]  
27. [Illegible]  
28. [Illegible]

29. [Illegible]  
30. [Illegible]  
31. [Illegible]  
32. [Illegible]  
33. [Illegible]  
34. [Illegible]  
35. [Illegible]  
36. [Illegible]

37. [Illegible]

38. [Illegible]  
39. [Illegible]  
40. [Illegible]  
41. [Illegible]  
42. [Illegible]  
43. [Illegible]  
44. [Illegible]  
45. [Illegible]

46. [Illegible]

47. [Illegible]

48. [Illegible]  
49. [Illegible]  
50. [Illegible]

51. [Illegible]  
52. [Illegible]  
53. [Illegible]

NIAGARA MOHAWK POWER CORPORATION

NIAGARA  MOHAWK

300 ERIE BOULEVARD, WEST  
SYRACUSE, N. Y. 13202

April 18, 1978

Mr. Edson G. Case, Acting Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Case:

Re: Nine Mile Point Unit 2  
Docket No. 50-410

US NRC  
DISTRIBUTION SERVICES  
BRANCH

1978 APR 26 AM 8 46

RECEIVED DISTRIBUTION  
SERVICES UNIT

The following information responds to oral requests made by your staff regarding the Nine Mile Point Unit 2 cooling tower.

Section 8.4.1.3.11 of the Environmental Report-Construction Permit Stage and Figure 14 of the "Report on Circulating Water Cooling System Employing a Natural Draft Cooling Tower," July 1976, do not agree with respect to the predicted area affected by plant noise. The data contained in the latter report are more recent and accurate. These values should be used for plant noise evaluation. The major reasons for the differences in the predictions are as follows:

- 1) The Ellis Method<sup>1</sup> used to evaluate noise for the Environmental Report was the best method available at that time. This method was developed for small cooling towers. The Ellis Method overpredicts noise for large cooling towers. The predictions in the July 1976 report<sup>2,3</sup> were made using a new method based upon field measurements of a number of large cooling towers.
- 2) The 1976 noise calculations include the effect of atmospheric adsorption for transformer noise. The Environmental Report predictions did not and are therefore louder.

781160153

COO2  
ES  
1/0

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

Mr. Edson Case  
U. S. Nuclear Regulatory Commission

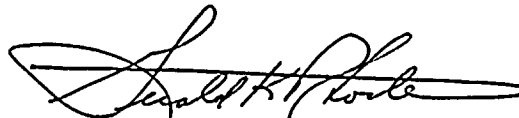
April 18, 1978  
Page Two

The discharge  $\Delta T$  calculated from the heat addition to the lake value ( $0.74 \times 10^9$  Btu/hr) on Page 6 of the "Report on Circulating Water Cooling System Employing a Natural Draft Cooling Tower," July, 1976, does not agree with the value in Response 14 of our September 30, 1977 submittal. The 19F  $\Delta T$  indicated in this latter report is the correct value and incorporates specific cooling tower vendor predictions. The discharge  $\Delta T$  of 19F is an annual average based on a discharge flow of 25,000 gallons per minute. The earlier calculations were not based upon a specific tower since the vendor had not been selected at that time.

The worst case lake surface temperature increase is about 2.7F. This corresponds to a combined plant discharge  $\Delta T$  of 30.6F and a flow of 18,020 gallons per minute. These calculations are based upon conservative worst case conditions of 32F lake temperature and a wet bulb air temperature of 57F at 45 percent relative humidity. Air temperature was selected from Rochester weather data for the period 1933 to 1972, and lake temperature was based upon 1972 weather conditions.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION



Gerald K. Rhode, Vice President  
System Project Management

NLR/szd

5-1-4-1  
2. 2

Mr. Edson Case  
U. S. Nuclear Regulatory Commission

April 18, 1978  
Page Three

REFERENCES

- 1  
R. M. Ellis, Cooling Tower Noise Generation and Radiation  
Journal of Sound and Vibration, Volume 14(2), Pages 171-182,  
1971.
- 2  
Capano, G. A.; Bradley, W.E., "Radiation of Noise From Large  
Natural Draft and Mechanical Draft Cooling Towers" ASME Paper  
No. 74-WA-HT-55.
- 3  
Capano, G.A.; Bradley, W.E., "Noise Predicting Techniques for  
Siting Large Mechanical Draft Cooling Towers" presented at the  
38th Annual Meeting of American Power Conference, April, 1976.

11-11-11  
312

11-11-11

11-11-11

11-11-11

11-11-11

11-11-11

11-11-11

11-11-11

11-11-11

11-11-11

11-11-11

11-11-11



DISTRIBUTION:

Docket files

NRC PDR

Local PDR

SVarga

LPM: Bill Kane

MService

LWR-4

Attorney OELD





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

APR 21 1978

Docket No. 50-410

Niagara Mohawk Power Corporation  
ATTN: Mr. Gerald K. Rhode, Vice President  
Systems Project Management  
300 Erie Boulevard West  
Syracuse, New York 13202

Gentlemen:

SUBJECT: REVISED INTRUSION DETECTION SYSTEMS HANDBOOK - Nine Mile Point 2

Transmitted under separate cover is a revision of the Intrusion Detection Handbook, SAND 76-0554, which may have been sent to you in May 1977. This handbook revision was prepared by the Facilities Protection Department, Sandia Laboratories, Albuquerque, New Mexico under contract with the Division of Safeguards and Security, Department of Energy (DOE) and is made available for your information as a reference source for use in the design, installation, and operation of intrusion detection systems. The attached revision supersedes the previous version.

In addition, we are also including two other reports in the same series: "Nuclear Safeguards Technology Handbook" dated December 1977, which outlines current safeguards technology development programs, and "Entry Control System Handbook" dated September 1977, which describes systems used to control access to and egress from controlled areas.

These documents are marked "Official Use Only." In releasing them to you, we request that distribution of the documents be controlled so that subsequent revisions may be sent to all recipients. Feedback from recipients of these handbooks should be addressed to Dr. Samuel C. T. McDowell, Assistant Director for Research and Development, Office of Safeguards and Security, Department of Energy, Washington, D.C. 20545.

Sincerely,

D. B. Vassallo, Assistant Director  
for Light Water Reactors  
Division of Project Management

Enclosures: (3)  
Under separate cover

cc w/o enclosures:  
See next page

*may*



Niagara Mohawk Power Corporation - -

ccs:

Arvin E. Upton, Esq.  
LeBoeuf, Lamb, Leiby & MacRae  
1757 N Street, N. W.  
Washington, D. C. 20036

Anthony Z. Roisman, Esq.  
Natural Resources Defense Council  
917 15th Street, N. W.  
Washington, D. C. 20005

Mr. Richard Goldsmith  
Syracuse University  
College of Law  
E. I. White Hall Campus  
Syracuse, New York 13210

T. K. DeBoer, Director  
Technological Development Programs  
New York State Energy Office  
Swan Street Building  
Core 1 - 2nd Floor  
Empire State Plaza  
Albany, New York 12223



MEETING SUMMARY - Mark II

✓ Notice File

HRC PDR

Local PDR

TIC

HRR Reading

LMR-#1 File

E. Case

R. Boyd

R. DeYoung

D. Vassallo

J. Stolz

K. Kniel

O. Parr

S. Varga

L. Crocker

D. Grutchfield

F. Williams

P. Mattson

H. Denton

D. Puller

Project Manager: I. Peltier

Attorney, LLP

E. Hylton

IE (3)

ACPS (16)

L. Dreher

HRC Participants:

S. Rubenstein

4/18/78

may  
WR







UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

APR 18 1978

Docket Nos: 50-358  
50-387  
50-352/353  
50-367  
50-373/374  
50-388  
✓50-410  
50-322

APPLICANTS: Members of Mark II Owner's Group

SUBJECT: MEETING WITH MARK II OWNER'S GROUP AND GENERAL ELECTRIC  
COMPANY TO DISCUSS THE MARK II CONTAINMENT POOL DYNAMICS  
LOAD PROGRAM - APRIL 6, 1978 - SAN JOSE

Background:

The staff's Mark II Containment Task Group (Task Action Plan No. A-8) met in Livermore, California and San Jose, California on April 5th and April 6th respectively to discuss the Livermore Fluid Structure Interaction Program and Submerged Structure Drag Loads Program and the Owner's Group Monticello SRV, Fluid Structure Interaction Studies, the staff's Pool Temperature Limits review, the 4T Fluid Structures Interaction Studies and other matters related to Mark II Containment Pool Dynamics. These meetings will be reported later when information becomes available from the Task Group. The DPM Mark II coordinator attended the San Jose meeting only.

Summary:

General Electric made a presentation on the effort underway to show that 4T impulse loads at the wall result in responses that will be bounded by the previously defined bounding loads. GE will informally write up what it is doing in this effort and provide the information to the staff. Another meeting will be held in Bethesda in about three weeks to present the results.

GE made a presentation on the FSI - SRV work using the Montecello bench work study to show that flexibility in the pool wall does not introduce lack of conservatism in comparison with the Livermore work.

The staff reported its preliminary conclusion that data are not adequate to support the pool temperature limit of 150°F for the ramshead. A position paper on this matter is being reviewed by management within the NRC.



APR 18 1978

The discussion on impact loads was deferred until the end of April at which time GE will address this problem.

All Mark II owners who originally planned to use the ramshead device have not made the decision to switch to quencher devices. The Cincinnati Gas and Electric Company (Zimmer) has decided to switch. It intends to continue plant analyses and modification on the basis of its own definition of ramshead bounding loads in anticipation that the quencher will provide additional margin. The staff cautioned CG&E that the DFFR loads are not necessarily acceptable to the staff and that the burden is on the applicant to establish that quencher loads are less than whatever bounding loads are used by the applicant.

At this time the Mark II owners plan to address SRV second actuation problems on an individual plant basis.

*I. Peltier*  
I. Peltier, Project Manager  
Light Water Reactors Branch No. 1  
Division of Project Management

cc: See Following Pages



APR 18 1978

Niagra Mohawk Power Corporation  
ATTN: Mr. Jerald K. Rhode  
Vice President Engineering  
300 Erie Boulevard West  
Syracuse New York 13202

Eugene B. Thomas, Jr.  
LeBoeuf, Lamb, Leiby & MacRae  
1757 N Street, N. W.  
Washington, D. C. 20036

Anthony Z. Roisman, Esq.  
Roisman, Kessler & Cashdan  
1025 15th Street, N. W.  
Washington, D. C. 20036

Mr. Richard Goldsmith  
Syracuse University  
College of Law  
E. I. White Hall Campus  
Syracuse, New York 13210

T. K. DeBoer, Director  
Technological Development Programs  
New York State Energy Office  
Swan Street Building  
Core 1 - 2nd Floor  
Empire State Plaza  
Albany, New York 12223



AAPR 18 1978

Washington Public Power Supply System  
ATTN: Mr. Kneil O. Strand  
Managing Director  
3000 George Washington Way  
Richland Washington 99352

Joseph B. Knotts, Jr., Esq.  
Debevoise & Liberman  
700 Shoreham Building  
806 Fifteenth Street, N. W.  
Washington, D. C. 20005

Richard Q. Quigley, Esq.  
Washington Public Power Supply System  
P. O. Box 968  
Richland, Washington 99352





APR 18 1978

Pennsylvania Power and Light Company  
ATTN: Mr. Norman W. Curtis  
Vice President, - Engineering  
and Construction  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. Earle M. Mead  
Project Manager  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Gerald Charnoff, Esq.  
Shaw, Pittman, Potts, Trowbridge  
& Madden  
1800 M Street, N. W.  
Washington, D. C. 20036

Mr. William E. Barberich  
Licensing Engineer  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. Robert J. Shovlin, Project  
Manager Susquehanna  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Hubert Barnes, Esq.  
Pennsylvania Power & Light Company  
901 Hamilton Street  
Allentown, Pennsylvania 18101

Edward M. Nagel, Esquire  
General Counsel and Secretary  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101



Commonwealth Edison Company.

ATTN: Mr. Byron Lee, Jr.

Vice President

P. O. Box 767

Chicago, Illinois 60690

Richard E. Powell, Esq.

Isham, Lincoln & Beale

One First National Plaza

2400

Chicago, Illinois 60670

APR 18 1978



APR 18 1978

Northern Indiana Public Service Company  
ATTN: Mr. H. P. Lyle, Vice President  
Electric Production & Engineering  
5265 Holman Ave.  
Hammond, Indiana 46325

Meredith Hemphill, Jr. Esq.  
Assistant General Counsel  
Bethlehem Steel Corporation  
Martin Tower  
Bethlehem, Pennsylvania 18016

William H. Eichhorn, Esq.  
Eichhorn, Morrow & Eichhorn  
5243 Hohman Avenue  
Hammond, Indiana 46320

Edward W. Osann, Jr., Esq.  
Wolfe, Hubbard, Leydid, Voit & Osann, Ltd.  
Suite 4600  
One IBM Plaza  
Chicago, Illinois 60611

Marvin N. Benn, Esq.  
Special Assistant Attorney General  
134 North LaSalle Street  
Suite 2222  
Chicago, Illinois 60602

Robert J. Vollen, Esq.  
109 North Dearborn Street  
Chicago, Illinois 60602



APR 18 1978

The Cincinnati Gas & Electric Company  
ATTN: Mr. Earl A. Borgmann  
Vice President - Engineering  
P. O. Box 960  
Cincinnati, Ohio 45201

Mr. William J. Moran  
General Counsel  
The Cincinnati Gas & Electric Co.  
P. O. Box 960  
Cincinnati, Ohio 45201

Mr. William G. Porter, Jr.  
Porter, Stanley, Arthur, & Platt  
37 West Broad Street  
Columbus, Ohio 43215

Mr. Robert Killen, Chairman of the  
Board & Chief Executive Officer  
The Dayton Power & Light Company  
P. O. Box 1034  
Dayton, Ohio 45401

Mr. J. Robert Newlin, Counsel  
The Dayton Power & Light Company  
P. O. Box 1034  
Dayton, Ohio 45401

Mr. Stephen Schumacher  
Miami Valley Power Project  
P. O. Box 252  
Dayton, Ohio 45401

Ms. Augusta Price  
601 Stanley Avenue  
Cincinnati, Ohio 45226

Mr. James D. Flynn  
Manager, Licensing & Environmental Affairs  
The Cincinnati Gas & Electric Company  
P. O. Box 960  
Cincinnati, Ohio 45201

Mr. J. P. Fenstermaker  
Senior Vice President - Operations  
Columbus & Southern Ohio Electric Co.  
215 North Front Street  
Columbus, Ohio 43215

David B. Fankhauser, PhD  
3569 Nine Mile Road  
Cincinnati, Ohio 45230

Thomas A. Luebbers, Esq.  
Cincinnati City Solicitor  
Room 214 - City Hall  
Cincinnati, Ohio 45202

Troy B. Conner, Esq.  
Conner, Moore & Cober  
1747 Pennsylvania Ave. N. W.  
Washington, D. C. 20006





APR 18 1978

Philadelphi Electric Company  
ATTN: Mr. Edward G. Bauer, Jr.  
Vice President and General  
Counsel  
2301 Market Street  
Philadelphia, Pennsylvania 19101

Eugene J. Bradley  
Philadelphia Electric Company  
Associate General Counsel  
2301 Market Street  
Philadelphia, Pennsylvania 19101

Troy B. Conner, Jr. Esq.  
Conner, Moore & Corber  
1747 Pennsylvania Avenue, N. W.  
Washington, D. C. 20006

W. William Anderson, Esq.  
Deputy Attorney General  
Room 512, Main Capitol Building  
Harrisburg, Pennsylvania 17120

Frank R. Clokey, Esq.  
Special Assistant Attorney General  
Room 218, Towne House Apartments  
P. O. Box 2063  
Harrisburg, Pennsylvania 17105

Honorable Lawrence Coughlin  
House of Representatives  
Congress of the United States  
Washington, D. C. 20515

Roger B. Reynolds, Jr., Esq.  
324 Swede Street  
Norristown, Pennsylvania 19401

Willard C. Hetzel, Esq.  
312 main Street  
East Greenville, Pennsylvania 18041

Lawrence Sager, Esq.  
Sager & Sager Associates  
45 High Street  
Pottstown, Pennsylvania 19464

Joseph A. Smyth  
Assistant County Solicitor  
County of Montgomery  
Courthouse  
Norristown, Pennsylvania 19404



APR 18 1978

Long Island Lighting Company  
ATTN: Mr. Andrew W. Wofford  
Vice President  
175 East Old Country Road  
Hicksville, New York 11801

Edward M. Barrett, Esq.  
General Counsel  
Long Island Lighting Company  
250 Old Country Road  
Mineola, New York 11501

Edward J. Walsh, Esq.  
General Attorney  
Long Island Lighting Company  
250 Old Country Road  
Mineola, New York 11501

Mr. Thomas Burke  
Project Manager  
Shoreham Nuclear Power Station  
P. O. Box 618  
Wading River, New York 11792

Director, Technical Development Programs  
State of New York Energy Office  
Agency Building 2  
Empire State Plaza  
Albany, New York 12223

Haward L. Blau  
Blau and Cohn, P. C.  
380 North Broadway  
Jericho, New York 11753

Irving Like, Esq.  
Reilly, Like and Schnieder  
200 West Main Street  
Babylon, New York 11702

MUB Technical Associates  
366 California Avenue  
Suite 6  
Palo Alto, California 94306





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

April 14, 1978

Docket No. 50-410

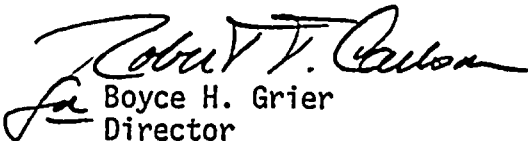
Niagara Mohawk Power Corporation  
ATTN: Mr. G. K. Rhode  
Vice President  
System Project Management  
300 Erie Boulevard, West  
Syracuse, NY 13202

Gentlemen:

Enclosed is IE Bulletin No. 78-05 which requires action by you with regard to your power reactor facility(ies) having an operating license or a construction permit.

Should you have questions regarding this Bulletin or the actions required, please contact this office.

Sincerely,

  
Boyce H. Grier  
Director

Enclosures:

1. IE Bulletin No. 78-05
2. List of IE Bulletins  
Issued in 1978

cc w/encls:  
Eugene B. Thomas, Jr., Esquire

002  
may  
W



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

IE Bulletin No. 78-05  
Date: April 14, 1978  
Page 1 of 2

MALFUNCTIONING OF CIRCUIT BREAKER AUXILIARY CONTACT MECHANISM - GENERAL  
ELECTRIC MODEL CR105X

Description of Circumstances:

The Sacramento Municipal Utility District recently reported a problem encountered with the operation of the GE Model CR105X auxiliary contact mechanism installed in a 480 volt circuit breaker. Investigation into the cause for the inability to shutdown a booster supply fan (SF-A-7) in the control room emergency air conditioning system revealed that an auxiliary contact (GE Model CR105X) had failed in the closed position, preventing the fan's power supply circuit breaker from opening. The specific cause for failure was binding of the plunger arm due to burrs and nicks on its surface.

An investigation was conducted by the licensee to determine the extent of usage of this type auxiliary contact in other circuits throughout the reactor power plant. Approximately fifty (50) positions in the nuclear service motor control centers were identified as having a similar type auxiliary contact mechanism. It was also determined that many of the affected systems which require contact operation similar to that described above, either permit or provide a safety feature function during emergency conditions. An example of this type application is auxiliary contacts that must open to permit closing of certain safety related valves from 480 volt motor control centers.

The attached GE Service Advice Letter and associated instruction/drawing sheet were sent to all nuclear power reactor facilities by GE Field Service Offices. The letter, together with the instruction/drawing sheet identifies the problem and provides the recommended corrective action.





Action To Be Taken By Licensees and Permit Holders:

For all power reactor facilities with an operating license or construction permit:

1. If you have received the enclosed General Electric letter and instruction/drawing sheet addressing the auxiliary contact mechanism problem, and if you have these devices in use at your facility, it is requested that you describe what corrective action you have taken.
2. If you have not received the enclosed GE documents before, it is requested that you describe what action you plan to take if the GE CR105X auxiliary contact mechanism is in use or planned for use in safety systems at your facility(ies).
3. Facilities having an operating license should report in writing, within 45 days, and facilities with construction permits within 60 days, the results of action taken or planned with regard to Items 1 and 2 above. Your written reply should also include the date when such actions were or will be completed. Reports should be submitted to the Director of the appropriate NRC Regional office and a copy should be forwarded to the U. S. Nuclear Regulatory Commission, Office of Inspection and Enforcement, Division of Reactor Operations Inspection, Office of Inspection and Enforcement, Washington, D. C. 20555.

Approved by GAO, B180225 (R0072); clearance expires 7/31/80. Approval was given under a blanket clearance specifically for identified generic problems.

Attachments:

1. GE Letter
2. GE Control and Instruction  
Sheet





# INSTRUCTIONS

for nema size 0 & 1 magnetic starters and contactors

**FIGURE 1**  
**REMOVING OVERLOAD RELAY MOUNTING BRACKET**

Diagram illustrating the components of a typical double auxiliary assembly for the left hand. The assembly includes a handle, trigger, safety catch, and lock. The diagram shows the assembly of the left hand side, with the right hand side being a mirror image. The components are labeled as follows:

- HANDLE (LEFT HAND)
- TRIGGER (LEFT HAND)
- SAFETY CATCH (LEFT HAND)
- LOCK (LEFT HAND)
- TRIGGER (RIGHT HAND)
- SAFETY CATCH (RIGHT HAND)
- LOCK (RIGHT HAND)
- HANDLE (RIGHT HAND)
- TRIGGER (LEFT HAND) - DETACHABLE
- TRIGGER (RIGHT HAND) - DETACHABLE
- TRIGGER (LEFT HAND) - DETACHABLE
- TRIGGER (RIGHT HAND) - DETACHABLE
- TRIGGER (LEFT HAND) - DETACHABLE
- TRIGGER (RIGHT HAND) - DETACHABLE

NOTE: HANDLE IS MOUNTED ON THE LEFT HAND AND TRIGGER IS MOUNTED ON THE RIGHT HAND

**FIGURE 2**



It has been brought to our attention that a potential binding problem may exist with the 100 Line CR105X... auxiliary interlocks mounted on NEMA size 00, 0 and 1 contactors, starters, or reversers used in control equipment manufactured by General Electric Co. (including 7700 Line motor control centers) and other control equipment manufacturers. The interlocks involved are used on the following devices.

CR105A, -B, -C, -H, -J, -K, -R, -S with additional suffix letters and numbers (contactors)

CR106A, -B, -C, -H, -J, -K, -R, -S with additional suffix letters and numbers (starters)

CR109A, -B, -C, -H, -J, -K, -R, -S with additional suffix letters and numbers (reversing starters)

If any of these devices are currently used in your installations, you should obtain replacement parts to correct this condition by forwarding the following information to my attention:

1. Complete catalog (CR) numbers on device nameplate.
2. Quantity of each device catalog number.
3. Are the auxiliary interlocks mounted on the left side, right side, or both sides of the device? How many are there at each location?

Since the General Purpose Control Department of the General Electric Co. does not know all applications of these interlocks, it is assumed that some may be in "critical" applications and should be changed out as soon as possible, while those in non-critical applications may be changed out at some routine maintenance period.

Since these interlocks are on devices which have been in service for over one (1) year and are out of our normal warranty period, we feel a fair and equitable solution would require that the necessary parts and instructions for the suggested changeout be provided by GE at no expense to the user. At your earliest convenience, please provide me with the information requested in paragraph 2 of this letter so that the necessary parts may be provided.

This information should be forwarded to:

General Electric Company  
P. O. Box 2913  
Bloomington, Illinois 61701

Attention: Mr. John E. Corbitt  
Product Service

(Dial Comm: 8\*325-4416, or 4294)



ENCLOSURE 2

LISTING OF IE BULLETINS  
ISSUED IN 1978

Bulletin No.	Subject	Date Issued	Issued To
78-01	Flammable Contact - Arm Retainers in G.E. CR120A Relays	1/16/78	All Power Reactor Facilities with an Operating License (OL) or Construc- tion Permit (CP)
78-02	Terminal Block Qualification	1/30/78	All Power Reactor Facilities with an Operating License (OL) or Construc- tion Permit (CP)
78-03	Potential Explosive Gas Mixture Accumula- tions Associated with BWR Offgas System Operations	2/8/78	All BWR Power Reactor Facilities with an Operating License (OL)
78-04	Environmental Quali- fication of Certain Stem Mounted Limit Switches Inside Reactor Containment	2/21/78	All Power Reactor Facilities with an Operating License (OL) or Construc- tion Permit (CP)

