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AUTH.NAME AUTHOR AFFILIATION
ARTHUR,J.E. Rochester Gas & Electric Corp.
RECIP.NAME RECIPIENT AFFILIATION
CRUTCHFIELD,D. Operating Reactors Branch 5

SUBJECT: Forwards comments on NRC review of operating experience "Non-DBE Reductions in Coolant Inventory (Leaks)" suggested as more appropriate categorization of steam generator tube leaks.

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ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649

NEW YORK STATE

JOHN ARTHUR
Vice President and Chief Engineer

TELEPHONE
AREA CODE 716 546-2700

November 25, 1981

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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U.S. NUCLEAR REGULATORY COMMISSION

Subject: Review of Operating Experience
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Crutchfield:

We have reviewed the NRC-Contractor prepared assessment of the Ginna operating experience which was provided by your letter dated October 8, 1981. Detailed comments are provided in Attachment 1 to this letter. A number of our comments relate to categorization of steam generator tube leaks as tube failures. Since leakage has been below 0.1 gallons per minute, we believe your categorization under the category "Decrease in Inventory" to be inappropriate. A more appropriate category is "Non-DBE Reductions in Coolant Inventory (Leaks)". We suggest that the report be revised accordingly.

As identified in your report, the "C" safety injection pump emergency bus breaker has been subject of a number of failures. Since the period covered by your report, we believe we have identified and remedied the source of those malfunctions. Attachment 2 to this letter describes the source of malfunction and the corrective actions taken.

Very truly yours,

John E. Arthur

J. E. Arthur

Attachments

A001
s/1

[illegible]

[illegible]

Attachment 1
Comments on NRC Report:
Ginna Operating Experience

| Page | Comment |
|---|---|
| 4-1 | If steam generator tube leaks are treated as leaks, and not as failures, the number of DBEs entered is 18, not 23. |
| 4-8 | The number of DBEs should be 18, not 23. |
| 4-9 | The line entitled steam generator tube failures should be deleted and totals should be corrected. |
| 4-11 | Fuel/cladding concerns resulted in power operation being limited to 1266 MWt during much of 1972 and the first half of 1973. |
| 4-14 | The repair of July 5, 1970 was to the pressurizer spray valve, not the pressurizer control valve. |
| 4-16 | At the top of the page, the block valve is upstream of the power-operated relief valve, not downstream. |
| 4-16 | A second refueling outage occurred in the fall of 1972 in which 48 fresh fuel assemblies were loaded. This resulted in removal of all failed fuel from the reactor. |
| 4-19 | With respect to the low pressure turbine, it should be noted that both low pressure turbine rotors have been replaced with rotors of an improved design. In addition, a spare rotor is being stored on site. |
| 4-21 | The number of DBEs should be 18, not 23. The phrase "five involved steam generator tube leaks" should be deleted. |
| 4-22 | Reporting requirements were revised on May 15, 1973 (in Change Number 8 to the Technical Specifications) and again on November 3, 1975 (in Amendment Number 8 to the Operating License, Change Number 17 to the Technical Specifications). Taking these changes into account, the statement that there is an upward trend in reportable events is incorrect and should be deleted. |

| Page | Comment |
|---|---|
| 4-27 | The report does not explain the rationale behind the categorization provided in Table 4.6 for the loss of offsite power of 1973, particularly with respect to significance category S7. |
| 4-28 | Regarding the spurious closure of the MSIVs, it is not clear that both MSIVs closed simultaneously due to flow impingement. It is possible that one MSIV closed spuriously and, due to the resulting pressure wave, the other closed. In addition, neither valve "failed". In fact, both valves performed their desired safety function of closing. Failure of the valve to close would, indeed, be a failure. A report of the June 6, 1975 event was provided to the NRC in the Annual Report for 1975, submitted by letter dated February 27, 1976. |
| 4-29 | Malfunction of valve position indication in itself did not reduce the capability of the safety injection system since a safety injection signal would cause the valves to go to their desired position regardless of position indication. |
| 4-34 | We suggest that the length of an outage is not an appropriate criteria for categorization as "conditionally significant". The length of an outage may be related only to commercial concerns and not to safety concerns. Thus, category C5 should be deleted. |
| 4-34 | The term "failed" steam generator tubes should be replaced with "leaking" steam generator tubes. |
| 4-35, 4-36 | Steam generator tube failures should be restated as steam generator tube leaks. |
| 4-38 | See attachment 2 to this letter for resolution of this issue. |
| 4-43 | Under report number 78-06, the last line of the description should read "snubbers" not "scrubbers". |

[illegible]

[illegible]

| Page | Comment |
|---|---|
| 4-44 | The fourth and fifth sentence of the second paragraph should be rewritten as follows to be consistent with current valve numbers and terminology: "The hydrogen cooler temperature rose, and the normal hydrogen cooler bypass valve (V-4229) closed. This caused the condensate bypass valve (V-3959) to open..." |
| 4-51, 4-54 | The number of reportable events per year should be related to changes in reporting requirements (see the comment regarding page 4-22). |
| 4-55 | Control rod malfunctions have apparently been resolved (see the discussion contained on report page 4-37). Safety injection pump C breaker problems apparently have been resolved although a subsequent failure has occurred (November 5, 1981). Attachment 2 discusses the resolution of previous failures. The most recent failure was due to a faulty lockout coil. A periodic replacement program should resolve the lockout coil problem. |
| A-6 | Item number 16 should refer to the pressurizer PORV block valve, not the relief valve. |
| A-9 | Item 5, paragraph A, second and third sentence should be revised to read: "The normal hydrogen cooler bypass valve (V-4229) closed due to high hydrogen cooler temperature. The condensate bypass valve (V-3959) opened..." |

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Attachment 2

Investigation of DB50 Breaker Failures

1. Letter dated May 27, 1981 from Ronald C. Johnson, Westinghouse to John H. Smith, RG&E.

2. Interoffice correspondence dated May 11, 1981 from G. W. Daniels, RG&E, to Bruce Snow, RG&E.

3. Interoffice correspondence dated June 18, 1981 from George S. Link, RG&E to Bruce A. Snow, RG&E.

[illegible]

[illegible]

[illegible]

Westinghouse
Electric Corporation

711 Exchange Street
Box 887
Rochester New York 14603
(716) 232 4380

May 27, 1981

Mr. John H. Smith
Rochester Gas & Electric Corporation
89 East Avenue
Rochester, New York 14649

Subject: Your PO EG-15187
Our GO Ref. RH36655Y8,
Evaluation of DB50 Breaker of
S.O. 27Y2384 from the Ginna
Nuclear Plant.

Dear John,

This letter is to summarize our findings at East Pittsburgh on April 22, 1981. We found that when the electrical lockout was energized there was no clearance between the electric lockout arm and the trip bar. This caused the breaker to fail to close reliably. There is a screw and locknut adjustment that should be set for 1/32-1/16" clearance between the electric lockout arm and the trip bar when the lockout is energized. We corrected this adjustment and the breaker subsequently closed reliably. This is a breaker manufacturing assembly adjustment that is not normally adjusted in the field.

Very truly yours,

Ronald C Johnson

Ronald C. Johnson
Sales Engineer

RCJ:sm

ROCHESTER GAS AND ELECTRIC CORPORATION

INTEROFFICE CORRESPONDENCE

May 11, 1981

SUBJECT: Results of Analyses and Testing Performed to Determine Cause of Failure of Certain W "DB-50" Circuit Breakers at Ginna Station (EWR 3073)

TO: Bruce Snow
Superintendent

In order to confirm the findings of preliminary analyses and tests performed at the site, Breaker SIP1C1 was sent to the East Pittsburgh Plant of Westinghouse for diagnostic testing. The result of these tests are described below.

The failure of Circuit Breaker SIP1C1 to close upon receipt of a close signal was determined to be due to inadequate clearance between the lockout assembly and the "tripper bar" which prevented the tripper bar from locking into the closed position, and therefore simulated an overcurrent condition in the breaker. It should be noted that the principal function of the tripper bar is to open the breaker when the overcurrent coil internal to the DB-50 breaker actuates (See figure 1). Existing instruction books for the "DB" breakers with the lockout attachment state there are no adjstments for this clearance, however, Westinghouse has since developed an adjustment method. By loosening the locknut, the elastic stop nut can be turned to adjust the clearance between the lockout assembly and the tripper bar. The clearance should be 1/32"-1/16" with the lockout coil in the energized position (See figure 2).

It is recommended that plant maintenance procedures be modified to check, and adjust if needed, clearance of the lockout assembly on "DB" breakers that have this lockout feature in accordance with the W procedure. This is in addition to any existing maintenance procedures that may apply. When maintenance procedures have been modified, reliability and availability of the breakers will be acceptable.

Installation of an auxiliary relay in lieu of the lockout assembly was considered, but rejected as the breaker interlock (designed to prevent paralleling busses 14 and 16) can then be defeated by manual closure.

For further assistance and information in this matter call John H. Smith of the Electrical Engineering Group.

G.W. Daniels GHS

G.W. Daniels
Manager, Electrical Engineering

Attachment

xc: R. Smith
J. Smith
G. Link
J. StMartin
R. Latz
C. Edgar
File/EWR 3073
Elec. Eng. File

13N1-RR-L0362

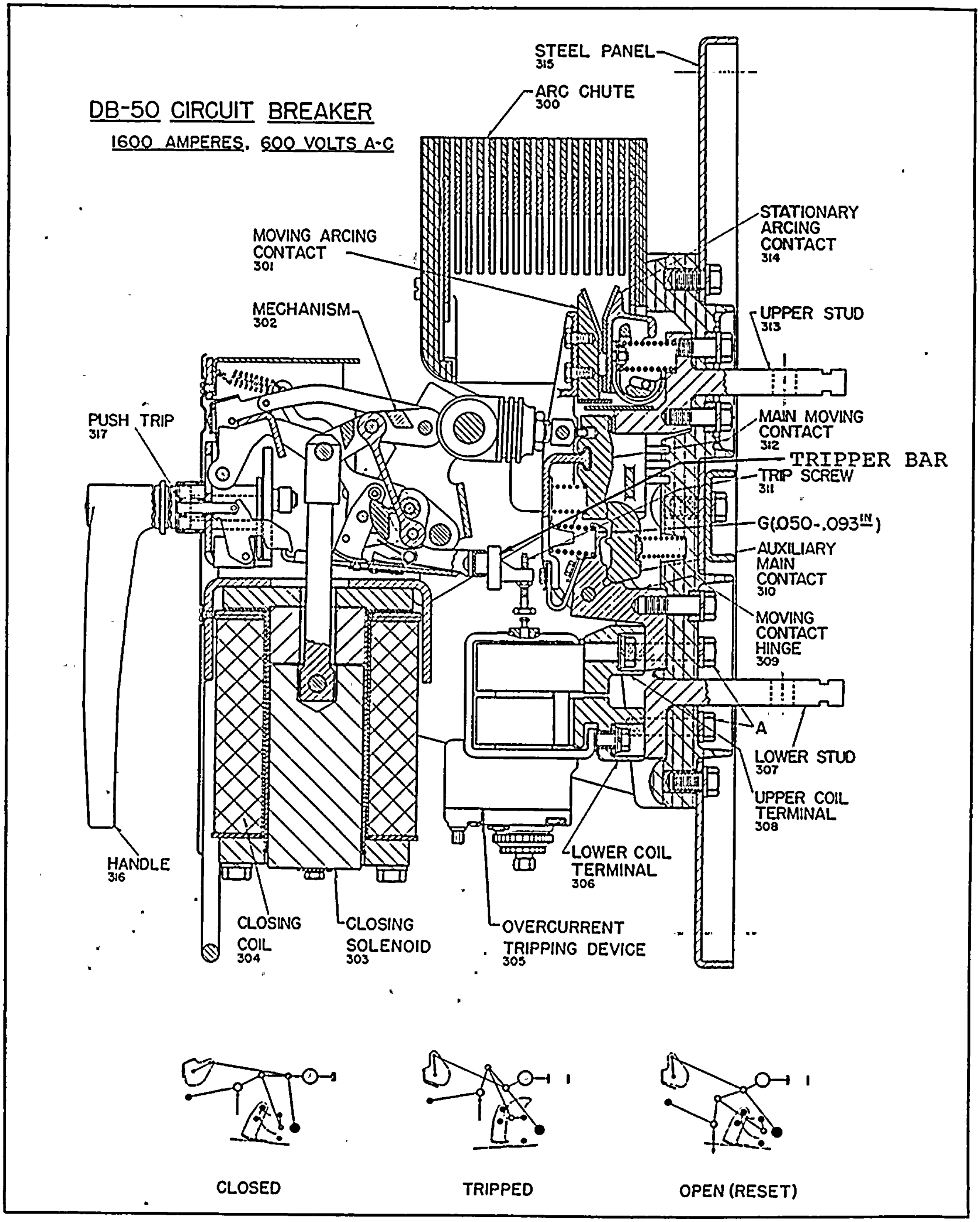


*Fig. 1 - Cross-Sectional View of Type DB-50 Circuit Breaker*

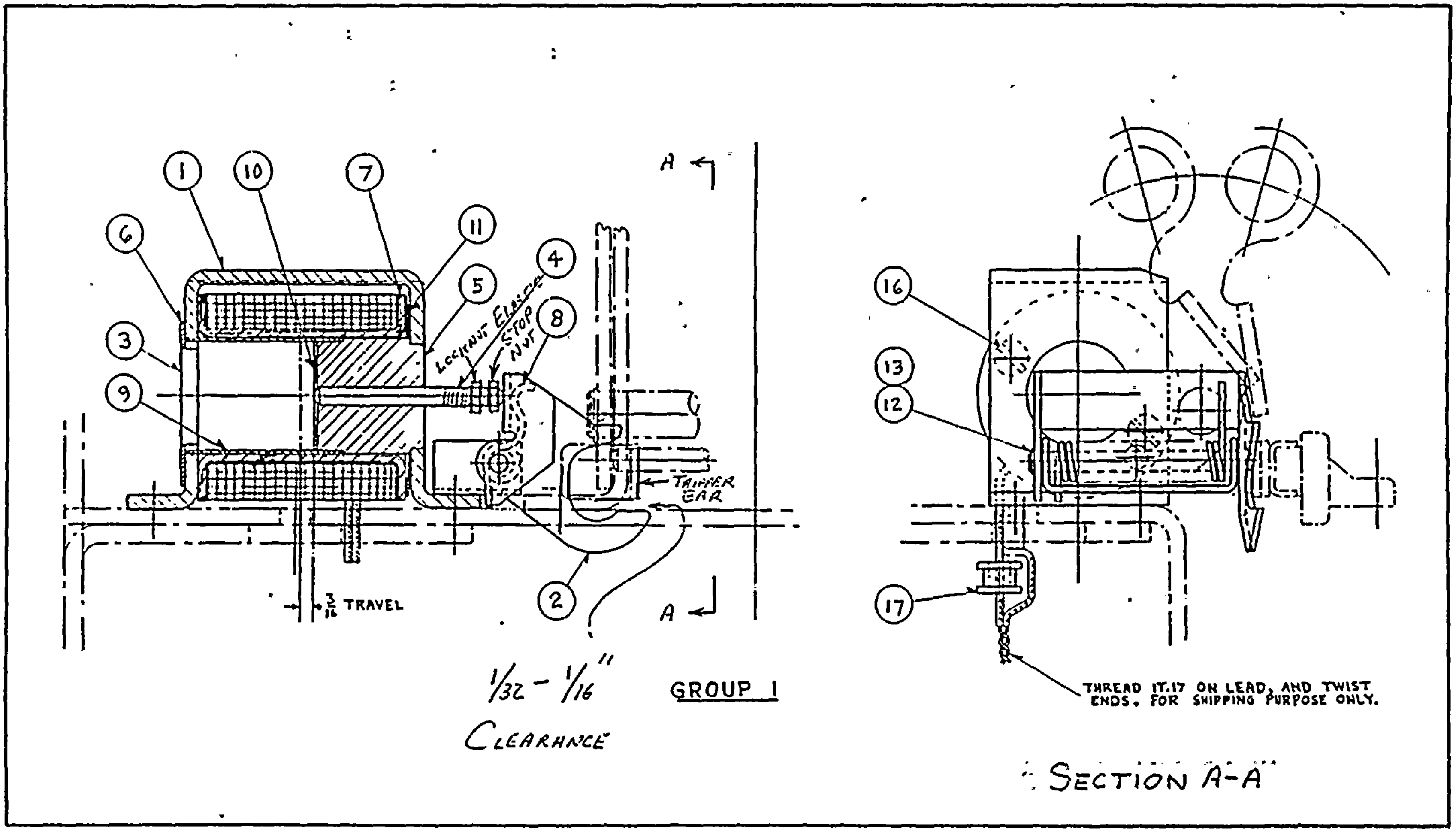


*Fig. 2 - Electric Lockout Attachment - Construction Details*

Figure 2

ROCHESTER GAS AND ELECTRIC CORPORATION

INTEROFFICE CORRESPONDENCE

June 18, 1981

SUBJECT: Close out of EWR 3073
DB-50 & DB-75 Circuit Breaker Failures

TO: Bruce A. Snow
Superintendent

RE: 1) May 11, 1981 memo
G.W. Daniels to B.A. Snow

2) March 19, 1981 memo
J. St.Martin to R.E. Smith

The results of the testing performed by Westinghouse on the DB-50 breakers were described in reference 1. The specific cause of the SIP1C1 breaker failures was determined to be the mechanical alignment of the lockout coil assembly and the tripper bar. This problem was localized within the breaker mechanism itself and not related to external control wiring or equipment. Corrective action was proposed and adjustments were made on all DB-50 breakers containing lockout coils.

A review of DB-75 circuit breaker failures, summarized in attachment 1, has also been made. These events have resulted principally from random component failures.

Since the DB-75 failure rate is not at this time unusually high, and does not exhibit any systematic failure mode, it is recommended that EWR 3073 be closed out.

Surveillance of DB-75 breakers should however, be continued and any new failures be brought to the attention of the Electrical Engineering Group.

George S. Link
George S. Link, P.E.
Senior Electrical Engineer

GSL:rh

xc: G.W. Daniels
R.E. Smith
J.H. Smith
L.S. Lang
R. Latz
G. Larizza
File/EWR 3073
Elec. Eng. File

13N1-RR-L0385

| DATE OF EVENT/NRC REPORT # | BREAKER | PROBABLE FAILURE MODE |
|---|---|---|
| 08/22/75 Unusual Event 75-5 | 1A Diesel Supply to Bus 16 | Not apparent from review of event. |
| 09/14/77 LER 77-19 | 1B Diesel Supply to Bus 16 | Secondary contact finger bent. |
| 08/16/78 LER 80-07 | 1B Diesel Supply to Bus 16 | Bad connection at control power fuse block. |
| 09/13/79 LER 79-18 | 1B Diesel Supply to Bus 16 | Overcurrent relay lacked continuity. |
| 09/10/80 LER 80-08 | 1B Diesel Supply to Bus 16 | Binding of control relay anti-pump release lever guide pin. |