



Commonwealth Edison

One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

October 10, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Byron Station Units 1 and 2
Supplemental Response to Generic Letter
No. 83-28, "Required Actions Based on
Generic Implications of Salem ATWS Events"
NRC Docket Nos. 50-454/455

- References (a): Generic Letter No. 83-28 D. G. Eisenhower
letter to All OLs and CPs dated July 8, 1983
(NL-83-0003)
- (b): P. L. Barnes to H. R. Denton letter dated
November 5, 1983 (NL-83-0520)
- (c): P. L. Barnes to H. R. Denton letter dated
February 29, 1984 (NL-84-0254)
- (d): P. L. Barnes to H. R. Denton letter dated
June 1, 1984

Dear Mr. Denton:

Reference (a) requested that the Commonwealth Edison
Company provide a written report of the status of current
conformance with positions contained in the subject letter.
References (b), (c) and (d) provided the status.

The attachment to this letter supplements the positions as
reported in References (b), (c) and (d).

To the best of my knowledge and belief the statements
contained in the Attachment are true and correct. In some respects
these statements are not based on my personal knowledge but upon
information furnished by other Commonwealth Edison employees,
consultants and contractors. Such information has been reviewed in
accordance with Company practice and I believe it to be reliable.

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Please address any questions that you or your staff may have concerning our response to Generic Letter No. 83-28 to this office.

Respectfully,

G. L. Alexander

G. L. Alexander
Nuclear Licensing Administrator

Attachment

cc: U.S. NRC, Document Control Desk
Washington, DC 20555

L. N. Olshan - LB1
J. G. Keppler - RIII
RIII Inspectors - BY

SUBSCRIBED and SWORN to
before me this 10th day
of October, 1984

Rosalie A. Pienta
Notary Public

9284N

ATTACHMENT

COMMONWEALTH EDISON COMPANY

Supplemental Response to Generic Letter No. 83-28

"Required Actions Based on Generic Implications of Salem ATWS Events"

Item 1.2 Post-Trip Review - Data and Information Capability

2. Capability for assessing the time history of analog variables needed to determine the cause of unscheduled reactor shutdowns, and the functioning of safety-related equipment.
3. Duration of time history (minute before trip and minutes after trip).

RESPONSE

The historic data file is maintained on the Prime Computer for seven days at one minute intervals.

4. Format for displaying data including scale (readability) of time histories.

RESPONSE

The historic data file on the Prime can be presented in several formats. The data can be trended visually or on hard copy. The data can be plotted both visually or on hard copy. Although the smallest time increment would be one minute (limited by data collection), the time frames can be expanded, as well as the scale for the units can be varied.

5. Capability for retention of data, information, and physical evidence (both hardware and software).

RESPONSE

The historic data file is stored every minute for seven days.

6. Power source(s) (e.g., Class IE, non-Class IE, non-interruptible).

RESPONSE

Power sources for both the process computer and prime computer are non-interruptible, being fed from inverters with DC backups.

3. Other data and information provided to assess the cause of unscheduled reactor shutdowns.

RESPONSE

Byron Statin can obtain additional information and data from strip chart recorders, operator logs, and personnel observation and knowledge as documented in BGP A 13.

4. Schedule for any planned changes to existing data and information capability.

RESPONSE

The communication link between the Process and Prime Computers is to be replaced with a high speed communication link. This will allow more frequent data samples and a more reliable data link. Installation is scheduled for the third quarter of 1985.

2.1 Equipment Classification and Vendor Interface
(Reactor Trip System Components)

2.2 Equipment Classification and Vendor Interface
(Programs for All Safety-Related Components)

RESPONSE

As stated in Reference (d) we plan to have the procedures in place by July 1, 1985. We feel that this amount of time is needed for implementation on a system wide basis. As recommended, items relating to the reactor protection system will be given priority.

4.2 Reactor Trip System Reliability
(Preventative Maintenance and Surveillance Program for
Reactor Trip Breakers)

1. A planned program of periodic maintenance, including lubrication housekeeping, and other items recommended by the equipment supplier.

RESPONSE

Reference (b) contained the answer to this item. For further clarification I am attaching a copy of BHP 4200-15 Rev. 3.

2. Trending of parameters affecting operation and measured during testing to forecast degradation of operability.

RESPONSE

Breaker response times will be trended to discover degradation of operability before a serious problem can arise.

3. Life testing of the breakers (including the trip attachments) on an acceptable sample size.
4. Periodic replacement of breakers or components consistent with demonstrated life cycles.

RESPONSE

To update our response contained in reference (d) the Westinghouse Owner's Group final report is scheduled for release at the end of December 1984. After reviewing the final report, CECO. will factor the results of the program into the maintenance, replacement and qualification programs.

4.3 Reactor Trip System Reliability (Automatic Actuation of Shunt Trip Attachment for Westinghouse and B&W Plants)

RESPONSE

Reference (d) contained our commitment to implement the modification by the first refueling outage. In addition, the responses to the thirteen questions concerning the shunt trip modification will be submitted by 2-15-85.

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PREVENTATIVE MAINTENANCE INSPECTION
REACTOR TRIP BREAKERS

A. STATEMENT OF APPLICABILITY

The purpose of this procedure is to describe the method used for performing a periodic maintenance inspection of the Reactor Trip Breakers Type DS-416.

B. REFERENCES

1. I.B. 33-790-1F-Instruction for Low Voltage Power Circuit Breaker Types DS and DSL

C. PREREQUISITES

1. Breaker should be racked out and Compartment should be out of service.

D. 2. Equipment Needed:

- a. Certified Digital Voltmeter
- b. 48VDC Power Supply
- c. Certified Timer. Multi Amp SST-2 or Equivalent

PRECAUTIONS

1. Verify that the breaker is open and in the disconnect position.
2. After removing breaker from cubicle, verify that the Breaker is discharged before starting work.

E. MAIN BODY

Record all Data on Checklist BHP 4200-T13.

1. Remove breaker from cubicle.

```
*****  
*                                     *  
*                               WARNING                               *  
*                                     *  
* AFTER REMOVING BREAKER FROM CUBICLE, VERIFY THAT *  
* THE BREAKER IS DISCHARGED BEFORE STARTING WORK. *  
*****
```

2. Visually inspect breaker and cubicle for broken, missing or deformed parts.
3. Check for presence and tightness of fasteners.

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```
*****
*                                     *
*                               WARNING *
*                                     *
*   USE CAUTION TO REMAIN CLEAR OF ENERGIZED BUS   *
*                                     *
*****
```

4. If both M/G set output breakers are Out of Service, clean breaker cubicle and record completion on checklist BHP 4200-T13.
5. Visually inspect breaker cubicle.
 - a. Check for any loose connection.
 - b. Check the appropriate fuse block for breakage or looseness. Fuse blocks are located in the front upper compartments of the switchgear. Record any discrepancies and corrective action taken on checklist BHP 4200-T13.
6. Remove and inspect Arc Chutes and Insulating Barriers. Record any discrepancies and corrective action taken on checklist BHP 4200-T13.
7. Clean breaker and record completion on checklist BHP 4200-T13.
 - a. Use approved cleaner if necessary such as Stoddards Solvent S.I. #499554, lint free rags and dry compressed air.
 - b. Verify breaker is free from corrosion.
8. Clean and inspect spring charging motor. Record any discrepancies and corrective action taken on checklist BHP 4200-T13.
9. Check auxiliary switch contacts and linkage condition. Record any discrepancies and corrective action taken on checklist BHP 4200-T13.
10. Lubricate breaker every 500 operations per Westinghouse I.B.33-790-1F pg. 81. Record completion on checklist BHP 4200-T13 Lubricant S.I. # 507322.
11. Inspect insulating surfaces for any condition that could cause a loss of insulating properties.
12. Check contact condition alignment and settings. Reference Westinghouse I.B. 33-790-1F pg. 75. Record any discrepancies and corrective action taken on checklist BHP 4200-T13.
13. Check the breaker operating mechanism for excessive wear, freedom of movement, and any component discrepancy.
14. Verify breaker reassembly complete.
15. Bench test breaker. Initial each step on checklist.
 - a. Provide 48VDC to breaker undervoltage trip device terminals 16(-) 15(+).

- b. Close and Open breaker manually.
- c. Close and Open breaker electrically.
- d. Measure and record the opening response time of the breaker using the test box control switch to open the breaker. (Shunt Trip). .075 second maximum.

- 1) With the breaker hooked up to the test box for closing and opening electrically, set up the timer as follows:

Typical SST-2 Multi-Amp timer setup.

- Yellow timer terminals jumpered to terminals 5 & 6 on the breaker. No polarity.
- Red timer terminals jumpered across any set of phase contacts. No polarity.
- Start latch on.
- Stop latch off.
- Start selector switch to "DC Applied".
- Stop selector switch to "N.C. Contacts".

- e. Measure and record the opening response time of the breaker upon loss of 48 VDC to the UV coil. .075 second maximum.

- 1) With the breaker hooked up to the test box for closing and opening, setup the timer as follows:

Typical SST- Multi-Amp timer setup.

- Yellow timer terminals jumpered to terminals 15 and 16 on breaker. No polarity to timer.
- Red timer terminals jumpered across any set of phase contacts. No polarity.
- Start latch on.
- Stop latch off
- Start selector switch to "DC Removed".
- Stop selector switch to "N.C. Contacts".

- f. Close breaker and reduce 48 VDC to point at which breaker trips. Record trip voltage. Verify trip between 14.4 VDC and 28.8 VDC.

- g. Disconnect instrumentation and test connections.

- h. Record all data on checklist BHP 4200-T13.

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16. Megger breaker and record findings on BHP 4200-T13.
17. If a discrepancy is found that cannot be corrected with available spare parts or by an adjustment, document on checklist BHP 4200-T13 and initiate a D.R. if required per Q.P. 15-53.
18. Replace breaker in proper cubicle.
19. Notify Shift Engineer that this inspection was completed and the applicable operating surveillance may be performed. Have Shift Engineer sign and date on checklist BHP 4200-T13.

F. CHECKOFF LISTS

1. BHP 4200-T13 Reactor Trip Breaker Inspection Checklist.

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REACTOR TRIP BREAKER
INSPECTION CHECK LIST

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EPN # _____ Procedure Used BHP 4200-015 Rev. _____

Compt. _____ Inspected By _____ Date _____

Breaker S/N _____ Operation Counter Reading _____/_____

MAIN BODY

<u>Step</u>	<u>Initial</u>	<u>Comments</u>
4. Clean Cubicle	_____	_____
5. Inspect Cubicle	_____	_____
6. Arc Chutes	_____	_____
7. Clean Breaker	_____	_____
8. Charging Motor	_____	_____
9. Auxiliary Switch	_____	_____
10. Lubricate Breaker	_____	_____
12. Contacts & Settings	_____	_____
13. Operating Mechanism	_____	_____
14. Breaker Reassembled	_____	_____
15. Bench Test Breaker	_____	Voltmeter BYEM # _____ QA # _____ TIMER BYEM * _____ QA # _____
a. 48 VDC to UV Device	_____	_____
b. Manual Operation	_____	_____
c. Electrical Operation	_____	_____
d. Shunt Trip Check	_____	Response Time - _____
e. UV Trip Check	_____	Response Time - _____
f. UV Trip Check	_____	Trip Voltage - _____
g. Disconnect Instruments And Test Connections	_____	_____

16. Insulation Resistance at 500 Volts

Test Set BYEM# _____ QA # _____

Breaker Closed (A)(B)(C) Frame _____
(A)(B) _____ (A)(C) _____ (B)(C) _____

Breaker Open Line to Load (A)(A) _____ (B)(B) _____ (C)(C) _____

19. Shift Engineer notified to perform reactor trip breaker surveillance.

S.E. _____/_____

Reviewed by Foreman:

Reviewed by Master Electrician:

FINAL

4. Schedule for any planned changes to existing data and information capability.

RESPONSE

The communication link between the Process and Prime Computers is to be replaced with a high speed communication link. This will allow more frequent data samples and a more reliable data link. Installation is scheduled for the third quarter of 1985.

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PRECAUTIONS

1. Verify that the breaker is open and in the disconnect position.
2. After removing breaker from cubicle, verify that the breaker is discharged before starting work.

E. MAIN BODY

Record all Data on Checklist BMP 4200-T13.

1. Remove breaker from cubicle.

```
*****  
*                               WARNING                               *  
*                               *                                     *  
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*
* WARNING *
*
* USE CAUTION TO REMAIN CLEAR OF ENERGIZED BUS *
*

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REACTOR TRIP BREAKER
INSPECTION CHECK LIST

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EPN # _____ Procedure Used BHP 4200-015 Rev. _____

Compt. _____ Inspected By _____ Date _____

Breaker S/N _____ Operation Counter Reading _____/_____

MAIN BODY

Step	Initial	Comments
4. Clean Cubicle	_____	_____
5. Inspect Cubicle	_____	_____
6. Arc Chutes	_____	_____
7. Clean Breaker	_____	_____
8. Charging Motor	_____	_____
9. Auxiliary Switch	_____	_____
10. Lubricate Breaker	_____	_____
12. Contacts & Settings	_____	_____
13. Operating Mechanism	_____	_____
14. Breaker Reassembled	_____	_____
15. Bench Test Breaker	_____	Voltmeter BYEM # _____ QA # _____ TIMER BYEM * _____ QA # _____
a. 48 VDC to UV Device	_____	_____
b. Manual Operation	_____	_____
c. Electrical Operation	_____	_____
d. Shunt Trip Check	_____	Response Time - _____
e. UV Trip Check	_____	Response Time - _____
f. UV Trip Check	_____	Trip Voltage - _____
g. Disconnect Instruments And Test Connections	_____	_____

16. Insulation Resistance at 500 Volts

Test Set BYEM# _____ QA # _____

Breaker Closed (A)(B)(C) Frame
(A)(B) _____ (A)(C) _____ (B)(C) _____

Breaker Open Line to Load (A)(A) _____ (B)(B) _____ (C)(C) _____

19. Shift Engineer notified to perform reactor trip breaker surveillance.

S.E. _____/_____

Reviewed by Foreman:

Reviewed by Master Electrician:

FINAL