



*R. files*

# Commonwealth Edison Company

ONE FIRST NATIONAL PLAZA ★ CHICAGO, ILLINOIS

Address Reply to:

POST OFFICE BOX 767 ★ CHICAGO, ILLINOIS 60690

February 16, 1973

Mr. Boyce H. Grier  
Regional Director  
Directorate of Regulatory  
Operations - Region III  
U.S. Atomic Energy Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Subject: Information Concerning Limitorque Operators  
at Quad-Cities and LaSalle County Stations,  
AEC Dkts 50-254, 50-265, 50-373 and 50-374

Dear Mr. Grier:

Commonwealth Edison's letter of January 16, 1973, indicated that the review of the Quad-Cities Station for Limitorque Valves with possible defective torque switches was not completed. This letter provides the requested information for the Quad-Cities Station, as well as the proposed La Salle County Station. An outline of your questions and our response is as follows:

## Information requested:

1. The number of valves having model SMB-00 and SMB-000 valve operators equipped with torque switches with a weak return spring which could prevent resetting of the torque switch after an operation.
2. A list of the systems in which these particular valves are installed.
3. A description of the corrective actions.
4. A schedule of completion dates of the corrective actions.

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FEB 21 1973

*50-254-265  
inquiry*

Mr. Boyce H. Grier

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February 16, 1973

Response:

Quad-Cities

1. There are 272 Limitorque model SMB-00 and SMB-000 valve operators installed at Quad-Cities on Units 1 and 2.

2. The systems in which these valves are installed are:

- Recirculating Piping
- Main Steam Piping
- Control Rod Drive
- Residual Heat Removal
- Reactor Water Cleanup
- Core Spray
- Pressure Suppression System
- High Pressure Cooling Injection
- Extraction Steam Piping
- Condensate System
- Heater Vent & Drain Piping
- Reactor Building Closed Cooling Water
- Service Water Piping
- Screen Wash & Fire Protection
- Turbine Building Equipment Drains
- Off Gas
- Standby Gas Treatment
- Turbine Auxiliaries

3. The corrective action to be taken at Quad-Cities will be to replace the torque switches on all valves on the safety related systems equipped with SMB-00 and SMB-000 valve operators. There are 86 of these valves on safety related systems with torque switches that will be replaced.
4. The schedule for the corrective action is to replace 15 torque switches per month beginning April 1, 1973. Torque switches on valve

Commonwealth Edison Company

Mr. Boyce H. Grier

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February 16, 1973

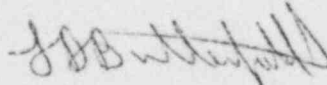
operators on safety related systems that can be replaced without unit outages will be replaced by November 1, 1973. The remainder of the 86 torque switches that require replacement will be replaced during the first scheduled outage of each unit. The torque switches on valve operators on non-safety related systems will be replaced as required but not on a scheduled basis.

La Salle County

1. The Limitorque model SMB-00 and SMB-000 valve operators to be installed at LaSalle County Station will not be of the 1969 - mid-1971 production group and will require no corrective action.

This should complete the information requested in your letter of December 6, 1972. If further information is required, please do not hesitate to call on me.

Very truly yours,



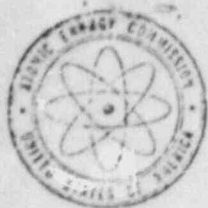
L. D. Butterfield, Jr.  
Nuclear Licensing Administrator

*R. E. Fisher*

MEMO ROUTE SLIP Form AEC-93 (Rev. May 14, 1947) AECM 0240		See me about this. Note and return.	For concurrence. For signature.	For action. For information.
TO (Name and unit) RO Chief, RT&OB RO Chief, RCB RO:HQ (4) Licensing (4) DR Central Files	INITIALS  DATE	REMARKS SUBJECT: COMMONWEALTH EDISON COMPANY Docket No. 50-254 Docket No. 50-265 Docket No. 50-373 and Docket No. 50-374		
TO (Name and unit) Other Regions PDR Local PDR NSIC DTIE	INITIALS  DATE	REMARKS		
TO (Name and unit) OGC, Beth, P-506A	INITIALS  DATE	REMARKS		
FROM (Name and unit) W. E. Vetter RO:III	REMARKS Attached is a copy of licensee's adequate reply dated February 16, 1973, to Bulletin No. 72-3.			
PHONE NO.	DATE 2-22-73			

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO : 1971 O - 415-489



UNITED STATES  
ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

*Robert*

TELEPHONE  
(312) 853-2560

January 24, 1973

Commonwealth Edison Company  
ATTN: Mr. Byron Lee, Jr.  
Assistant to the President  
P. O. Box 767  
Chicago, Illinois 60690

Docket No. 50-10  
50-237  
50-249  
50-254  
50-265  
50-295  
50-304

Gentlemen:

We have reviewed your letter of January 16, 1973, in response to our letter dated December 6, 1972, concerning limitorque valve operator malfunctions identified in Regulatory Operations Bulletin 72-3.

We have no further questions relative to this matter at the present time. However, regarding your letter of January 16, we understand that:

(1) valves in the Dresden Station Unit 1 fitted with SMB-00 and/or SMB-000 operators will receive replacement switches during the refueling outage currently scheduled to be completed during June 1973, (2) more complete information is to be available by January 31, 1973, relative to valve operators installed in the Quad-Cities plants, and (3) all valves in the Zion Unit No. 2 plant fitted with SMB-00 and/or SMB-000 valve operators will receive replacement switches by October 31, 1973.

Your cooperation with us in this matter is appreciated.

Sincerely yours,

*W.E. Grier/For*

Boyce H. Grier  
Regional Director

*Dupe*

*85/0030 54*

*50-254-265  
Inquiry*





# Commonwealth Edison Company

ONE FIRST NATIONAL PLAZA ★ CHICAGO, ILLINOIS

Address Reply to:

POST OFFICE BOX 767 ★ CHICAGO, ILLINOIS 60690

January 16, 1973

Mr. Boyce H. Grier  
Regional Director  
Directorate of Regulatory  
Operations - Region III  
U.S. Atomic Energy Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Subject: Limitorque Valve Operators with Possible  
Defective Torque Switches at Dresden,  
Quad-Cities and Zion Stations, AEC Dkts  
50-10, 50-237, 50-249, 50-254, 50-265,  
50-295 and 50-304

Dear Mr. Grier:

Your letter of December 6, 1972, included Directorate of Regulatory Operations Bulletin 72-3, requesting information on certain types of Limitorque valves which might be installed at our nuclear stations. An outline of your questions and our response for our nuclear stations is as follows:

Information requested:

1. The number of valves having model SMB-00 and SMB-000 valve operators equipped with torque switches with a weak return spring which could prevent resetting of the torque switch after an operation.
2. A list of the systems in which these particular valves are installed.
3. A description of the corrective actions.
4. A schedule of completion dates of the corrective actions.

JAN 18 1973

*Dupe 8010030359*

Mr. Boyce H. Grier

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January 16, 1973

Response:

The following comments are made in reply to the requirements of items 1, 2, 3 and 4 for Dresden, Quad-Cities and Zion Stations.

Dresden Station

Unit 1:

1. Seven valves
2. Limitorque model SMB-00 and SMB-000 valve operators are used only in seven valves on the recently installed core spray system.
3. The switches will be replaced.
4. All switches will be replaced by the end of the 1973 refueling outage which is presently scheduled to be completed by about June, 1973.

Units 2 and 3:

The Limitorque model SMB-00 and SMB-000 valve operators installed at Dresden Station are not of the vintage operator in question. Therefore, no corrective action is necessary.

Quad-Cities Station

There are more than 270 Limitorque model SMB-00 and SMB-000 valve operators at Quad-Cities. To verify the number and vintage of these valves will require additional time to gather serial numbers and data from Station records. We should have complete information by January 31, 1973.

When the information is available, the number to be replaced and the schedule for replacement will be forwarded to the AEC.

Mr. Boyce H. Grier

- 3 -

January 16, 1973

Zion Station

1. There are 182 of the subject Limitorque model SMB-00 and SMB-000 valve operators installed at Zion Station on Units 1 and 2.
2. The systems in which these valve operators are installed are:

- Auxiliary Steam Supply
- Chemical and Volume Control System
- Containment Spray System
- Blowdown System
- Component Cooling System
- Feed Water System
- Main Steam System
- Reactor Coolant System
- Residual Heat Removal System
- Safety Injection System
- Service Water System
- Turbine Building Vents and Drains

3. The corrective action to be taken at Zion Station will be to replace the torque switches on all valves equipped with model SMB-00 and SMB-000 valve operators with a modified torque switch supplied by the Limitorque Corporation.
4. All of the model SMB-00 and SMB-000 valve operators installed on Zion Unit 1 have been modified with new torque switches supplied by Limitorque Corporation.

All of the model SMB-00 and SMB-000 valve operators installed on Zion Unit 2 will have their torque switches replaced with modified torque switches by October 1973.



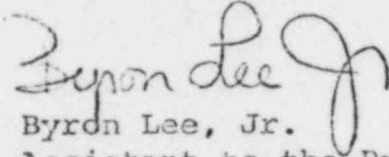
Mr. Boyce H. Grier

- 4 -

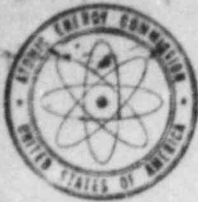
January 16, 1973

We trust that our program is responsive to your request. If further information is required, please do not hesitate to call on us.

Very truly yours,

A handwritten signature in cursive script, reading "Byron Lee Jr.", with a large, stylized "J" at the end.

Byron Lee, Jr.  
Assistant to the President



UNITED STATES  
ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

TELEPHONE  
(312) 858-2660

December 6, 1972

Commonwealth Edison Company  
ATTN: Mr. Byron Lee, Jr.  
Assistant to the President  
P. O. Box 767  
Chicago, Illinois 60690

Docket No. 50-10  
50-237  
50-249  
50-254  
50-265  
50-295  
50-304

Gentlemen:

The attached Directorate of Regulatory Operations Bulletin No. 72-3, "Limitorque Valve Operator Failures," is sent to you to provide you with information we received from the Northern States Power Company and the Commonwealth Edison Company concerning valve operator malfunctions experienced at their respective facilities. This information may relate to the performance of similar motor operated valves at your facilities. The Bulletin also requests certain action on your part related to this matter.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely yours,

Boyce H. Grier  
Regional Director

Attachment:  
RO Bulletin No. 72-3

bcc: RO Files  
DR Central Files  
PDR  
Local PDR

Dupe

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50-254-265  
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### Limitorque Valve Operator Failures

Regulatory Operations recently received information relating to the malfunction of electric type valve operators at two reactors. The valve operators were identified as Limitorque Models SMB-00 and SMB-000 which are used extensively in safety related systems at a number of PWR and BWR reactor facilities. Subsequent investigation identified a specific production group of these models which were manufactured between 1969 and mid-1971. The specific deficiencies are described as follows:

#### Plant A

Testing of valves and valve operators used in safety related systems at this facility disclosed ten valves that failed to close following a "valve full open operation" test. The cause of failure was attributed to malfunction of the valve operator torque switch due to a lack of proper clearance between the moving parts of the torque switch unit and the inability of the "torque switch torsion spring" to return the electrical contacts to a closed position following operation of the valve. The weak torsion spring is considered a common mode of failure. Approximately 150 valves ranging up to eight inches in size were equipped with valve operators having the faulty switches.

#### Plant B

During a reactor startup, the inboard steam supply valve of the reactor core isolation coolant (RCIC) system failed in the open position. Several attempts were made unsuccessfully to close the valve. The failure was attributed to an internal torsion spring in the valve operator torque switch which normally resets the electrical contacts. The valve operator in question is similar to the units which failed at Plant A.

Two additional facilities have recently experienced similar failures since those reported at plants A and B.

*Dupe  
8001300662*

It is requested that you determine whether valve operators of the described make, model, and vintage are installed or scheduled to be installed in your facility. If your findings show that valves installed or scheduled to be installed are equipped with the described valve operators, please inform this office within thirty days, in writing, of the number of valves equipped with the valve operators, the systems in which the subject valves are installed or scheduled to be installed, a description of corrective actions taken or planned, and the scheduled completion date of your corrective actions.