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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION V  
1990 N. CALIFORNIA BOULEVARD  
SUITE 202, WALNUT CREEK PLAZA  
WALNUT CREEK, CALIFORNIA 94596

May 14, 1980

Docket Nos. 50-133, 50-275, 50-323

Pacific Gas and Electric Company  
77 Beale Street  
San Francisco, California 94106

Attention: Mr. Philip A. Crane, Jr.  
Assistant General Counsel

Gentlemen:

The enclosed Circular No. 80-12, is forwarded to you for information. If there are any questions related to your understanding of the suggested actions, please contact this office.

Sincerely,

R. H. Engelken  
Director

Enclosures:

- 1. IE Circular No. 80-12
- 2. List of Recently Issued IE Circulars

cc w/enclosures:

- W. Barr, PG&E
- W. Raymond, PG&E
- R. Ramsay, PG&E, Diabio Canyon
- E. Weeks, PG&E, Humboldt Bay
- E. B. Langley, Jr., PG&E

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

SSINS No.: 6830  
Accession No.:  
8005050052

*Dupe*

May 14, 1980

IE Circular No. 80-12

VALVE-SHAFT-TO-ACTUATOR KEY MAY FALL OUT OF PLACE WHEN MOUNTED BELOW HORIZONTAL AXIS

Description of Circumstances:

Tennessee Valley Authority has identified and reported to the NRC a nonconformance on a Bettis Robot-Arm actuator installed on a Pratt Butterfly Valve at the Sequoyah nuclear plant.

It is reported (ref. attached 10 CFR 50.55e report) that a valve became inoperable when the valve-shaft-to-actuator key fell out of place. It is further noted that the orientation of this valve assembly was such that the operator was on the bottom of the valve (below the horizontal axis).

The Pratt Butterfly Valve furnished with Bettis actuator is designed with a press-fit keyway connection valve/actuator. We believe other manufacturer's connections may be of similar construction and therefore subject to this failure mode.

On May 1, 1980, Pratt Company sent letters to their customers who have these connections (enclosed list). They recommended that their customers review their installation of such connections, and if the keyway is oriented below horizontal, make one of the following field modifications:

1. Add a spacer bushing, or shim plate to fill the void between the top of the shaft and the indicating plate on the actuator.
2. Locally upset the end of the valve shaft in the area of the keyway using a hand punch in such a way that the key could not work loose.
3. Install new keys of longer length which extend above the end of the valve shaft whereby the key is up to the actuator plate and could not slip down if inverted.

Recommended Action for Licensee Consideration:

We request that all plants make the above recommended inspection of all connections similar to the above described Bettis/Pratt connection, whether or not supplied by those particular manufacturers. If connections are found that are susceptible to failure, one of the above recommended actions or other appropriate action should be taken to correct the potential problem.

No written response to this Circular is required. If you desire additional information regarding this matter, contact the Director of the appropriate NRC Regional Office.

ATTACHMENT 1  
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2  
NCR 19P  
10 CFR 50.55(c)  
REPORT NO. 1 (FINAL)  
LOOSE KEY IN BETTIS ROBOT-ARM VALVE ACTUATORS

Description of Condition

A containment isolation valve in Unit 1 became inoperable when the key which locks the actuator to the valve shaft fell out of place. This problem could occur with Bettis Robot-Arm valve actuators (model numbers 732C-SR80, 721C-SR60, 521C-SR60, CB525-SR60) when installed upside down or sideways. With the valve shaft mounted below horizontal, there is a potential for the key to work itself loose.

Safety Implications

If the valve actuator were to fall out, it would result in a loss of valve control. Since these valve actuators are on safety-related valves, this condition could have adversely affected or reduced the redundancy of safety-related systems.

Corrective Action

TVA has identified 51 suspect operators in the Purge Air System, Emergency Gas Treatment System and the Chilled Water System. Those operators that are installed so that the key can work loose will have spacer bushings installed in the actuator as recommended by the vendor. Installation of the spacer bushings will be completed before fuel loading. All TVA design project managers are being asked to ensure that this problem does not occur at other TVA nuclear plants.

ATTACHMENT 2  
LIST OF ADDRESSEES FOR MAY 1 LETTER  
FROM HENRY PRATT COMPANY

Metropolitan Edison - Three Mile Island #2  
Arkansas Power & Light Arkansas Nuclear One 1  
Wisconsin Public Service - Pioneer Service Kewaunee  
Northern States Power - Prairie Island 1 & 2  
Baltimore Gas & Electric - Calvert Cliffs 1 & 2  
Florida Power Corporation - Crystal River #3  
Florida Power & Light - St. Lucie #1 & 2  
Toledo Edison - Davis-Besse #1  
Alabama Power Company - Joseph M. Farley 1 & 2  
Tennessee Valley Authority - Sequoyah 1 & 2  
Pennsylvania Power & Light - Susquehanna 1 & 2  
Mississippi Power & Light - Grand Gulf 1 & 2  
Cleveland Electric Illuminating Company - Perry 1 & 2  
Commonwealth Edison Company - Zion 1 & 2  
Rochester Gas & Electric - Robert E. Ginna 1  
Westinghouse Hanford/FFTF  
Westinghouse - Phillipines  
Northeast Utilities - Millstone #3  
Tennessee Valley Authority - Stride

IE Circular No. 80-12  
May 14, 1980

Enclosure

RECENTLY ISSUED  
IE CIRCULARS

Circular No.	Subject	Date of Issue	Issued to
80-11	Emergency Diesel Generator Lube Oil Cooler Failures	5/13/80	All holders of a power reactor OL or CP
80-10	Failure to Maintain Environmental Qualification of Equipment	4/29/80	All holders of Reactor OLs and CPs
80-09	Problems With Plant Internal Communications Systems	4/28/80	All holders of a power reactor OL or CP
80-08	BWR Technical Specification Inconsistency - RPS Response Time	4/18/80	All General Electric BWR's holding a power reactor OL
80-07	Problems with HPCI Turbine Oil System	4/3/80	All holders of a power reactor OL or CP
80-06	Control and Accountability Systems for Implant Therapy Sources	4/14/80	Medical licensees in Categories G and G1
80-05	Emergency Diesel-Generator Lubricating Oil Addition and Onsite Supply	4/1/80	All holders of a power reactor OL or CP
80-04	Securing of Threaded Locking Devices on Safety-Related Equipment	3/14/80	All holders of a power reactor OL or CP
80-03	Protection from Toxic Gas Hazards	3/6/80	All holders of a power reactor OL
80-02	Nuclear Power Plant Staff Work Hours	2/1/80	All holders of Reactor OLs, including research and test reactors, and CPs
80-01	Service Advice for GE Induction Disc Relays	1/17/80	All licensees of nuclear power reactor operating facilities and holders of nuclear power reactor CPs