Central files

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

May 14, 1980

Docket No. 50-272
50-311

Public Service Electric and Gas Company
ATTN: Mr. F. W. Schneider
Vice President - Production
80 Park Place
Newark, New Jersey 07101

Gentlemen:

The enclosed IE Circular No. 80-12, "Valve-Shaft-To-Actuator Key May Fall Out of Place When Mounted Below Horizontal Axis," is forwarded to you for information. No written response is required. If you desire additional information regarding this matter, please contact this office.

Sincerely,

Boyce H. Grier

Boyce H. Grier
Director

Enclosures:
1. IE Circular No. 80-12 with Attachments
2. List of Recently Issued IE Circulars

CONTACT: D. L. Caphton
(215-337-5346)

cc w/encls:
F. P. Librizzi, General Manager - Electric Production
E. N. Schwalje, Manager - Quality Assurance
R. L. Mittl, General Manager - Licensing and Environment
H. J. Midura, Manager - Salem Generating Station

ENCLOSURE 1

SSINS No.: 6830
Accession No.:
8005050052

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

IE Circular No. 80-12
Date: May 14, 1980

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 non-conformance on a Bettis Robot-Arm actuator installed on a Pratt butterfly valve at the Sequoyah nuclear plant.

It is reported (ref. attached 10 CFR 50.55(e) 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 manufacturers' 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 (attached 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.

Attachments

ATTACHMENT 1
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
NCR 19P
10 CFR 50.55(e)
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

ENCLOSURE 2

IE Circular No. 80-12
Date: May 14, 1980

RECENTLY ISSUED IE CIRCULARS

Circular No.	Subject	First Date of Issue	Issued To
80-02	Nuclear Power Plant Staff Work Hours	2/1/80	All Power and Research Reactors with an Operating License (OL) or Construction Permit (CP)
80-03	Protection from Toxic Gas Hazards	3/6/80	All Power Reactor Facilities with an OL
80-04	Securing Threaded Locking Devices on Safety-Related Equipment	3/14/80	All Power Reactor Facilities with an OL or CP
80-05	Emergency Diesel Generator Lubricating Oil Addition and Onsite Supply	4/1/80	All Power Reactor Facilities with an OL or CP
80-06	Control and Accountability Systems for Implant Therapy Sources	4/14/80	Medical Licensees in Categories G and G1
80-07	Problems with HPCI Turbine Oil System	4/3/80	All Power Reactor Facilities with an OL or CP
80-08	BWR Technical Specification Inconsistency - RPS Response Time	4/18/80	All General Electric BWRs holding a power reactor OL
80-09	Problems with Plant Internal Communications Systems	4/28/80	All holders of a reactor OL or CP
80-10	Failure to Maintain Environmental Qualification of Equipment	4/29/80	All Power Reactor Facilities with an OL or CP
80-11	Emergency Diesel Generator Lube Oil Cooler Failures	5/13/80	All Power Reactor Facilities with an OL or CP