UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

MAY 14 1980

In Reply Refer To:
RII:JPO
50-369, 50-370
50-269, 50-270
50-287, 50-413
50-414

Duke Power Company
Attn: W. O. Parker, Jr.
Vice President, Steam Production
P. O. Box 2178
Charlotte, North Carolina 28242

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,

James P. O'Reilly
Director

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

8005290154

Q

cc w/encl:
J. W. Hampton, Station Manager
Post Office Box 392
Clover, South Carolina 29710

D. G. Beam, Project Manager
Post Office Box 223
Clover, South Carolina 29710

M. D. McIntosh, Plant Manager
Post Office Box 488
Cornelius, North Carolina 28031

J. C. Rogers, Project Manager
Post Office Box 33189
Charlotte, North Carolina 28242

J. E. Smith, Station Manager
Post Office Box 1175
Seneca, South Carolina 29678

SSINS No.: 6830
Accession No.:
8005050052

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

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 50.55(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 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.

Attachments:
1. 10 CFR 50.55(e) Report
2. List of Addresses

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

IE Circular No. 80-12
May 14, 1980

Enclosure

RECENTLY ISSUED
IE CIRCULARS

Circular No.	Subject	Date of Issue	Issued to
80-12	Valve-Shaft-To-Actuator Key May Fall Out of Place when Mounted Below Horizontal Axis	5/14/80	All holders of a power reactor OL or CP
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