

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

August 8, 1985

IE INFORMATION NOTICE NO. 85-67: VALVE-SHAFT-TO-ACTUATOR KEY MAY FALL OUT OF PLACE WHEN MOUNTED BELOW HORIZONTAL AXIS

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP).

Purpose:

This information notice is provided to alert recipients of a potentially significant problem pertaining to the renewed possibility of the valve-shaft-to-actuator key falling out of place when the motor operator is mounted below the horizontal axis. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Background:

On January 17, 1980 the Tennessee Valley Authority notified the NRC (NCR 19P) of the failure of a containment isolation valve to operate properly at their Sequoyah Nuclear Plant Units 1 and 2. The utility's investigation indicated that the failure was caused by the key, which locks the Bettis actuator to the Henry Pratt valve shaft, falling out of place.

On May 1, 1980, the Henry Pratt Company notified the NRC of this condition. The company indicated that they had alerted all of their nuclear customers of the problem and that they had provided their customers with recommendations for field modifications to correct the problem.

On the basis of the above notifications and a belief that other manufacturers may be using a similar connection method, the NRC issued IE Circular No. 80-12, "Valve-Shaft-to-Actuator Key May Fall Out of Place When Mounted Below Horizontal Axis," on May 14, 1980.

Description of Circumstances:

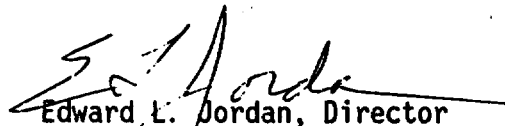
On December 14, 1984 the Arizona Nuclear Power Project notified the NRC (DER 84-101) of the failure of a containment isolation system valve to operate properly at their Palo Verde Nuclear Generating Station Units 1, 2, and 3. The utility's investigation indicated that the failure was caused by the key, which locks the Limatorque actuator to the Henry Pratt valve, falling out of place.

On May 23, 1985, the Henry Pratt Company notified (Part 21 Report No. 85-267) the NRC of this condition and indicated that they had alerted all of their nuclear customers of the problem. The company indicated that they had recommended that their customers inspect the actuator to shaft connections and that they had provided their customers with recommendations for changes to their valve installation, repair, and replacement procedures. These procedure changes recommended that ". . . Loctite 242 (formerly designated as CV) or 271 (formerly designated as AV) should be applied to all four sides of the key prior to reassembly if valve/operator connection is broken for any reason. Loctite Grade 277 is also acceptable although its higher shear strength may make its disassembly more difficult."

Henry Pratt also recommended that the NRC issue a supplement to IE Circular No. 80-12 to emphasize ". . . that when actuators of any type and manufacture are removed from Pratt valves and reinstalled in the field . . ." Loctite should be used. Because circulars are no longer issued, this recommendation is being met by this information notice.

It must be noted that this type of problem can occur not just in valves manufactured by Henry Pratt, but in any valve that uses a key to attach the actuator to the valve shaft when the actuator is mounted below the horizontal axis. While the NRC cannot recommend the use of Loctite on valves manufactured by companies other than Henry Pratt, it does suggest that each utility contact its valve manufacturers to determine the appropriate method of preventing the keys from falling out.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.


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and Engineering Response
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Attachment: List of Recently Issued IE Information Notices

LIST OF RECENTLY ISSUED
 IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
85-66	Discrepancies Between As-Built Construction Drawings And Equipment Installations	8/7/85	All power reactor facilities holding an OL or CP
85-65	Crack Growth In Steam Generator Girth Welds	7/31/85	All PWR facilities holding an OL or CP
85-64	BBC Brown Boveri Low-Voltage K-Line Circuit Breakers, With Deficient Overcurrent Trip Devices Models OD-4 and 5	7/26/85	All power reactor facilities holding an OL or CP
85-63	Potential for Common-Mode Failure of Standby Gas Treatment System on Loss of Off-Site Power	7/25/85	All power reactor facilities holding an OL or CP
85-62	Backup Telephone Numbers to the NRC Operations Center	7/23/85	All power reactor facilities holding an OL and certain fuel facilities
85-61	Misadministrations to Patients Undergoing Thyroid Scans	7/22/85	All power reactor facilities holding an OL and certain fuel facilities
85-60	Defective Negative Pressure Air-Purifying, Fuel Facepiece Respirators	7/17/85	All power reactor facilities holding an OL or CP
85-59	Valve Stem Corrosion Failures	7/17/85	All power reactor facilities holding an OL or CP
85-58	Failure Of A General Electric Type AK-2-25 Reactor Trip Breaker	7/17/85	All power reactor facilities designed by B&W and CE holding an OL or CP

OL = Operating License
 CP = Construction Permit