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SSINS No.: 6835  
IN 86-65

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

August 14, 1986

IE INFORMATION NOTICE NO. 86-65: MALFUNCTIONS OF ITT BARTON MODEL 580 SERIES SWITCHES DURING REQUALIFICATION TESTING

Addressees:

All nuclear power reactor facilities holding an operating license or a construction permit.

Purpose:

This notice is provided to alert recipients to a potentially significant safety problem pertaining to malfunctions of ITT Barton Model 580 Series indicating switches under accident conditions. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude malfunctions occurring at their facilities. However, suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Problem:

On April 14, 1986, NRC was notified by ITT Barton Instruments Company of the defect in accordance with 10 CFR Part 21. According to the report, during requalification testing of ITT Barton Model 580 Series indicating switches under loss-of-coolant accident conditions, switch malfunctions occurred when the chamber temperature was raised to 340°F. The symptoms of the malfunctions were:

- In three of the five instruments tested, one or both of the switches failed to operate (no change in switch state) when input pressure to the instrument was varied.
- Switch set-point shift in excess of the allowable 10 percent occurred on two of the instruments.

When the chamber temperature was lowered to room ambient, all of the switches changed state when input pressure was varied; however, the switch set-point shifts which occurred at temperature were permanent.

The initial report indicated that the failure was due to a specific component used, a Honeywell Snap-Acting Switch, part number 11SM 403. A subsequent report indicated that, as a result of additional testing, it was determined that there is also a deflection of the instrument case which affects the position of the snap switch and the setpoint. Furthermore, the deflection can result in failure of case seal integrity.

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ITT Barton has indicated that they are evaluating case/seal redesigns and a realistic date for completion of retesting would be April 15, 1987.


In previous tests, the instruments performed successfully when subjected to 220°F after aging, irradiation, and seismic testing.

This information notice is being issued to ensure that all nuclear power plant end-users have been notified of this problem.

A contact at ITT Barton Instruments Company knowledgeable of this problem is:

John P. Doyon  
Manager, Sales and Service  
(818) 961-2547 extension 456

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.

  
Edward L. Jordan, Director  
Division of Emergency Preparedness  
and Engineering Response  
Office of Inspection and Enforcement

Technical Contacts: Eric Weiss, IE  
(301) 492-9005

Pentti Koutaniemi, IE  
(301) 492-9428

Attachments: List of Recently Issued IE Information Notices

LIST OF RECENTLY ISSUED  
 IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
86-64	Deficiencies In Upgrade Programs For Plant Emergency Operating Procedures	8/14/86	All power reactor facilities holding an OL or CP
86-63	Loss Of Safety Injection Capability	8/6/86	All PWR facilities holding an OL or CP
86-62	Potential Problems In Westinghouse Molded Case Circuit Breakers Equipped With A Shunt Trip	7/31/86	All power reactor facilities holding an OL or CP
86-61	Failure Of Auxiliary Feed-water Manual Isolated Valve	7/28/86	All power reactor facilities holding a CP
86-60	Unanalyzed Post-LOCA Release Paths	7/28/86	All power reactor facilities holding an OL or CP
86-31 Sup. 1	Unauthorized Transfer And Loss Of Control Of Industrial Nuclear Gauges	7/14/86	All NRC general licensees that possess and use industrial nuclear gauges
86-59	Increased Monitoring Of Certain Patients With Implanted Coratomic, Inc. Model C-100 and C-101 Nuclear-Powered Cardiac Pacemakers	7/14/86	All NRC licensees authorized to use nuclear-powered cardiac pacemakers
86-58	Dropped Fuel Assembly	7/11/86	All power reactor facilities holding an OL or CP
86-57	Operating Problems With Solenoid Operated Valves At Nuclear Power Plants	7/11/86	All power reactor facilities holding an OL or CP
86-56	Reliability Of Main Steam Safety Valves	7/10/86	All PWR facilities holding an OL or CP

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OL = Operating License  
 CP = Construction Permit