

PRIORITY ATTENTION REQUIRED MORNING REPORT - REGION III MARCH 9, 1993

Licensee/Facility:

Notification:

Commonwealth Edison Co.
Lasalle 1
Marseilles, Illinois

MR Number: 3-93-0067
Date: 03/08/93
VIA SRI

Dockets: 50-373
BWR/GE-5

Subject: ISOLATION VALVE HYDRAULIC LOCKING

Reportable Event Number: N/A

Discussion:

On February 10, 1993, while restoring the Unit 1 reactor core isolation cooling (RCIC) system to standby after preventive maintenance, RCIC inboard containment steam isolation valve, 1E51-F063, tripped on thermal overloads. An unusual event was declared on February 13, 1993, when a shutdown was commenced to repair the valve. Disassembly of the valve revealed the stem/disc retainer pin to be sheared. The torque switch was found over-rotated and the close setting indicator had slid underneath the torque limiter plate, thereby raising the close torque switch setting. The torque switch set screws were found loose. The licensee determined the most likely valve failure cause to be not tightening the set screws following a modification during the recently completed refuel outage. This modification replaced the valve internals (with a new type) and actuator to reduce valve leakage. The unit was restarted on February 19, 1993, following valve repair and normal post-maintenance testing. The

licensee re-established the initial failure conditions to perform the additional testing on February 26, 1993. The valve failed to open as it again tripped on thermal overloads. An unusual event was declared on February 27, 1993, when a shutdown again commenced to repair the valve. During the shutdown process, drywell entries were made to perform additional testing. Upon disassembly, the retainer pin was again found sheared, but no problem was noted with the torque switch. Based upon this testing and consultation with the Anchor-Darling vendor design representative, the licensee determined the most likely cause to be hydraulic bonnet lock. This was particular to the valve design (double disc parallel-seat gate valve) and configuration with a steam bypass valve, 1E51-F076, to equalize pressure around valve 1E51-F063 prior to opening. To alleviate this failure mechanism, the licensee drilled two holes in the upstream disc. Following valve repair and normal post-maintenance testing (including a successful local leak rate test) the unit was restarted on March 6, 1993. Additional at pressure testing was successfully performed during the startup to ensure the effectiveness of the drilled holes. The licensee also verified similar type valves were not in the same type configuration such to be susceptible to the failure mechanism. The failure mechanism did not render the isolation valve inoperable since it still retained the ability to perform its close safety function. Since this was a normally open valve, RCIC also remained operable until the valve was closed. At this point, under certain conditions the valve would not reopen. During the final testing on March

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7, 1993, when bypass valve 1E51-F076 was opened, a Division II RCIC automatic primary containment isolation occurred. Operators opened the throttle valve too quickly causing a high steam flow signal.

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Regional Action:

Resident and regional inspectors followed the licensees activities. The residents will continue to monitor the valves performance.

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