

Possible failure of BIF (Basic In Flow) butterfly valves with Limitorque motor and manual operators.

Nature of Deficiency:

An operating defect may exist on Limitorque motor and manual operators used in conjunction with BIF butterfly valves. The shaft key that locks the operator spline adaptor to the valve stem and the spline adaptor may vibrate loose, disengaging the driving torque to the valve, rendering the valve inoperable. The manufacturer has identified that this problem will most likely occur when the valve is installed in a horizontal pipe line with the valve shaft in the vertical plane and with the operator under the valve. However, the manufacturer has also concluded that the same problem may occur regardless of operator position.

Safety Implications:

There were 19 valves supplied of which 17 are utilized in safety related applications. There are 14 valves employed in the Standby Gas Treatment System (SGTS), and 3 in Standby Service Water System (SW).

Failure of the valves in the SGTS system, in the manner described by the manufacturer, would cause loss of the redundant SGTS system. In turn, the negative pressure within the secondary containment system would be lost as well as the redundant filters. This would result in an unacceptable dose to the public in the event of a LOCA.

Failure of the valves in the Standby Service Water System (SW), in the manner described by the manufacturer, would result in the loss of the redundant Standby Service Water System. Loss of the SW system, utilized for cooling for normal reactor shutdown, and post-LOCA, would result in the loss of safety related equipment required to function during shutdown and post-LOCA.

Corrective Action:

All 19 valves are being repaired in accordance with the recommended fix of the manufacturer as follows:

- a) Depressurize pipe line and close valve (where appropriate).
- b) Remove operator from valve assembly making note of its mounting position.
- c) Position spline adaptor flush with the end of the valve stem. Position shaft key slightly below (1/16") the face of the spline adaptor.
- d) Lock spline adaptor in place with set screw supplied by BIF.
- e) Utilizing a center punch, stake the edges of the spline adaptor and the valve shaft around the end of the keyway to prevent the key from slipping past the flush position.
- f) Re-install operator in original position.

7905090073

00802028