



NUCLEAR

CRANE NUCLEAR, INC.

860 REMINGTON BOULEVARD

BOLINGBROOK, ILLINOIS 60440

August 15, 2006

US Nuclear Regulatory Commission  
Washington, DC 20555-0001

Attention: Document Control Desk

Subject: 10CFR21 Discovery/Evaluation Notification

Reference: 20" Chapman 900 and 1500 Class Tilting Disc Check Valves, Models L973, L973A, L1573 and L1573A

Dear Sir or Madam:

Crane Nuclear, Inc. has discovered a defect and has completed an evaluation in accordance with 10CFR21. It has been determined that a further evaluation will need to be performed by those owning and operating 20" Chapman 900 and 1500 Class Tilting Disc Check Valves, Models L973, L973A, L1573 and L1573A. The evaluation determined the following:

- In June of 1996 the 20" Disc Casting Pattern was modified to incorporate a 45 degree Travel Stop to meet customer requirements on Sales Order 069002142 (Entergy - Grand Gulf). The pattern modification was intended to be specific to this order and not a generic change.
- The Disc Casting Pattern modification was completed by the casting supplier without changing the pattern part number.
- The Disc Casting Pattern was subsequently moved to another casting supplier in 1999, but the historical knowledge regarding the modification was not transferred.
- A review of the Crane Nuclear Inc. database revealed that the pattern was not used between 7/96 and 7/99.
- Since July 1999, two (2) safety-related valves and fifteen (15) commercial Disc/Seat Assemblies were shipped.
- The evaluation concluded that there is no effect on the health and safety of the public as this is recognized as a performance issue.
- Plant specific operating conditions must be evaluated to determine the impact of the change in full open disc angle due to the potential impact in pressure drop. Based on a simplified 2D model analysis commissioned by Entergy Grand Gulf, the pressure drop with the Disc at 45 degrees was determined to be 4.65 PSI versus a 3.10 PSI pressure drop at the 55 degree full open position for their operating conditions.

Crane Nuclear, Inc. recommends that the owner of this valve model/type perform an evaluation on pressure drop conditions relative to the valve application and required operating specifics.

The Disc Casting Pattern has been identified with a new part number to prevent this issue on future orders and a new Disc Casting Pattern has been made to replace the original design with the 55 degree opening angle.

Crane Nuclear Inc. has completed the review of records and has identified all owners of these models. Although the customers for the two safety related valves are aware of the defect based on discussions with the two utilities, a formal notification by certified mail will be made to all customers that received these items by August 25, 2006.

If you have any questions please contact me at one of the following, phone 630-226-4940, email [rnava@cranevs.com](mailto:rnava@cranevs.com), or by fax 630-226-4646.

Sincerely,

CRANE Nuclear, Inc.

Rosalie Nava  
Manager of Quality Assurance

IE19