

# Loop Stop Isolation Valve Disc Guide Repair

## Background

Loop stop isolation valves (LSIVs) significantly reduce outage time, but during plant operation, the continuous water flow rate on the LSIVs generates vibration, slowly causing wear on the retaining pins that hold the disc guide to the valve body. Eventually, this wear makes it difficult to close the valve, and attempts to close the valve can cause more damage if the guide is misaligned. Westinghouse's retention method allows the guides to survive longer under the operational forces, permitting the continued use of LSIVs in future outages.

## Description

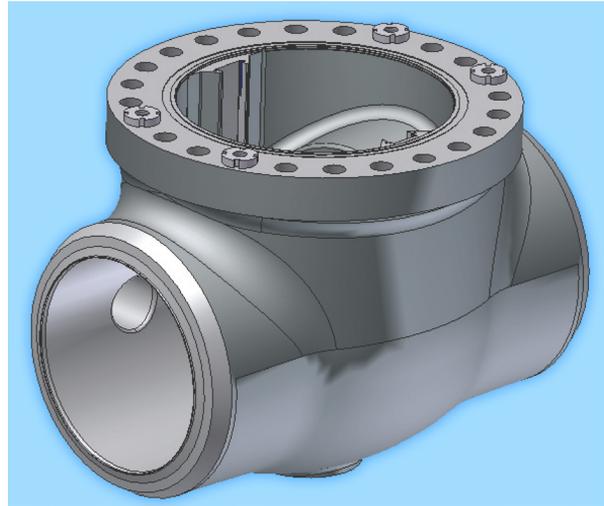
Westinghouse's revised guide design distributes the forces experienced during operation over a greater area, reducing the wear effects and increasing the longevity of the guide and valve. The repair consists of machining longer grooves in the sides and bottom of the valve body guide slots. Then a new guide design, which includes tabs instead of the original pins, is placed into the valve body. The tabs add to the surface area of the pins, thereby distributing more evenly the forces from the water flow in the valve, resulting in less wear and improved guide retention. Where damage to the valve body already exists, Westinghouse can take remediation steps during the machining process to remove interferences. Westinghouse evaluates each case and adapts each guide tab individually to provide guide retention. In severe cases, Westinghouse adds a keyed tab to the backside of the guide and provides a matching slot in the valve body.

## Benefits

Because LSIVs are too large and expensive to replace when a disc guide problem arises, repair is a much more cost-effective solution. Plants typically recoup the cost of the repair in one outage and then reap the savings in each subsequent outage. Westinghouse can provide the new guide design and the new guides and perform all required analyses and specification revisions to qualify the repair. Westinghouse can also provide the personnel and machining equipment on-site to perform the modifications, install the replacement guides and complete the repair. The site needs only to disassemble and reassemble the valve and provide the minimum required access for Westinghouse's equipment and personnel.

## Experience

Westinghouse has helped numerous customers that have LSIVs make this repair at their plant sites.



Loop stop isolation valve