

## HILTON CUSTOM DAMPER IN POWER PLANT CONDENSER SYSTEM



### **APPLICATION:**

Large steel damper blades are used to throttle cooling water to the condenser system at a Wisconsin power plant.

### **PROBLEM:**

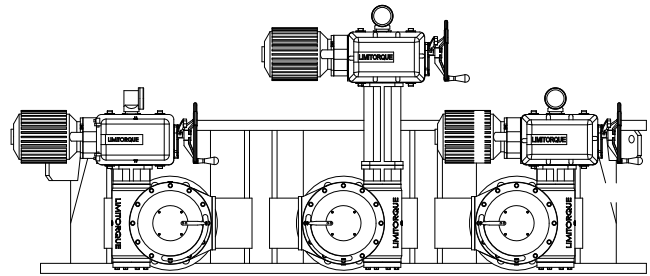
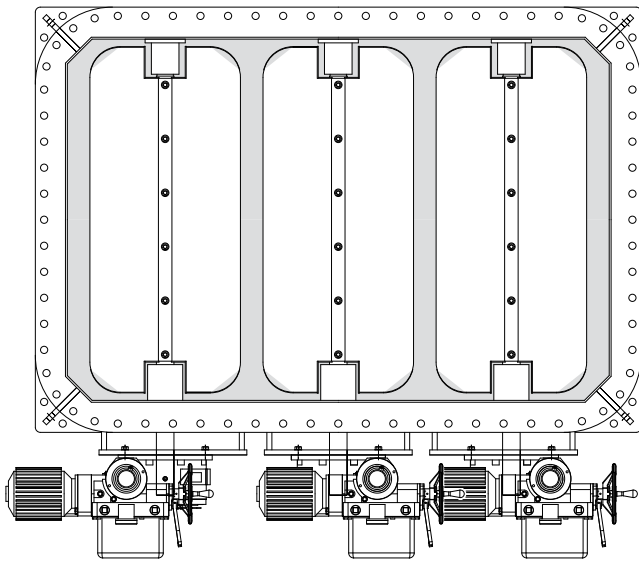
The power plant had three custom-built damper blade boxes that were over 40 years old and needed direct replacements to be built and delivered in a short time frame. Two of the damper blade boxes were 2-blade 60" x 67" and one was 3-blade 72" x 108". Due to the remote location of the damper blade boxes in the power plant, the boxes had to be designed to be transported long distances through narrow areas. The space where these dampers are located is very confined, remote, and has the potential for flooding. Because of space limitations, the dimensions of the dampers could not increase since it was necessary to keep aisles open for workers and allow room to operate and maintain the components when necessary.

## SOLUTION:

Hilton was able to take the previous design, make necessary upgrades requested by maintenance crews, and fit the new dampers in the very limited space. Due to the remote and severe location, the customer required the use of Limitorque SMB motors with HBC gear boxes. The customer requested the SMB motor actuator due to its rugged design. These are in an application where they can't afford to have the actuator fail.

Hilton fabricated extensions to raise the electric motors out of range of possible flooding. The extensions also served to vertically stagger the motors to fit within the space allowed. Finally, both left-hand thread and right-hand thread gear boxes were used to allow enough room for the motors to be mounted, and for the blades to open and close at the same time and rate. This required specific gears and motors with custom gearing to be ordered.

The custom-built damper blade boxes were designed, built, and delivered to meet the customer's specific requirements in the time required.



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