plant, Central Vermont Public Service Corporation included an oil containment system that features a Petro-Pipe manufactured by Solidification Products International (SPI) of Northford, Conn.

SPI will be exhibiting at the Waterpower conference.

This plant, on the Lamoille River in Vermont, began operating in 1948. Because of the age of the existing generator step-up transformer and a recent power uprating of the generator, Central Vermont Public Service needed to replace the transformer. The generator step-up transformer sits on a concrete pad base in a fenced area of the station next to the river, making it important to provide a containment system in the case of an oil leak.

Workers from Engineers Construction Inc. of Williston, Vt., installed the system in the fall of 2008. They attached an impervious liner to the 12-foot-by-12-foot concrete pad base of the transformer, then filled the liner with stones. A berm around the transformer can contain 100 percent of the oil in the transformer, plus a 10 percent allowance for rain. In one corner of the liner, workers installed a Petro-Pipe that ultimately empties into the river.

The Petro-Pipe is a 16-inch-long, 6-inch-diameter cylinder. The cylinder is filled with a patented filter material to about two-thirds of the way up from the bottom. The top of the pipe contains a filter to remove dirt and debris. The cylinder attaches to the impervious liner at Peterson through a system of flanges and gaskets manufactured by SPI.

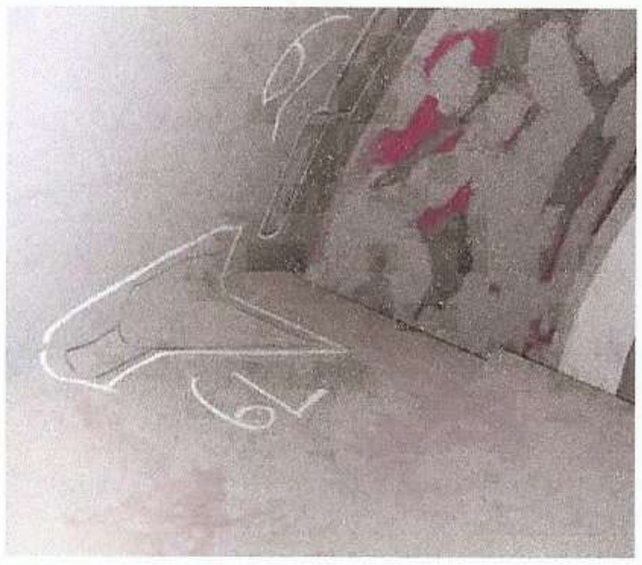
This pipe serves two functions. First, it lets rainwater drain from the stones and liner. Second, if oil reaches the cylinder, the filter material instantly forms a plug. This plug stops all flow and prevents oil from seeping into the surrounding soil or entering the river. The Petro-Pipe is designed to be used in situations where a vertical drain is not feasible.

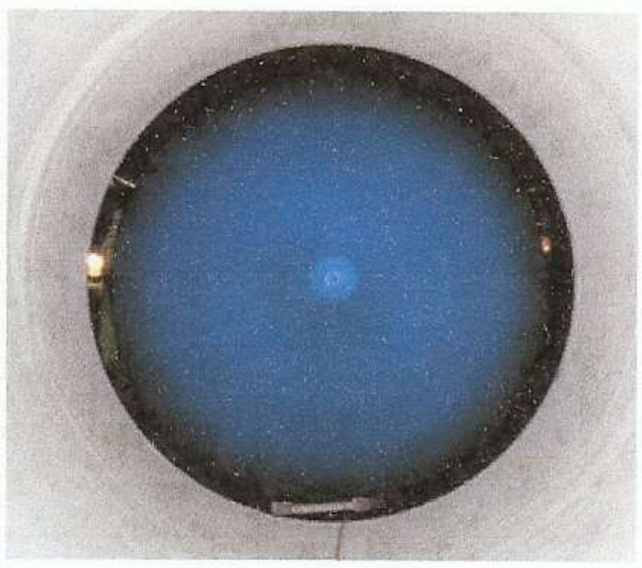
Easy maintenance was the main factor in the decision to use the Petro-Pipe at Peterson. "It has a standard replaceable insert," says Dermot Hughes, substation designer for Central Vermont Public Service. "You just slip in a new one, and you're good to go." Plant personnel check the filter monthly and replace it when necessary.

Fortunately, there has been no opportunity to test the containment system. "We've never had a catastrophic spill where we could test an oil containment system," says Hughes. "We hope it never happens."

Coatings provide smooth surface on hollow jet valves at Yellowtail

To minimize future cavitation damage to the interior of the two hollow jet valves at Yellowtail Dam, the U.S. Department of the Interior's Bureau of Reclamation had the interior of the valves coated with products from ENECON Corporation.





Before recoating the two hollow jet valves and their components at the Yellowtail Dam in Montana, the contractor conducted weld repair of cavitated areas and a full abrasive media blast. The contractor then used two coatings by ENECON Corporation to provide a smooth surface on the valves.

The valves now have a high-quality finish with no signs of cavitation damage or metal corrosion, says Tom Tauscher, facility manager at Yellowtail.

ENECON will be exhibiting at the Waterpower conference.

Yellowtail Dam is on the Big Horn River in Montana. It impounds water for a 250-MW hydro project that began operating in 1966. At the bottom of the dam, two 84-inch-diameter hollow jet valves discharge excess water when releases exceed the capacity of the turbine-generating units. These valves also maintain flow in the river if the reservoir elevation drops below the turbine intakes.

These hollow jet valves had last been recoated in 1988. Since that time, small amounts of cavitation damage had been occurring on the interior of the valves, Tauscher says. In addition, the existing coatings were failing in some areas, resulting in corrosion of the base metal, he says.

In 2008, Reclamation's Great Plains Regional office awarded a $320,000 contract to Ostrom Painting and Sandblasting Inc. of Rock Island, Ill., to recoat the valves and ring follower gates. Ring follower gates serve as head gates for the hollow jet valves, similar to a gate valve. As part of this contract, Reclamation specified use of two specific products from ENECON. "We selected these materials based on Reclamation testing and experience, as well as the products' reputation and performance," Tauscher says.

Ostrom personnel used DuraTough DL from ENECON on the entire interior body of the valve, which is the area most vulnerable to cavitation damage. DuraTough DL is a two-component, 100 percent solids, fluid consistency elasto-ceramic polymer composite coating system. For other interior surfaces, Ostrom used CeramAlloy CL+ [AC] from ENECON. This product is a two-component, 100 percent solids, liquid consistency polymer composite coating system. The function of this coating is to protect equipment from erosion and corrosion.

To prepare for the recoating process, Ostrom personnel dewatered each unit and removed the existing coating systems from the surfaces of the hollow jet valves, downstream face of the ring follower gates, and interior surfaces of the penstocks. The contractor also prepared the surfaces to be recoated, with weld repair of cavitated areas and a full abrasive media blast.

The recoating work on both units was completed in November 2008.

"The project turned out very well, with a high-quality finish," Tauscher says.

Weather system used to provide hydrologic forecasts

Seattle City Light and the U.S. Army