

## **More powerful hydro turbine heads for Washington State**

### **Local News**

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A new, 45-ton piece of a hydroelectric turbine began a 2,720-mile journey to the [U.S. Army Corps of Engineers](#)' [Chief Joseph Dam](#) in eastern Washington, where it will boost the renewable power generated by the Columbia River.

The turbine runner manufactured by [Alstom Hydro](#) under contract with the Corps requires a police escort in some areas, since it measures more than eight feet high and 16 feet in diameter. Its route from Alstom's manufacturing facility in Sorel-Tracy, Quebec, Canada, was determined in part by weight limitations of roads and highways.

A runner is the central part of a hydroelectric turbine that rotates under the action of water to generate electric power.



New turbine runner for Chief Joseph Dam awaits its cross-continent journey. (Click image for high-resolution version.)

Photo: Philippe Manning

The upgraded turbine runner is the first of 10 new and more efficient runners to be installed at Chief Joseph by 2014. The new runners and related turbine component repairs and replacements will increase the dam's power generation by more than 40 megawatts and boost the efficiency of the turbines to 95 percent or better. That is enough to power more than 30,000 additional Northwest homes compared to the 50-year-old runners being replaced.

The [Bonneville Power Administration](#) is financing the upgrades through an agreement with the Corps of Engineers as authorized by the National Energy Policy Act of 1992, under which a portion of revenues from hydropower generated at federal dams can be reinvested to operate, maintain and improve the federal generation projects.

"This makes the most of the Columbia River's immense power and provides even more affordable, reliable and renewable electricity for the Northwest," said Steve Oliver, BPA's vice president for generation asset management. "This turbine and the others to follow help us use the available water as efficiently as possible, which is especially important in a dry year like this one."

This is one of the driest years in the Columbia Basin in the last half-century. The approximately \$120 million in turbine upgrades at Chief Joseph will help the agencies that operate the hydropower system produce more clean energy while protecting natural resources such as salmon and steelhead. More efficient turbines also experience less wear, reducing maintenance costs that otherwise add to power rates.

"The value of the hydropower system will only increase as the country embraces renewable energy and addresses climate change," said Stuart Cook, chief of Operations Division, Seattle District, U.S. Army Corps of Engineers. "We're upgrading the system with the latest and most efficient technology just as people at home are switching to more efficient appliances. It's cost effective and good for the environment."

"As a world leader in hydropower, we are extremely pleased to be able to leverage our unique global engineering and manufacturing footprint to deliver hydropower equipment to Bonneville Power Administration and the U.S. Army Corps of Engineers in support of their need to deliver a clean energy solution to the region," adds Claude Lambert, Vice President, Hydro North America at Alstom.

Chief Joseph Dam is the second-largest hydropower producing dam in the United States and the largest operated by the U.S. Army Corps of Engineers. BPA markets and distributes power from Chief Joseph and other federal dams to Northwest utilities.