



News Release

Puget Sound Energy's New \$40 Million Fish-Passage System Aims to Boost Washington State's Baker River Sockeye Population

Utility Employs World's Only Successful Deep-Water Guide-Net System

BELLEVUE, Wash.--(BUSINESS WIRE)--July 18, 2007--One of the Puget Sound's key populations of sockeye salmon will receive a major boost from the reconstruction of the world's only successful system for moving juvenile fish around a large, deep-water hydropower dam.

"A lot of people and organizations have invested years of research and planning to develop this new facility," said Cary Feldmann, manager of Resource Sciences for Puget Sound Energy (PSE). "We believe it holds great promise for salmon in the Baker and Skagit river basins."

PSE (utility subsidiary of Puget Energy (NYSE:PSD)) is building the new, technologically advanced fish-passage system behind its Baker Lake dam in northwest Washington. State and federal fisheries agencies anticipate that the \$40 million installation, together with \$110 million in other PSE fish-enhancement projects on which they're working with the utility, will quadruple the Baker River's already rebounding sockeye numbers.

"We're very happy to have collaborated with PSE and other agencies to develop the Baker Project's new floating surface collector," said Steve Fransen, a biologist with the National Oceanic & Atmospheric Administration's Fisheries Service. "And we're eager to begin testing during the spring 2008 out-migration season."

PSE's old fish-transport system behind the 312-foot-high Upper Baker Dam was highly successful in attracting and capturing juvenile salmon for a half-hour "fish taxi" ride and release into the Skagit River for their migration to sea. Some of the old system's equipment dated to the 1950s, while other components, including a lengthy guide net, were added much later.

The guide net's quarter-inch mesh - spanning nearly 2,000 feet from shore to shore and extending to Baker Lake's 280-foot-deep bottom - prevented young fish from entering the dam's hydropower turbines. The net, together with the old, barge-mounted "floating surface collector" to lure and trap juvenile salmon, is credited with helping revive the Baker River's sockeye population.

Between 1925 (the year PSE built the first of its two Baker River hydroelectric dams) and the early 1970s, an average of about 3,000 adult sockeye returned each summer to the Baker watershed. In the 1980s, however, the runs declined dramatically, with a record-low 99 fish returning to spawn in 1985.

PSE responded by building the world's first (and still only) deep-reservoir guide-net system to augment the utility's previously existing floating surface collector, or "gulper." The lake-spanning net, together with periodic enhancements to the gulper, quickly produced a dramatic turnaround in the number of juvenile sockeye reaching the ocean. In turn, the number of adult sockeye returning to the Baker basin has steadily risen.

In 1987, the first year guide nets were used in tandem with the gulper, only 77 juvenile sockeye were captured leaving the lake. With refinements to the system, the number of young salmon collected and transferred to the Skagit River reached 300,000 in 2006. For the river's adult sockeye, six of the 10 best returns in history have occurred in the past decade. In 2003, a record 20,225 sockeye made the annual mid-summer trek back to the river.

Despite its effectiveness, the aging fish-transport system had basically reached the end of its functional life, Feldmann said. More importantly, increased understanding of juvenile sockeye biology and their response to various hydrological conditions led PSE, fisheries agencies, and Native American tribes to advocate a new, more sophisticated surface-collector/guide-net facility.

"We are excited about the installation of the new fish-passage facilities for moving young fish downstream from Baker Lake," said Gary Sprague, Major Projects Section manager with the Washington Department of Fish and Wildlife. "We have been working intensely with Puget Sound Energy and other agencies for the last eight years to develop the new state-of-the-art facilities. We are pleased about the improvements."

After years of collaborative study and design analysis, PSE began building the new fish-transport system last winter on Baker Lake's southwest shore. The new floating surface collector (FSC) is a key enhancement. Four times the size of the old gulper, the FSC is a 130-foot by 60-foot barge equipped with a series of submerged screens, water pumps, fish-holding chambers, a fish-evaluation station, equipment control rooms, and a fish-loading facility.

Another key enhancement is the new, funnel-like "net transition structure." Young salmon, attracted by the adjoining FSC's simulated river current, will enter the transition structure's submerged, 50-foot-by-75-foot mouth. Swimming through the gradually narrowing apparatus, fish will proceed through its 16-foot-by-16-foot exit portal to enter the 1,000-ton FSC.

The new floating surface collector's four primary water pumps - each eight feet in diameter - will quadruple the old pumps' speed of simulated "river current" in Baker Lake, providing a stronger attraction for young fish. Further inside the FSC, after fish have been captured, a specially designed screen system will slow the water to prevent fish injury as pumped water is returned back into the lake.

Because of the design enhancements, fisheries agencies expect PSE's new system to capture 90 percent to 95 percent of Baker Lake's juvenile salmon. The old guide-net system, by comparison, had an estimated 60 percent capture rate. The new facility is scheduled to be operational by early 2008, in time for the spring migration of juvenile salmon.

With input from fisheries agencies, Indian tribes, and others, PSE is planning about \$110 million worth of other fish-enhancement projects as part of a proposed federal license agreement for the utility's 175-megawatt Baker River Hydroelectric Project. These projects include:

- Structural improvements to PSE's man-made, but naturalistic, sockeye spawning beaches along Baker Lake;
- Construction of a new, \$14 million fish hatchery capable of raising sockeye, chinook, and coho salmon, and steelhead and rainbow trout, with a target of tripling Baker sockeye propagation capacity to 14.5 million fry per year;
- Replacement of PSE's existing trap-and-haul facility below Lower Baker Dam with a new facility for more effectively transporting migrating adult fish upstream to the Baker Basin above the dams; and
- Additional acquisition or enhancement of wetlands and riparian habitat in the Skagit and Baker river basins.

A video on the design and function of the new Baker Lake fish-transport system can be viewed on PSE's Web site, under the Energy & Environment tab, at http://pse.com/energyEnvironment/EnergySupply_ElectricityHydro.aspx.

About Puget Sound Energy

Washington state's oldest and largest energy utility, with a 6,000-square-mile service territory stretching across 11 counties, Puget Sound Energy (PSE) serves more than 1 million electric customers and 718,000 natural gas customers. PSE, a subsidiary of Puget Energy (NYSE:PSD), meets the energy needs of its growing customer base through incremental, cost-effective energy conservation, low-cost procurement of sustainable energy resources, and far-sighted investment in the energy-delivery infrastructure. Visit PSE.com for more information.

About PSE's Baker River Hydroelectric Project

PSE's largest hydropower facility is the Baker River Hydroelectric Project. Located on a tributary of the Skagit River in northwest Washington, the project has two dams, each with its own powerhouse. The dams' reservoirs, Baker Lake and Lake Shannon, are fed by runoff from the flanks of Mount Baker and Mount Shuksan. Lower Baker Dam, completed in 1925, is a 285-foot-high concrete structure with 70 megawatts of power-generating capacity. The 312-foot-high Upper Baker Dam, completed in 1959, has a generating capacity of 105 megawatts. The project includes extensive salmon-propagation facilities and numerous amenities for public recreation. It also provides flood control for communities in the Skagit River Valley. A 50-year federal operating license granted to the Baker River Project in 1956 expired in April 2006. The project is now operating under an annual license from the Federal Energy Regulatory Commission while PSE seeks a new long-term license.

CONTACT: Puget Sound Energy
Roger Thompson, Media Contact, 1-888-831-7250

SOURCE: Puget Sound Energy