

## Revitalizing and Managing the Nation's Powerhouse

### *Grand Coulee Dam, Third Powerplant Overhaul*

[music]

**Lorri Lee:** Grand Coulee Dam is one of our Nation's greatest assets and is considered the region's crown jewel. It's the largest capacity hydropower project in the US and the 4th largest in the world. Between power production and irrigation, it produces nearly \$2 billion a year in benefits. But like all great public works projects, the upkeep and maintenance are challenges that are felt at all levels of our organization.

[music]

Generators in the Third Powerplant are undergoing a \$100 million upgrade that promises to bring the 40-year-old power house into the 21<sup>st</sup> century and help assure another 40 years of clean, renewable, low-cost hydropower for the Northwest.

Much of the overhaul work is already complete including upgrades to the powerhouse cranes, elevators and gate repair chamber, replacement of the generator governors, exciters and transformers, and construction of new overhead transmission lines as well as a new materials storage building. One good example of what we've achieved is the overhead line job.

40-year-old oil-filled cables that ran through the dam to connect the Third Powerhouse to the power grid exceeded their useful life and presented an unacceptable failure risk.

[cable drops]

These cables were removed and replaced by six new transmission towers, three of which are well over 300 feet tall, and new overhead power lines have been strung 3,600 feet across the Columbia River.

Most of the work we've had going on has been in preparation for the main overhaul. The main overhaul work began with Unit G-24, the first of the turbine overhauls to be done on the world's largest hydrogenerating units.

[turbine spinning]

It takes a lot of moving parts to make these massive generators work, and after forty years of hard service, many of these parts are worn beyond tolerance. The overhauls will require complete disassembly of the generating units, something that has not been done since they were originally built. This will involve removal of the 2000 ton rotors, and un-stacking the machines all the way down to removal of the water wheel turbine itself. This work will require about 5 years to complete.

We're proud of the work that Grand Coulee's staff, trades people, and contractors have contributed. Grand Coulee is the largest hydropower facility in the United States and the hydropower workhorse of the Columbia River.