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## **The dynamo that started it all:**

If it goes ahead, BC Hydro's Site C dam would be the third to block the Peace River.

**Scott Simpson**

Vancouver Sun

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The dynamo that started it all: If it goes ahead, BC Hydro's Site C dam would be the third to block the Peace River. The first and the largest was the W.A.C. Bennett Dam, built in 1967, which remains one of the province's most spectacular and controversial engineering feats

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HUDSON'S HOPE - The main engine room of British Columbia's economy is a gloomy, steel-lined chamber that would frighten anyone with a fear of enclosed spaces or rushing water.

It's curved like a snail's concentric shell and set so far below the surface of the Earth that if you dropped the Eiffel Tower down here the only thing to see sunlight would be that French landmark's observation deck.

At one end of the chamber is the mouth of a sharply tilted, unlit tunnel set deep in bedrock on the eastern shoulder of the W.A.C Bennett Dam.

Waiting behind a four-foot-thick steel door at the top of the tunnel is a huge body of water, enough to fill 600 billion bathtubs.

When that door opens, 1.4 million litres of water per second surge down the tunnel and into the chamber, pushing with enough torque on a Volkswagen-sized water wheel to set a 440-tonne generator unit spinning at 150 rotations per minute.

There are 10 such units at the Gordon M. Shrum Generating Station.

Shrum has the capacity to generate more than 13 billion kilowatt hours of electricity annually, enough to meet one-third of all of British Columbia's demand for power.

It's enough power for a million homes, or almost enough to supply every sawmill, pulp and paper mill, mine, and heavy industry in the

province.

But it's not enough.

B.C.'s appetite for electricity is ravenous. Demand is expected to grow by 40 per cent over the next 20 years and BC Hydro is once again considering damming the Peace as a cheap source of electricity.

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Completed in 1967, the Bennett dam was envisioned as the first of five dams that would turn the Peace River into the province's single greatest source of hydroelectricity.

The provincial government wanted dams and reservoirs that would follow the river's course from deep in the Rocky Mountains all the way to the Alberta border.

The second of those dams, Peace Canyon, was completed in 1980 and produces about a quarter of the electricity that comes from Bennett.

Since about 1975, BC Hydro has been assembling land for a potential third dam, which goes under the operating name of Site C and would produce the same amount of electricity as Peace Canyon.

The province's plans for five dams were abandoned and the Site C proposal has been envisioned for more than 20 years as the final stage of Hydro's Peace River project.

The proposal continues to attract strong criticism from environmentalists, farmers, aboriginals and others who say the remaining British Columbia stretch of the Peace should be left to its natural state.

Like Peace Canyon, it would generate electricity from the water released from the much larger Bennett dam upstream.

(The elevation of Site C would be about 210 meters lower than Bennett dam, relative to sea level.)

And like Bennett and Peace Canyon, Site C would improve British Columbia's independence from import sources of electricity.

For almost four decades the Peace hydroelectric system has kept B.C.'s mills and mines competitive on national and international markets, and is still hailed as former premier W.A.C. Bennett's greatest legacy to British Columbia.

The Bennett dam remains the province's greatest engineering achievement and one of the cheapest sources of electricity on the continent.

It took six years to build and set a global standard for earthfill dam construction. The dam itself is composed of 91 million tonnes of glacial till, which was delivered to the dam site via five kilometres of conveyor belts.

The Shrum generating station, behind the dam, is three football fields wide and was the largest man-made underground cavern in the world when it was completed in 1967.

Williston Reservoir, which feeds the generating station, collects and stores water from an area the size of New Brunswick.

The project also served as leverage for Bennett when he bested the U.S. federal government in high-stakes negotiations over the Columbia River power treaty in 1964.

The U.S. wanted to give B.C. electricity as compensation for flooding as a result of dam construction along the Columbia system which flowed from B.C. into the U.S. -- but Bennett wanted cash.

He pointed to the Peace project as proof that his province did not need other sources of electricity, and came away with a cheque for \$274 million -- enough to pay for construction of three dams on the B.C. side of the Columbia.

BC Hydro continues to generate more than \$200 million annually for the provincial treasury by selling Columbia electricity to the United States.

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"It's awesome engineering, really," says BC Hydro business planning manager Terry Peressini. "You take the concept of building a dam and a powerhouse, and you get it down into the nuts and bolts of making it work, and it's a tremendous engineering feat."

Peressini's first job here was in 1965 as a dishwasher for the project's construction camp.

"The dam was probably at 100 to 150 feet tall when I came -- they had another 500-plus feet to build on it.

"I can remember there was a little restaurant, a viewpoint, up behind where the switchyard is now. You could go over there and look back down over the project.

"They had 100-tonne dump trucks, the biggest in the world at that time, specially designed for this project -- and they looked like little Tonka toys when you put them against the scale of things here."

Peressini came from a small town in southern Alberta, looking for summer work to finance another year of university.

"I think I was making something like \$2.65 an hour, which doesn't sound like much, but common jobs in other places were paying less than a dollar an hour for labour. If I'd stayed in Alberta I would have been making probably 75 cents an hour.

"There was probably 1,500 people working here, predominantly men, from all over the world. There was an attitude of 'Let's get this thing built.'

"There were engineers here from all over the world, tradesmen. It was a real magnet for workers, and for tourists. In 1967, there was something like 200,000 people visited Hudson's Hope to look at this project.

"It was the biggest construction project in North America at the time, maybe in the entire world."

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Day 2: The Alberta impact

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