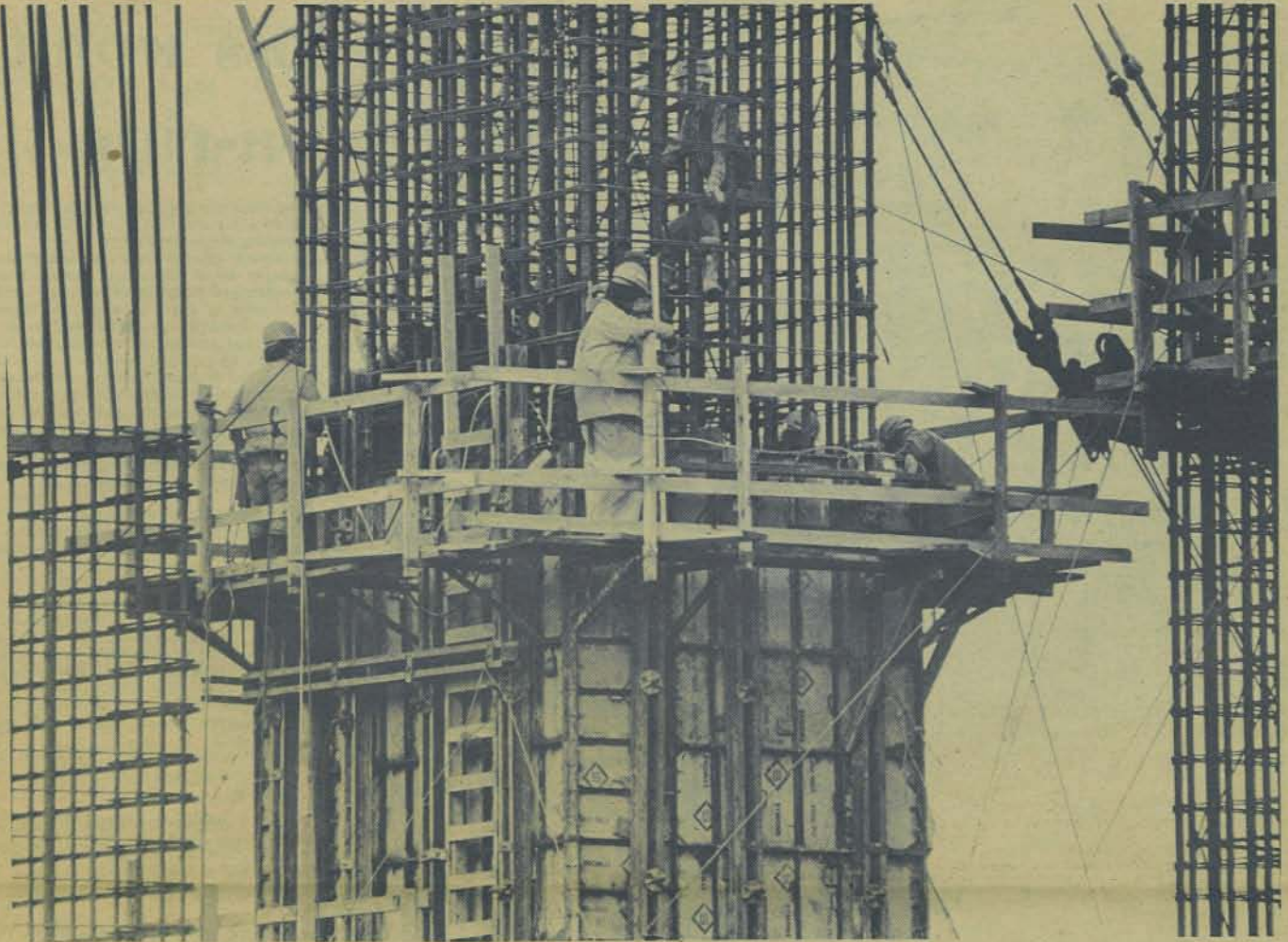


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Turbine pedestal

Laborers at the Satsop nuclear project site on Fuller Hill prepare an integral part of the turbine building — the huge reinforced steel pedestals the turbines will be mounted on.

Satsop construction, contention thrive

By JOHN DODGE
World Staff Writer

One year ago Wednesday, the Washington Public Power Supply System received a construction permit to build two nuclear power plants on Fuller Hill near Satsop.

It has been a year wrought with controversy for the project, but also a year of highly visible construction. The progress — and the controversy — show no signs of letting up.

WHILE the most severe project critics would like to see the multi-billion dollar plants disappear like a bad dream, WPPSS officials point with pride at some of their most recent construction feats.

Rising 247 feet from its base, the WNP-3 concrete reactor shield wall pierces the tree tops on the ridgeline above the Chehalis River Valley. Topped by a red and white striped derrick, the three-foot thick cylindrical shield is a rallying point for project advocates and a grim reminder for its detractors.

"That was a good performance," project manager William Talbott said in February of Boecon Fegels' slip form pouring of the massive shield wall for the WNP-3 reactor.

"They poured concrete at the rate of 21 stories in 21 days," said Talbott, who is overseeing his first nuclear plant project. "I wouldn't want them to go any faster."

Talbott said there is 7,000 tons of steel

reinforcing 30,000 cubic yards of concrete in the shield wall.

Since September, WPPSS contractors have poured 60,000 cubic yards of concrete for the WNP-3 plant — 25 percent of the total.

The bare figures are hard to comprehend. But 60,000 yards of concrete is enough to build a 30-foot-wide road six inches deep and 20 miles long.

THE ENORMITY of the Satsop project strikes home when one visits the site.

The fenced-in plant island area, where the reactors, turbines, fuel, generators and support buildings are centered, features scores of work activities.

There are trucks of all sizes carrying materials and supervisors in sixteen different directions. Jackhammers add an overcapping layer of sound, drowning out foremen shouting instructions and the trade sounds of welders, concrete finishers, carpenters and heavy equipment operators.

A trench, big enough to build houses in, awaits placement of pipe 12-feet in diameter which will carry water from the steam pressure vessels to the cooling towers.

It would be impossible for any one person to have a complete grip on the project and it is apparently just as hard for the public to come to grips with WPPSS.

ACCORDING to a public opinion poll commissioned by WPPSS, the majority of Grays Harbor County residents are confused as to what WPPSS is.

WPPSS is a state-wide joint operating agency created by the state legislature in 1957 to build and operate energy-producing plants.

Its membership consists of 19 public utility districts — including Grays Harbor PUD — and three municipal utilities — Seattle, Tacoma and Richland.

Each power plant under construction on Fuller Hill has its own financial and energy allocation plan.

WNP-3 will be owned 70 percent by WPPSS; Pacific Power and Light Co., 10 percent; Portland General Electric Co., 10 percent; Puget Sound Power and Light Co., 5 percent; and Washington Water Power Co., 5 percent. The WPPSS portion of power produced — 70 percent of 1,240,000 kilowatts — will be purchased by more than 100 public-owned utilities tied into the Bonneville Power Administration power grid.

WNP-5 will be owned 90 percent by WPPSS and 10 percent by the Pacific Power and Light Co. Eighty-eight publicly-owned utilities will purchase the WNP-5 power from the supply system.

WNP-3 is 10.45 percent complete, according to WPPSS managing director Neil O. Strand's status report of March 23. By the end of this

year, WPPSS officials expect WNP-3 to be 20 percent complete.

CONSTRUCTION GOALS at WNP-3 in 1979 include:

- Complete below ground level concrete work in the reactor auxiliary building and begin installing heating, ventilation, air conditioning and mechanical parts in the reactor auxiliary building.

- Erect about 50 percent of the steel containment vessel inside the reactor building.

- Complete foundation construction and structural steel construction in the turbine building, begin closing in the building, erecting condensers and installing the heating, ventilating and air conditioning in the turbine building.

- Build about 25 percent of the 500-foot tall cooling tower.

By the end of 1979, WPPSS expects to have WNP-5 about 5 percent complete. It is 1.09 percent complete as of the March 23 status report.

CONSTRUCTION GOALS at WNP-5 in 1979 include:

- Build the reactor containment shield wall.
- a duplicate of the 247-foot high WNP-3 shield wall.

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Progress at Satsop

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— Begin construction of the reactor auxiliary building, including the base mat construction.

— Complete about 25 percent of the turbine building foundation.

The value of construction in 1979, including administrative costs, architect-engineer services, sales tax and other purchases, is \$264.3 million for WPN-3 and \$147.2 million for WNP-5, according to WPPSS figures.

About 12 major contracts will be awarded in 1979. Most of the contracts will be for work in the concentrated plant island area that includes the reactor buildings, reactor auxiliary buildings, fuel handling buildings and turbine buildings.

"We do not anticipate any problems to resolve to achieve these goals, provided the availability of labor and materials continues to support our construction schedule," WPPSS officials said in a prepared statement.

WITH MANY levels of construction under way in a confined area, the task of scheduling contractors without one holding another up will intensify in 1979.

"The interfacing of contractors is a big problem and a costly problem and it is indigenous to this type of work," noted Chub Foster, WPPSS business manager at the Satsop site.

While WPPSS maintains an optimistic posture about its construction schedule, critics of the project and some employees in oversight positions atop Fuller Hill say additional slippages in the work schedule are unavoidable.

WPPSS officials recently revised anticipated commercial operation dates for its three nuclear plants under construction at Hanford and two at Satsop.

They added 11 months to WNP-3, moving it up from June 1984 to December 1985. WNP-5 also slipped 11 months on its schedule, from July 1985 to June 1986.

In a project where one month's delay translates into \$15 to \$20 million, the announced schedule slippage add between \$336 million to \$440 million to the project cost.

And in a meeting with the state Energy Facility Site Evaluation Council in March, Frank McElwee, the assistant director of the five WPPSS projects, said the December 1984 commercial operation date for WNP-3 "assumes a three-month acceleration in the schedule."

McELWEE ALSO told EFSEC, which located the twin thermal plants in East County and issues many of the permits that allow WPPSS to build and operate the plants, that the supply system is "50 percent confident" WNP-3 will be operating by December 1984 and "80 percent confident" it will be operating by March 1985.

Along with criticism for schedule delays, WPPSS has been taken to task for the cost increases at the five thermal plants. The WNP 3 & 5 total costs have climbed from \$2 billion five years ago to \$4.4 billion today.

While WPPSS has blamed much of the schedule delays and cost increases on inflation, labor strikes, weather and statutory and regulatory design changes, the supply system is beginning to admit the obvious — they are a growing organization — from 779 people in 1977 to 1,400 in 1978 — that has made scheduling and budgeting errors of its own.

"WE WERE working with schedules that were too optimistic," McElwee told EFSEC during the March meeting at the Satsop site.

McElwee said the new budget will be ready in June and it "could increase again."

"In the past we have had a knee-jerk reaction to criticism of the supply system," R.E. Dellon, WPPSS assistant director of management services said in a March interview with The Daily World. "We're beginning to realize that it is best sometimes to



Reactor building pit

The three-foot thick cylindrical concrete wall that will shield and contain the WNP-3 reactor looms above all other construction at the Satsop nuclear project site.

simply say: Hey, we made a mistake."

At the local level, WPPSS construction goals and problem solving tasks go beyond the plant site itself. Among the off-site problems WPPSS must come to grips with in 1979 are:

— ACCESS — WPPSS only has one access to the site. With the on-site work force expected to climb from the present 2,000 people to about 5,000 in 1982, WPPSS insists they need another access from the east to keep employee traffic from grinding to a halt.

The original project plan included two routes to the Fuller Hill site, but one was dropped as a cost-saving measure. Now, WPPSS wants EFSEC to approve a new transportation plan that calls for two accesses.

— TRANSPORTING heavy equipment — WPPSS has yet to pin down the route it will use to move steam pressure vessels to the site two years down the road.

The two loads will include two reactor vessels weighing 525 tons each and four steam generators that weigh 820 tons apiece, including shipping apparatus.

Two of the transport options involve crossing the Satsop River on a temporary bridge, moving the vessels over a reconstructed Keyes Road to a new, permanent bridge over the Chehalis River and up to the site. One of the river crossing options includes right-of-way over Brady area property of Alice and Ernest Mock. Granny Mock has said she will not allow it.

The third option calls for barging the heavy loads up the Chehalis River from Grays Harbor, then using a special railroad car to move the vessels east on the Union Pacific Railroad line to a spur line to the site that the supply system has spent \$1.6 million to purchase and clear.

— POLLUTION DISCHARGE PERMIT — WPPSS is in the midst of three weeks of hearings with EFSEC over proposed changes in the pollution discharge permit EFSEC granted WPPSS in 1976.

WPPSS wants to increase the amount of suspended solids, copper, oil and grease it will discharge into the Chehalis River.



Concrete shield

The excavation pit for the WNP-5 reactor building is 300 feet to a side and 6 feet deep. It is a beehive of activity this spring as laborers place thousands of tons of steel and pour concrete to support a reactor shield wall that will duplicate the WNP-3 shield wall that stands 247 feet tall.

While WPPSS says its revised plan will not harm the river ecology, the plan is meeting opposition from some citizen groups and state agencies.

Highly visible on many fronts, the controversial Satsop project will remain on center stage in Grays Harbor County in 1979 and for many years to come.

Daily World photos by Jim Bates