Baghouse technology minimizes station emissions

Sheldon Station is commited to meeting federal and state air pollution and water quality control standards and regulations. Striving to improve collection of particulate ash emissions, Sheldon installed baghouses on both of its generating units (Unit 1-December 1999, Unit 2-February 2000).

A baghouse is nothing more than a "house full of bags" usually made of cotton, wool, synthetic, or glass fibers. These large structures, which contain filter assemblies to collect the ash before it can exit the station's exhaust stacks, are now chosen for more than half of all new power plant installations.

Sheldon Station Facts

Unit 1

Generating Capacity	105,000 kilowatts (net)
Type	Coal Fired
Physical Size	135 feet high – 165 feet wide – 350 feet long
Chimney Height	176 feet
Cooling Water Circulating Capacity	60,000 gal. per minute
Coal Capacity at Full Capacity	65 tons per hour
Boiler Manufacturer	Babcock & Wilcox
Ground Breaking	June 28, 1958
Commercial In-Service Date	July 1961

Unit 2

Generating Capacity	120,000 kilowatts (net)
Type	Coal Fired
Physical Size	135 feet high – 143 feet wide – 350 feet long
Chimney Height	176 feet
Cooling Water Circulating Capacity	60,000 gal. per minute
Coal Capacity at Full Capacity	74 tons per hour
Boiler Manufacturer	Babcock & Wilcox
Commercial In-Service Date	July 1968

Combined Units

Construction Cost	$38,000,000
Environmental Upgrades	$23,400,000
Type of Coal	Powder River Basin Coal
Operating Personnel	95

Commitment to Safety

Safety shall always come first:
There is no condition that requires any of us to work in an unsafe manner.

For more information about NPPD visit:
www.nppd.com

Nebraska Public Power District
Always there when you need us

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A *Closer* Look at...

Sheldon

STATION

The name…

C.C. Sheldon was a nationally known figure in public power and conservation of soil and water resources, whose constructive influence extended into many spheres of public, business and religious life.

Born in Clifton, Ill., on May 29, 1871, Sheldon moved at a young age with his family to Columbus, Neb. Throughout his life, he maintained an active interest in banking, other businesses and agriculture and was devoted to resource conservation. A pioneer in the development of hydroelectric power, Sheldon served as one of the organizers of the Loup River Public Power District in 1933, as its first treasurer and a director.

His many services included extensive efforts in obtaining passage of the Enabling Act for the creation of public power districts in the 1933 Nebraska Legislature. He played a leading role in the establishment of Consumers Public Power District, a predecessor of NPPD, and served as Consumer's original director and first treasurer.

Mr. Sheldon died Jan. 10, 1964, at the age of 92.

The location…

Sheldon Station is located 17 miles south and five miles west of Lincoln, or one mile north of Hallam in Lancaster County, Neb. The switchyard is located west of the plant buildings and the coal stockpile is located to the north. Power generated by the station is distributed throughout Nebraska via NPPD's high voltage transmission system.

The plant…

Construction of Sheldon Station began in 1958. It actually started as a combined experimental nuclear-powered and conventional natural-gas fired facility and was the first pioneer sodium graphite nuclear power plant in the nation. The nuclear portion of the plant began operating early in 1963 and reached full power by July 1963. However, the former Atomic Energy Commission (AEC), now the Nuclear Regulatory Commission, ordered this portion of the facility to close and it was decommissioned in 1964.

NPPD shipped some of its nuclear equipment to other plants for reuse while other equipment was stored in Idaho and Washington for future AEC use. Equipment that could not be moved was buried within mammoth "burial vaults" of concrete and then the "leftovers," including the reactor core, were sealed onsite below ground.

Aside from the nuclear portion of the plant, Sheldon Station began producing electricity for the Nebraska grid system in 1961 from a conventional coal and gas-fired boiler. During deactiviation of the nuclear facility, NPPD installed a second generator at the site followed by a second conventional boiler. By July 1968, construction at the site was completed and the plant's two power generating units began operating at full capacity (225 megawatts).

Each of the station's two boilers supply steam to drive its own electric generator. Cooling towers are used to dissipate waste heat from the steam condenser. The plant's water supply comes from its own deep wells and discharge of water from the plant is monitored and carefully controlled to assure environmental compliance.

In 1974, the plant completed major modifications that allowed the facility to switch from using natural gas as its primary fuel source to using low-sulfur coal. This process included constructing and installing enlarged coal storage and handling facilities. To comply with clean air requirements, Sheldon also installed electrostatic precipitators completing construction on its first stack in December, 1975 and the other in July 1976. The precipitators were designed to collect particulate ash from high BTU coal.

In 1987, the station converted to using low BTU coal which caused a decline in the performance of the precipitators and a tighter interval between plant outages. As a result, NPPD opted to replace the precipitators with a different emission control technology in 1999 and 2000. The system, which is made up of a series of special bags, removes 99.8 percent of the particulate matter from the station's exhaust gases.