

SUPPLEMENTAL SECTION A-11
SITE DESCRIPTION

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SUPPLEMENTAL SECTION A-11

SITE DESCRIPTION

A-11.1 PROJECT SUMMARY

Duke Energy Grays Harbor, LLC, and Energy Northwest (the Certificate Holder) is proposing to expand the existing Satsop Combustion Turbine (CT) Project by constructing and operating the Phase II power plant. As with Phase I, the project is to generate electricity to help supply growing regional electrical loads. Phase II will consist of a combined-cycle plant with a nominal average output of 650 megawatts per year.

Phase II will be constructed on the approximately 22-acre Satsop CT project site for which a Site Certification Agreement has already been approved by the State of Washington. The Phase II project will be entirely within the boundaries of the permitted site.

The fuel will be natural gas that will be supplied by a pipeline constructed as part of the Phase I development.

Power produced by Phase II will be routed through transmission lines that will connect to the BPA system at BPA's Satsop substation, approximately 4,000 feet east of the project site. As a part of Phase I, new transmission lines will be installed in the existing BPA right-of-way (on land owned by the Grays Harbor Public Development Authority) from the site to the substation. No new transmission lines for the connection to the substation will be required to serve Phase II.

A-11.2 PROJECT LOCATION

A-11.2.1 Plant Site

The approved site is located south of the Chehalis River near the town of Elma (see Figure A-11-1). The 1600-acre Satsop Development Park surrounds the site on all four sides. The site is located approximately 0.5 mile southwest of the river. Fuller Creek is approximately 0.5 mile to the east, and Workman Creek is located approximately 2 miles to the east.

The site is currently under construction for Phase I. To the north and northwest of the proposed site are various field offices, storage buildings, and stockpiled building materials (see Figure A-11-2). Similar items and facilities are located on the west side of the existing laydown area west of Keys Road. To the south and east, respectively, are the BPA transmission line right-of-way and a strip of

forested land. A fire water tank and pump house are located in the northeast corner of the laydown area adjacent to the proposed site.

As part of the construction of Phase I, the site has been cleared of structures, discarded construction materials, and unneeded utilities. No additional clearing is required for Phase II construction.

A-11.2.2 Transmission Line Corridor

The existing transmission line corridor from the plant site to the BPA substation is shown on Figure A-11-3. This corridor contains two high voltage transmission lines and one distribution line and is maintained with only grass and low vegetation except within the Fuller Creek drainage channel. The creek is incised approximately 120 feet below the surrounding ground surface, and there is a small concrete and rock dam and drain pipe within the creek in the right-of-way.

A-11.2.3 Pipeline

Phase II's gas supply will be provided by the natural gas pipeline being constructed for Phase I. No additional natural gas pipelines are required for Phase II.

A-11.2.4 Roadways

Primary roadways in the area are shown on Figure A-11-4.

A-11.3 TYPICAL GEOLOGICAL AND CLIMATOLOGICAL CHARACTERISTICS

The following sections summarize the geological and climatological characteristics of the project.

A-11.3.1 Geology

The geologic setting of the project vicinity is the result of depositional processes and tectonic forces that have produced the bedrock geology of the Pacific Northwest and its subsequent modification by volcanoes, glaciers, and rivers. Data were obtained from review of literature, topographic maps, and geological maps of the region and project vicinity.

The proposed plant site is located in the Chehalis Lowlands section of the Pacific Border physiographic province. Provinces are defined by areas which possess similar surface topography, river drainage patterns, have common subsurface geology and recent geologic history. The Chehalis Lowlands section is characterized by low rolling hills and broad river valleys flanked by river terraces or flat narrow benches. Elevations within the Chehalis Lowlands range from 150 to 300 meters (480 to 1,000 feet). The plant site is a Quaternary river terrace founded on flat-lying

Helm Creek glaciofluvial deposits which lie on Miocene age fine sands and silts of the Astoria Formation.

A-11.3.2 Climate

The climate of the lowlands of western Washington is dominated by two large-scale influences. These are the mid-latitude westerly winds and the proximity of the Pacific Ocean.

The westerlies carry with them a recurring progression of storm systems, or low pressure systems which develop, move toward the east, and dissipate in these latitudes. The westerlies and their associated storms are most intense in the winter months, and they weaken and shift northward in the summer months.

The Pacific Ocean exerts a powerful influence on the climate of the lands which surround it. This huge mass of water acts to moderate the seasonal and daily variability in climate throughout the year. Winters are warmer and summers cooler than at other locations at similar latitudes, and cloudiness and high humidities are also persistent features. The Grays Harbor County climate is strongly influenced by the Pacific Ocean because the winds and storms tend to move eastward from the ocean to the land, carrying the moderating affects of the ocean with them. The topography of Grays Harbor County does little to obstruct this influence, especially at locations in the Chehalis River Valley.

In Grays Harbor County, winters tend to have the most severe weather of any season. Synoptic storms move repeatedly through the area, bringing continuous rain, cloudiness, and windy conditions to exposed locations. Often, there is little relief from the cloudiness for several weeks at a time. Heavy snows do occur, but are rare. Freezing conditions are only occasionally observed with rare occurrences of sleet or freezing rain. Winter's daily low temperatures are generally in the 30 to 40 degrees F range, with little daily variation.

The summer climate in this area reflects the weakening of the westerly winds and storms. Skies are often fair to partly cloudy and precipitation generally comes in the form of brief, rarely intense showers. Stormy cloudy conditions can dominate for several days in succession, but these conditions are generally less pervasive or severe than in the winter months. The summertime climate is generally mild, with daily afternoon high temperatures generally in the 70 to 80 degrees F range. This climate is a classic example of a west coast marine type environment.

Mean annual precipitation near Satsop is 70 inches (PNRBC 1970). Approximately 85 percent of the annual precipitation occurs between October and April.

A-11.4 ZONING ORDINANCES

The plant site is located in unincorporated Grays Harbor County near the town of Elma and surrounded by the property boundary of the Satsop Development Park (see Figure A-11-3).

The plant site is located in areas zoned as Industrial District 2 (I-2) under Grays Harbor County Comprehensive Zoning Ordinance No. 38 (Title 13). The intent of the industrial zoning is to “provide for the location of industrial uses and activities involving the processing, handling and creating of products, and research and technological processes, all as distinguished from major fabrication, and which uses are largely devoid of nuisance-factors, hazards and exceptional demands upon public facilities and services, to establish a land-use pattern advantageous to the specialized needs of the uses permitted in this District” (Grays Harbor Zoning Ordinance, 13.06.080). Uses permitted outright include industrial uses and industrial development facilities as defined by RCW 39.84.020 Part 6. Energy facilities are included within this definition.

In passing the rezone at a Grays Harbor Planning Commission meeting on November 2, 1998, the Planning Commission found that the utilization of the infrastructure originally built for the Satsop Nuclear Plant and the reuse of existing sites for industrial purposes will promote job creation and economic diversification, expressed purposes of the Grays Harbor County Comprehensive Plan.

Figure A-11-1 Project Location Area Map
11 x 17 color

Figure A-11-1 (Continued)

Figure A-11-2 Project Site
8-1/2 x 11 b/w

Figure A-11-3 Project Location
8-1/2 x 11 b/w

Figure A-11-4 Primary Roadways in the Project Area
8-1/2 x 11 b/w