

Record of Decision for the Electrical Interconnection of the Satsop Combustion Turbine Project April 2002

INTRODUCTION

The Bonneville Power Administration (BPA) has decided to offer contract terms for integrating power from the Satsop Combustion Turbine Project, a 650-megawatt (MW) gas-fired, combined-cycle combustion turbine power generation project (Project), into the Federal Columbia River Transmission System (FCRTS). The Project is located in Satsop, Washington, within 20 acres of the Satsop Development Park, in Grays Harbor County.

The West Coast has a continuing long-term need for electrical energy resources and is still recovering from a shortfall in electric energy supply and a volatile wholesale power market in which prices reached record highs. The Project is one of many proposed generation projects currently being considered for integration into the FCRTS. Power generated at the Project will be available for purchase in the wholesale power market. The Project will help meet the need for energy resources and serve as a resource to meet demand in the long term.

In reaching this decision, BPA relied upon the environmental analysis found in the following documents:

- BPA's Resource Contingency Program Environmental Impact Statement (RCP EIS) (DOE [Department of Energy]/EIS-0230, November 1995),
- BPA's Business Plan Environmental Impact Statement (BP EIS) (DOE/EIS-0183, June 1995), and the Business Plan Record of Decision (BP ROD, August 1995),
- Federal Energy Regulatory Commission's Grays Harbor Pipeline Project Environmental Assessment (EA) (Docket No. CP01-361-000, March 2002).

BPA also relied on Washington State's Energy Facility Site Evaluation Council's (EFSEC) Site Certificate Agreement (SCA) for the Satsop Project.

The decision to offer terms to integrate the Project was considered pursuant to the strategy outlined in the BP EIS for how BPA will decide whether to offer transmission integration.

BACKGROUND

BPA is a major provider of electric transmission services in the Northwest. BPA has adopted the Federal Energy Regulatory Commission's (FERC) *pro forma* open access tariff as incorporated into BPA's Open Access Transmission Tariff. BPA offers

transmission services, including interconnection of generation, in accordance with this tariff to all eligible customers on a first-come, first-served basis, contingent upon an environmental review under the National Environmental Policy Act. Although BPA is not subject to FERC's jurisdiction, BPA follows its tariff as a matter of national policy. This course of action demonstrates BPA's commitment to non-discriminatory access to its transmission system and ensures that BPA will receive non-discriminatory access to the transmission systems of public utilities, which are subject to FERC's jurisdiction.

In November 1995, BPA completed a site-specific EIS on the Project, one of three option energy projects in BPA's Resource Contingency Program (RCP). The RCP was developed to complete environmental review and licensing for several combustion turbines in advance of actual needs, to ensure that BPA or another entity could more quickly acquire energy to meet the highest potential load growth in the Pacific Northwest region. The RCP EIS evaluated the environmental effects of two alternatives—the proposed action and no action. The proposed action, constructing and operating a natural-gas-fired combined-cycle generating unit at the Satsop site, and the effects of interconnecting the Project at BPA's adjacent existing Satsop Substation, was BPA's preferred alternative. The no-action alternative was the environmentally preferred alternative; however, this alternative did not meet BPA's need. A ROD on the RCP EIS was not issued at that time as a decision to acquire the output of the Project was to be made later if BPA or another entity needed additional energy resources.

Also in 1995, BPA completed an EIS on its Business Plan (BP). In that document BPA evaluated the cumulative consequences on a regional basis for the operation and development of power and transmission resources. The BPA Administrator adopted the market-driven alternative in the BP ROD and a tiering process for subsequent site-specific projects such as this one that are within the scope of the market-driven policy. BPA's decision to offer terms for integrating the Project follows the decision making process outlined in the BP EIS and BP ROD and is within that scope.

The RCP EIS discusses the environmental impacts of one of the combustion turbine units of the proposed Project, as BPA was considering acquisition of the output from Unit 1. The Project proponents now seek integration into the FCRTS of two units. Therefore, BPA reviewed the RCP EIS and the BP EIS to determine whether the potential environmental impacts of integrating the additional unit fell within the range and magnitude of impacts previously anticipated. BPA also took into consideration FERC's environmental review of the gas pipeline route addressed in the RCP EIS, as the route has since changed. Noting that the environmental effects of an additional unit were addressed in each of the cumulative impacts sections of the RCP EIS, and determining the potential impacts from this proposed project would fall within the range of impacts considered in the BP EIS, BPA has determined that no further NEPA documentation is necessary.

Since the completion of the RCP EIS in November 1995, additional environmental analysis has been done. Proposed changes in the natural gas pipeline route prompted FERC, the jurisdictional agency, to conduct the Grays Harbor Pipeline Project

Environmental Assessment (EA) (Docket No. CP01-361-000, March 2002). Also, with several new generation projects being proposed in the region, BPA felt it necessary to conduct additional air impact analyses to address cumulative impacts.

PROJECT DESCRIPTION

The Project consists of two natural-gas-fired combined cycle combustion turbine units, a single steam turbine generator, and an associated natural gas pipeline. The Project is located on a 20-acre site within an existing construction laydown area on the former Satsop Power Plant site. The balance of the site has been transferred to a political subdivision of the Grays Harbor County to pursue economic development activity pursuant to county ordinances and RCW 80.50.300. Energy Northwest/Duke Energy retains ownership of the Project site and has agreements with the county corporation to ensure that all facilities and/or systems necessary to support the construction and operation of the Project are available.

Each combustion turbine unit will generate an average electrical nominal gross power output of 175 MW and have a heat recovery steam generator. The steam turbine generator will generate approximately 300 MW gross. Dry Low NO_x Combustors in combination with Selective Catalytic Reduction will be used to minimize the formation of nitrogen oxides. An oxidation catalyst will be used to control carbon monoxide and volatile organic compounds emissions. Cooling will be provided by a cooling tower consisting of eight cells.

Natural gas will be used as the primary fuel, and will be supplied through a 49-mile pipeline, approximately 16-20 inches in diameter, connecting to the Northwest Pipeline Corporation's mainline near Vail, Washington.

BPA will construct a new 230-kilovolt (kV) terminal at BPA's Satsop Substation to interconnect the Project on a new 230-kV radial line. The radial line will be approximately 4000 feet in length. The transmission lines will be placed in the existing BPA right-of-way. Towers will be placed to avoid unstable areas along Fuller Creek. The terminal design includes two 230-kV circuit breakers with transformers, with four 230-kV disconnect switches, support structures, foundations, grounding, shielding system protection and control equipment, and communication facilities. BPA will also build a 500-kV triple-circuit construction line, with the existing Satsop Park-Cosmopolis 115-kV line, between Satsop Substation and the Project switchyard, approximately 4000 feet. The line will have a continuous overhead ground wire and a fiber optic underbuild.

BPA will also design and construct the relocation of the Satsop Park-Cosmopolis 115-kV transmission facilities in the vicinity of the Satsop Substation's 230-kV yard to facilitate expansion of the yard to accommodate the new 230-kV terminal. BPA will install metering at the Satsop Substation, as well as construct communication and remedial action scheme facilities necessary to interconnect the Project into the FCRTS.

Power generated at the Project will be delivered to the regional transmission grid via the new 230-kV transmission line. Power generated at the Satsop Project will be available for purchase in the wholesale power market. No BPA power purchase is planned at this time.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

BPA's RCP EIS

As discussed above, BPA's RCP EIS analyzed the site-specific impacts of the Project. Below is a summary of those potential impacts and associated mitigation measures.

Air Quality

The RCP EIS described the Project as having the following potential impacts on air quality during construction and operation:

- Emissions of criteria air pollutants such as nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), particulate matter (PM₁₀), and sulfur dioxide (SO₂).
- Emissions of toxic pollutants such as ammonia, benzene, formaldehyde, lead.
- Health problems associated with above pollutants.
- Decreased visibility in scenic areas.
- Deposition of sulfur and nitrogen compounds.
- Local fogging and icing from cooling tower plumes.
- Fugitive dust during construction.

Mitigation Measures

- Use of Best Available Control Technology (BACT) to control levels of pollutant emissions. Under BACT, the "most stringent control technology" must be applied to the control of each pollutant, unless it can be demonstrated to EPA that less stringent measures will provide required control.
- Water tank trucks will spray to control dust, as required.

Based on the anticipated design technology and planned mitigation measures, the Project is considered to have low air quality impacts.

Additional Air Impact Analysis

Since the RCP EIS was completed, several new generation projects have been proposed to meet regional energy need, and the project proponents are asking BPA to integrate many of these resources into the FCRTS. Because the majority of these resources are combustion turbines, there is a concern about the potential impacts on air quality. BPA initiated a Regional Air Quality Modeling Study¹ (Air Study) to provide clarifying information. The scope of the Phase I Air Study included proposed power plants in Washington, the northern half of Oregon, and the Idaho panhandle. The air quality impacts of more than 45 natural-gas-fired combustion turbines representing more than 24,000 MW in capacity were evaluated. The analysis assumed that all plants, including peaking plants, were operating at peak load with their primary fuel for the entire simulation period. The CALPUFF model was used to assess power plant sulfur dioxide (SO₂), nitrogen oxide (NO_x), and particulate matter nominally 10 microns and less (PM₁₀). Results were compared against established criteria for human health, *i.e.*, the National Ambient Air Quality Standards (NAAQS) and the Prevention of Significant Deterioration (PSD) Significant Impact Levels (SILs), and the environment (nitrogen and sulfur deposition as well as visibility in sensitive areas²).

The Phase I Air Study suggested that the proposed power projects (including the Satsop Project) would probably not significantly contribute to sulfur and nitrogen deposition in Class I areas, the Class I PSD Increments, regional Class II PSD Increments or regional concentrations in excess of the NAAQS. The model simulations did suggest that the proliferation of proposed projects in the study area could potentially degrade visibility within Class I and Scenic Areas if all the projects become operational. Of all the parameters evaluated in the study³, visibility was the only criteria consistently exceeded.

When all of the projects proposed to be energized before 2004 (approximately 11,000 MW in total capacity) were modeled, regional haze from particulate and NO_x emissions potentially affected the majority of Class I/Scenic/Wilderness Areas. Haze is not currently regulated, although some Federal Land Managers have issued guidelines for haze⁴. Because the projected regional need for resources is only about 5,000 MW to 6,000 MW over the next 5 years, and only 8,000 MW over the 10-year projection, it is doubtful that most of the proposed resources will be built. Moreover, some of this regional need will be met with renewable resources such as wind energy. In addition, there are transmission limitations for the number of resources that can be integrated. Therefore, actual impacts will not be as frequent or adverse as those predicted in the Phase I Air Study.

¹ Regional Air Quality Modeling Study, Bonneville Power Administration, July 2001. Air Study is found at <http://www.efw.bpa.gov/cgi-bin/PSA/NEPA/SUMMARIES/air2>.

² Sensitive areas include NW class I areas, wilderness areas, and the Columbia River Gorge National Scenic Area.

³ Other study criteria include: National Ambient Air Quality Standards, New Source Review/Prevention of Significant Deterioration (NSR/PSD) increment consumption, NSR/PSD Significant Impact Levels, and nitrogen and sulfur deposition.

⁴ Federal Land Managers' Air Quality Related Values Workgroup (FLAG) Phase I Report, December 2000. U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service.

Phase II of the Air Study, examining the Project's contribution to the overall regional haze impacts predicted for the larger group or proposed power projects, found that the Project would not noticeably contribute to regional haze at any of the Class I areas within the BPA Service Area, the Columbia River Gorge National Scenic Area, or the Mt. Baker Wilderness when the facilities considered in the analysis are fired by natural gas. However, the Project's contributions to regional haze in Mt. Rainier National Park could be noticeable when the nearby Chehalis Generation Facility is using fuel oil. Such occurrences are expected to occur infrequently. The Phase II analysis did not consider whether meteorological conditions causing the greatest impacts actually coincide with good "natural" background visibility. Background aerosol concentrations will likely be higher and fog, low clouds, precipitation and other obscuring weather phenomena may reduce visual ranges so in some instances the impacts of the projects considered in the analysis would not be perceptible.

Water Resources

The RCP EIS described the Project as having the following potential impacts on water resources during operation:

- Depleted surface water from the Chehalis River and groundwater aquifer.
- Degraded surface water quality in the Chehalis River.

Mitigation Measures

- Water treatment as required prior to discharge to Chehalis River to meet NPDES permit requirements.
- Addition of Ranney well water to lower effluent temperature.
- Instream Flow - the rate of diversion for the Project is limited to a maximum of 9.5 cubic feet per second. However, the diversion shall be decreased (or stopped) as necessary to ensure that the Project does not affect the minimum base flows immediately downstream of the point of diversion. All withdrawals for the Project are subject to the withdrawal restrictions concerning periods of low flow.⁵

Existing surface and well water rights are not expected to be adversely affected from Ranney well pumping to meet the project's requirements. Although there would be a net water loss in the Chehalis River from consumption by the Project, the loss is relatively small. Therefore, the project would have a low impact on water quantity.

Water quality constituents in the Project's process wastewater to the Chehalis River will be regulated to legal levels under a modified National Pollution Discharge Elimination System (NPDES) permit. However, levels of lead and mercury will require monitoring

⁵ Washington State Energy Facility Site Evaluation Council's Site Certificate Application, Attachment III Water Withdrawal Authorization.

to ensure that proper mitigation measures can be applied to maintain acceptable levels. Therefore, with anticipated mitigation, project impacts to water quality are considered low.

Noise

The RCP EIS described the Project as having the following potential impacts on noise during construction and operation:

- Disturbance from construction activities.
- Disturbance from operational noise to nearby residences.

Mitigation Measures

- Mufflers on construction equipment.
- No construction within 1000 feet of occupied dwellings on Sundays, legal holidays, or between 10 pm and 6 am.
- Use of noise silencers and sound absorbing material during construction.
- Major noise sources will be separated and enclosed in acoustical buildings.
- Noise barriers will be constructed between sources and sensitive receptors.

Construction noise would be temporary and typical of noise from similar projects; it would be limited to daytime hours. Sound attenuation has been included in the project design, and operational noise levels will be in compliance with applicable regulations. Therefore the project's noise impacts are considered to be low.

Land Use

The RCP EIS described the Project as having the following potential impacts on land use during construction:

- Temporary disruption to existing land uses.
- Inconvenience to local residents and travelers.

Mitigation Measures

- Employ practices that will minimize noise, dust, and traffic.
- Construct landscaped buffer between Project and residences.

Because the majority of impacts are temporary and mitigation measures are being developed to minimize the disruption to land use, the Project is considered to have low impacts to land use.

Socioeconomics and Public Services

The RCP EIS described the Project as having the following potential impacts on socioeconomics and public services during construction and operation:

- Increased demand for temporary and permanent housing.
- Temporary and permanent employment opportunities would increase in project vicinity.
- Wages and taxes paid by the project would benefit local and regional economy.
- Increased demand for local services.
- Traffic on local roadways would increase.

Mitigation Measures

- Traffic and parking control plan during construction to be developed.

The increased job opportunities, both during the construction phase and operation phase, and the increased tax revenue, are considered to have a beneficial socioeconomic impact. Increases in housing and traffic resulting from the Project would be minor and could be mitigated.

Wildlife and Fish

The RCP EIS described the Project as having the following potential impacts on wildlife and fish during construction and operation:

- Temporary habitat disturbance.
- Permanent conversion of forested habitat to shrubs and grass habitat.
- Deposition of sediments from construction erosion reducing spawning beds.
- Loss of riparian vegetation.
- Degraded water quality in Chehalis River.
- Lower flow in Chehalis from net loss of project from evaporation.
- Acoustic shock to fish from blasting.

- Interruption of migration.

Mitigation Measures

- Retain native vegetation as much as possible during construction.
- Replant disturbed habitat soon after construction.
- Avoid waterway construction between June 15 and September 30.
- Avoid construction near active bald eagle nests.
- Prevent construction equipment from entering streams.
- Properly store chemicals on construction site.
- Preparation and implementation of an Erosion and Sedimentation Control Plan including sediment traps, silt fences, diversion structure, and revegetation.
- Adequately treat effluent from project before discharging to Chehalis River.

Potential impacts to wildlife from construction and operation of the Project include permanent conversion of habitat, temporary disturbance of wildlife habitat, and disturbance to wildlife from noise of construction and operation. Potential impacts to fish include sedimentation and turbidity, acoustic shock, cover loss, and migratory interruption. With the proposed mitigation measures however, the Project is expected to have low impacts on wildlife and fish.

Vegetation/Wetlands

The RCP EIS described the Project as having the following potential impacts on vegetation and wetlands during construction and operation:

- Temporary disturbance to plant communities.
- Permanent conversion of forest vegetation to grass or shrub vegetation.
- Invasive plant species in cleared areas.
- Temporary disturbance to wetlands and loss of function until restored after construction.

Mitigation Measures

- Avoidance of wetlands where possible.

- Preparation and implementation of an Erosion and Sedimentation Control Plan including sediment traps, silt fences, diversion structure, and revegetation.
- Revegetation with native species.
- Mitigation plan for minimizing impacts to plant communities.
- Minimized construction width for pipelines in wetland areas.
- Wetland soils stockpiled and replaced.

Because most of the vegetation disruption would be temporary and much of the vegetation disturbed is common to the area, the Project is considered to have low impacts to vegetation. Some wetlands would be temporarily disturbed and some forest wetlands permanently disturbed along the gas pipeline route. This disturbance includes vegetation clearing, trench excavation and backfilling, equipment traffic, and potential water quality degradation from increased sedimentation and possible hydrocarbon spills. Filling of wetland habitat during construction of the water and gas pipelines would result in a temporary loss of wetland functions and values. Wetland habitats would be restored as soon as construction is completed.

Cultural Resources

The RCP EIS described the Project as having the following potential impacts on cultural resources during construction:

- Disturbance of prehistoric and historic archaeological sites.

Mitigation Measures

- Halt construction if previously unrecorded sites are found, and consult with State Historic Preservation Office (SHPO).
- Provide information to contractors regarding discovery procedures.

There are no known properties that are eligible for nomination to the National Register of Historic Places within the project area. The likelihood and magnitude of impacts to cultural resources are considered to be low.

FERC's Grays Harbor Pipeline Project EA

As mentioned above, since the completion of the RCP EIS, there have been some changes to the natural gas pipeline route from the original proposal. FERC, now the jurisdictional agency for permitting the pipeline, conducted an EA on the gas pipeline, issued in March 2002. The scope of FERC's EA included the pipeline and associated facilities (e.g., meter station, compressor addition, and valve assemblies). According to the EA, over 77 percent of the 49-mile pipeline alignment currently proposed is the same

route evaluated in BPA's RCP EIS. Only two portions of the proposed route, Olympia to Shelton Line (MP 16.7 to MP 24.7), and new right-of-way at the end of the route (MP 45.7 to MP 49) are different from the route analyzed in the RCP EIS.

On April 24, 2002, FERC approved an order issuing a certificate of public convenience and necessity authorizing construction and operation of the pipeline project. Based on the findings in the EA, FERC determined no further NEPA analysis was required.

PUBLIC PROCESS AND CONSIDERATION OF COMMENTS

BPA's RCP EIS process generated site-specific environmental information about the Project and provided opportunities for public comment, including public meetings held in Elma, Washington.

A 45-day period (extended to 57 days) for accepting public comments on the draft RCP EIS began upon publication of the notice of availability in the Federal Register. During this period, BPA received comments on the document from private citizens, civic organizations, and state, local, and Federal government agencies. Comments were received in the form of letters and phone calls, and through oral and written testimony given at a formal public hearing held at the Elma High School. To publicize the hearing, display advertisements were placed in local newspapers two weeks, and again two days, prior to the hearing.

On July 26, 2001, FERC issued a Notice of Intent to Prepare an Environmental Assessment for the Proposed Grays Harbor Pipeline Project 2001 and Request for Comments on Environmental Issues (NOI). The comment period for the NOI ended on August 27, 2001. On March 4, 2002, FERC issued the EA for public comment. The comment period for the EA ended on April 3, 2002.

Washington State's EFSEC also held a public process on the Project proponent's application for a Site Certificate.

PUBLIC AVAILABILITY

This ROD will be distributed to all interested parties and affected persons and agencies. Copies of the RCP EIS, BP EIS, BP ROD, and additional copies of this Satsop Combustion Turbine Project ROD are available from BPA's Public Information Center, P.O. Box 12999, Portland, Oregon, 97212. Copies of these documents may also be obtained by using BPA's nationwide toll-free document request line: 1-800-622-4520, or by accessing website www.efw.bpa.gov.

CONCLUSION

I have decided it is in the best interests of BPA and the Pacific Northwest to offer contract terms for integrating the Satsop Combustion Turbine into the FCRTS at BPA's Satsop Substation. As described above, BPA has considered both the economic and

environmental consequences of taking action to integrate power from the Project into the FCRTS. This decision is:

- within the scope of environmental consequences examined in the RCP EIS, and the BP EIS;
- in accordance with BPA's transmission access tariff; and
- in accordance with BPA's statutory authority to make available to all utilities any capacity in this system determined in excess to that required by the United States (16 U.S.C. 838d).

BPA will take measures to ensure the continuing safe, reliable operation of the FCRTS. This ROD identifies all practicable means to avoid or minimize environmental harm that might be caused by the integration of the Project into the FCRTS. BPA adopts and will undertake, or require the Project to undertake, the mitigations identified in this ROD, including mitigations imposed in the permits and decision documents of regulatory agencies such as FERC.

BPA contracts providing for integration of power from the Project into the FCRTS shall include terms requiring that all pending permits be approved before the contract is implemented. The Project will comply with terms and conditions of all permits issued pertaining to the Project. BPA's contracts will also include appropriate provisions for remediation of oil or other hazardous substances associated with construction and operation of related electrical facilities in a manner consistent with applicable Federal, State, and local laws.

Issued in Portland, Oregon.

<u>/s/ Steven G. Hickok</u>	<u>4/30/02</u>
for Stephen J. Wright	Date
Administrator and	
Chief Executive Officer	