



STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL
PO Box 43172 • Olympia, Washington 98504-3172

**ADOPTION NOTICE
and
DETERMINATION OF SIGNIFICANCE**

**Pursuant to Chapter 463-47 WAC and
WAC 197-11-360, -600, -610, and -630**

**Adopting Existing NEPA Environmental Document
and
Adopting an Addendum to NEPA Environmental Document**

for the
**Satsop Combustion Turbine Project - Application for Amendment to Site Certification
Agreement, EFSEC Application No. 94-1**

Date of Issuance: January 30, 1996

Description of current proposal:

The Washington Public Power Supply System (Supply System) seeks to construct and operate two 245-megawatt natural-gas fired combined-cycle electrical generation units and associated facilities, and a 48 mile natural gas pipeline. The Supply System has applied to the Energy Facility Site Evaluation Council (EFSEC or the Council) to amend its Site Certification Agreement and related approvals for the Washington Nuclear Project No. 3 and 5 (WNP-3/5) to permit the construction and operation of the Satsop Combustion Turbine Project and associated natural gas pipeline.

Proponent: Washington Public Power Supply System
PO Box 1223
Elma, WA 98541-1223
(360) 482-4428



The documents are available for public review, by appointment and during normal business hours, at the following locations:

Energy Facility Site Evaluation Council
925 Plum Street SE, Building 4
Olympia, Washington 98504-3172

Washington Public Power Supply System
471 Lambert Road
Elma, WA 98541-1223

The documents may be obtained, upon request, for the cost of the copy service.

The Council has identified and adopted these environmental documents as being appropriate for this proposal after independent review. The following additional documents, among others, supplement the documents identified. These additional documents also address environmental impacts of the Satsop Combustion Turbine Project, including the analysis of on-site and off-site alternatives:

Application for an Amendment to the Site Certification Agreement, Application No. 94-1 as amended, filed by the Washington Public Power Supply System

1990 Resource Program, Bonneville Power Administration, July, 1990

1992 Resource Program (10 Year Plan), Bonneville Power Administration, October, 1992

1991 Northwest Conservation and Electric Power Plan, Volume 1, Northwest Power Planning Council, No. 91-04, 1991

1991 Northwest Conservation and Electric Power Plan, Volume 11, Northwest Power Planning Council, No. 91-05, 1991

Draft Strategic Business Plan, Bonneville Power Administration, June, 1994

Columbia Basin Fish & Wildlife Program, Northwest Power Planning Council, No. 94-55, December 14, 1994

The adopted documents and supplemental documents meet the Council's environmental review standards and needs for the current proposal, and they will be relied on in the decisionmaking process.

If you would like to request a public hearing on the adequacy of the Council's adopting these documents, you must make a written request to the address below within 30 days of the date of this notice. A public hearing may be held, depending on the level of public interest in the Council's determination.

Name of agency adopting documents: Energy Facility Site Evaluation Council
925 Plum Street SE, Building 4
PO Box 43172
Olympia, Washington 98504-3172

Signature: 
Frederick S. Adair, EFSEC Chair

Contact Person: Jason Zeller, Council Manager
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ADDENDUM
to
ENVIRONMENTAL DOCUMENTATION

Resource Contingency Program --
Washington Final Environmental Impact Statement

Prepared in Compliance with the State Environmental Policy Act of 1971
Chapter 43.21, Revised Code of Washington

SEPA Rules, Effective April 4, 1984
Chapter 197-11, Washington Administrative Code

Issued by:
Washington State Energy Facility Site Evaluation Council
January 26, 1996

PREFACE

This Addendum for the proposed Satsop Combustion Turbine Project has been prepared under the direction of the Washington State Energy Facility Site Evaluation Council (EFSEC). The purpose of this Addendum is to add information on natural gas pipeline route alternatives to the Washington Final Environmental Impact Statement for the Resources Contingency Program, prepared by the Bonneville Power Administration and issued December 1, 1995 (DOE/EIS-0230). Procedures for issuing an addendum are described in the State Environmental Policy Act Rules (WAC 197-11-625).

The scope of this Addendum is limited to a description and comparison of the alternative routes that were considered for the location of the natural gas pipeline.

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1.0 INTRODUCTION

On December 1, 1995, the Bonneville Power Administration issued a Final Environmental Impact Statement (FEIS) for the Resource Contingency Program. This FEIS, prepared under the procedures of the National Environmental Policy Act (NEPA), includes an adequate disclosure of the impacts of the Satsop Combustion Turbine Project, including the impacts of the proposed routing for the gas pipeline that would provide natural gas to the Satsop site for the project.

The purpose of this Addendum is to provide additional information on two other gas pipeline routes that were considered by the applicant and the environmental benefits of the selected route over the three alternatives that were not advanced for consideration.

As part of the Satsop Combustion Turbine Project, a gas pipeline is needed to supply natural gas from the existing Northwest Pipeline (NWPL) main lines east of Interstate 5 near Rainier, Washington. Three routes were considered: (1) use of the existing NWPL route from the main line to McCleary, Washington with a new 12-mile spur route to the site (Alternatives 1 and 2); (2) a new line from the site following the existing Bonneville Power Administration (BPA) 500 kV transmission corridor east to a location near Tumwater (Alternative 3); and (3) a new 48-mile route from the main line that would parallel the existing NWPL route from the main line for approximately 21 miles and then diverge to cross over ridge tops to avoid many of the water and wetland crossings made by the existing NWPL route. Section 3.0 provides a description of each of the alternatives and a figure (Figure 2) showing their locations.

The Addendum describes:

- Criteria, Standards, and Factors that were utilized to develop the pipeline route. (Section 2.0)
- Alternative Pipeline Routes that were considered, including the proposed route. (Section 3.0)
- Relationship of the Proposed Route to the Routing Criteria. (Section 4.0)
- Further Refinements Made to the Proposed Route to Minimize Impacts. (Section 5.0)

2.0 CRITERIA, STANDARDS, AND FACTORS UTILIZED TO DEVELOP PIPELINE ROUTE

This section discusses federal, state, and industry criteria used in the development of the pipeline route and the transmission line route and describes how the route selected meets these criteria and standards.

Three primary categories of selection criteria were considered when developing the pipeline route: (1) engineering aspects, including constructability along the route, (2) potential environmental impacts, and (3) population impacts. Criteria considered within each of these categories are described below followed by the applicable federal and state standards. The relationship between the route selected and the criteria and standards considered in the selection process is discussed in Section 4.0.

2.1 CRITERIA FOR PIPELINE ROUTE SELECTION

2.1.1 Engineering

The Satsop Combustion Turbine Project will require a 16 - 20 inch diameter pipeline to supply adequate gas and pressure to the project. The size of the right-of-way required is directly related to the diameter of the pipeline and the equipment necessary to construct the line. As the size of the pipe increases, the field bending radius becomes larger, dictating how tight a curve can be made when turning corners or how severe the approach to sag- and over-bends can be made. (A sag-bend is an upward curving bend, such as where the pipeline approaches a hill from a flat valley. An over-bend is a downward curving bend, such as where the pipeline leaves a hilltop and bends down into a valley.) Further, the larger the pipe diameter, the greater the task of keeping the pipe buried in saturated areas. The accepted practice is to coat the pipe with concrete or attach concrete weights to the line to prevent it from floating up through the water or mud. With larger lines, water crossings are kept to a minimum to reduce cost and complexity.

The presence of steep slopes, particularly sidehills, is a key engineering selection consideration. Construction on the sides of hills should be minimized to reduce the need for costly and labor-intensive earth stabilization techniques. The route selection evaluations also focused on areas which will require the least amount of ongoing maintenance after construction.

Pipelines laid adjacent to high voltage transmission lines in powerline corridors are subject to induced current from the lines, and special engineering techniques must be used to make sure the pipeline does not accumulate high voltage which can be dangerous to operating personnel and equipment. In addition, more care must be exercised during construction to maintain a safe working environment for any personnel working on or near the pipeline.

2.1.2 Environmental

Consideration of the potential for environmental impacts is an important aspect of pipeline route selection. In order to minimize environmental impacts, reduce associated construction costs, and ensure compliance with environmental regulations and policies, the Supply System's pipeline engineering consultant focused on selecting a route that minimized construction in riparian areas, wetland areas, streams, and rivers, to the extent practical.

Where construction in environmentally sensitive areas is unavoidable, specialized construction methods will be used. The Supply System contractors will use a variety of specialized construction techniques to avoid or minimize the following:

- Destruction or loss of wetland habitat.
- Human interaction with threatened and endangered species.
- Destruction or loss of critical habitat.
- Degradation or alteration of stream banks and channels.

- Destruction of cultural or historic resources.
- Discharges of sediment and storm water runoff into sensitive areas as a result of construction activities.

2.1.3 Population

As a general rule, natural gas pipelines are routed through the least populated areas for reasons of safety and cost, although this is not always possible, particularly in heavily urbanized areas. As population densities increase, the potential for third party damage to pipelines (i.e., damage caused by digging) increases. Safety precautions must be increased and extra care taken to protect the pipeline from damage, which raises the cost of the line. Road and rail crossings are made only as necessary, as crossings are more expensive than cross country pipeline construction and are more susceptible to third-party damage. In addition, landowner opposition is generally greater in areas which have a higher potential for development. Using pre-existing corridors through more densely populated areas can avoid much of this impact.

Right-of-way costs are higher in more densely populated areas. The smaller the parcel of land in which right-of-way is to be created, the greater the monetary impact to that particular piece of property, resulting in more time to acquire right-of-way and higher costs.

2.2 FEDERAL AND STATE STANDARDS

Federal regulations (49 CFR part 192.5-111) set standards for pipeline design using four class locations summarized as follows:

- Class 1 - An area that has 10 or less buildings intended for human occupancy within 220 yards on either side of the pipeline centerline along any continuous 1-mile length.
- Class 2 - An area that has more than 10 and less than 46 buildings intended for human occupancy within 220 yards on either side of the pipeline centerline along any continuous 1-mile length.
- Class 3 - An area that has 46 or more buildings intended for human occupancy within 220 yards on either side of the pipeline centerline along any continuous 1-mile length.
- Class 4 - Any class location where buildings with four or more stories above ground are prevalent. A Class 4 location ends 220 yards from the nearest building with four or more stories.

The State of Washington also has regulations which affect the design of the pipeline. These are codified in Chapter 480-93 WAC and dictate limitations on the amount of pressure a pipeline can carry in populated areas as follows:

WAC 480-93-020 Proximity considerations. Gas facilities having a maximum operating pressure greater than five hundred psig shall not be operated within five hundred feet of the places described below without prior written authorization of the commission, unless a waiver previously approved by the commission continues in effect:

- (1) A building intended for human occupancy which is in existence or under construction prior to the date authorization for construction is filed with the commission, and which is not owned and used by the petitioning gas company in its gas operations;
- (2) Property which has been zoned as residential or commercial prior to the date authorization for construction is filed with the commission;
- (3) A well-defined outside area, such as a playground, recreation area, outdoor theater, or other place of public assembly, which is occupied by twenty or more people, sixty days in any twelve-month period which is in existence or under construction prior to the date authorization for construction is filed with the commission; and
- (4) A public highway, as defined in RCW 81.80.010(3).

In requesting prior written authorization of the commission, the petitioning gas company shall certify that it is not practical to select an alternative route which will avoid such locations and further certify that management has given due consideration to the possibility of the future development of the area and has designed its facilities accordingly. The petition shall include, upon request of the commission, an aerial photograph showing the exact location of the pipeline in reference to places listed above that are within five hundred feet of the pipeline right of way.

WAC 480-92-030 Proscribed areas. Gas facilities having a maximum operating pressure between two hundred fifty-one psig and four hundred ninety-nine psig shall not be operated within 100 feet of the places described below without prior written authorization of the commission, unless a waiver previously approved by the commission continues in effect:

- (1) A building intended for human occupancy which is in existence or under construction prior to the date authorization for construction is filed with the commission, and which is not owned and used by the petitioning gas company in its gas operations;
- (2) A well-defined outside area, such as a playground, recreation area, outdoor theater, or other place of public assembly, which is occupied by twenty or more people, sixty days in any twelve-month period which is in existence or under construction prior to the date authorization for construction is filed with the commission.

The petition shall include, upon request of the commission, an aerial photograph showing the exact location of the pipeline in reference to the places listed above that are within one hundred feet of the pipeline right-of-way.

3.0 ALTERNATIVE PIPELINE ROUTES CONSIDERED

The natural gas pipeline route was determined based on the pipeline's beginning and ending points, which are fixed for this project. The power plant location (the terminus of the pipeline) was established at an existing power plant site, where there is an available infrastructure, including an existing water supply system. The beginning of the proposed pipeline route was determined by the location of existing Northwest Pipeline (NWPL) main lines and shall be considered the tap at the existing Northwest Pipeline (NWPL) trunk line located in Section 21, Township 16 North, Range 1 East of Thurston County, Washington. The beginning point of the proposed pipeline is the closest take-off point that could reasonably serve the Satsop Combustion Turbine Project. The terminus of the pipeline shall be at the new meter and regulator station location on the Satsop Power Plant property located in Section 7, Township 17 North, Range 6 West in Grays Harbor County, Washington.

This analysis identifies natural gas pipeline routes that have been evaluated for this project. The following sections demonstrate that the proposed pipeline alignment is the only practicable alternative and is the least environmentally damaging alternative to wetlands and other natural resources.

Three natural gas pipeline routes were investigated for the Satsop Combustion Turbine Project, and were reviewed via helicopter, with specific locations checked on the ground after the flight, beginning with routes that followed the existing NWPL pipeline or BPA 500-kV transmission line corridor. (See Figure 1 for locations of existing pipelines and transmission lines.)

The three routes were: (1) an approximately 50-mile pipeline route following the existing NWPL corridor from Vail, Washington to McCleary, with construction of an approximately 12-mile spur pipeline from the site eastward to an existing NWPL meter station just south of the city of McCleary; (2) construction along the existing BPA 500-kV transmission line corridor east from the site to a location near Tumwater; and (3) construction of an approximately 48-mile pipeline from Vail to the site (the selected route).

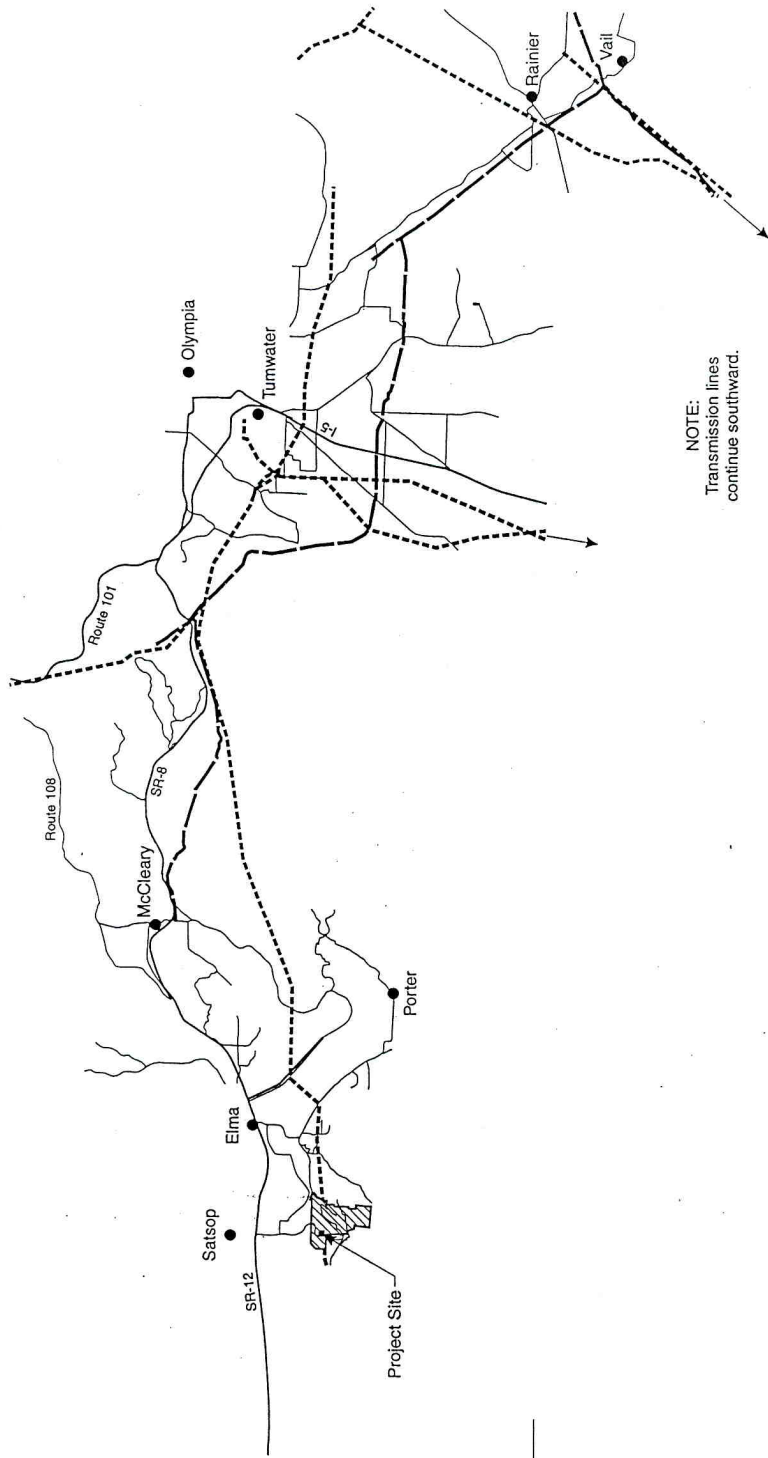
From these three routes, four alternatives were developed (see Figure 2 for the location of the alternatives).

Alternative 1: Alternative 1 would utilize the existing NWPL from Vail to McCleary, with construction of an approximately 12-mile spur line from the existing NWPL meter station at McCleary to the project site. This alternative would have been operated by NWPL.

Alternative 2: Alternative 2 would follow the same route as Alternative 1. A new 50-mile pipeline would have been constructed paralleling the existing NWPL from Vail to McCleary with a 12-mile connection to the site from the McCleary meter station.

Alternative 3: Alternative 3 would follow the existing BPA 500-kV transmission line corridor east from the site. Because of construction and environmental difficulties, this alternative was dropped before the eastern portion of the route alternative was developed.

Alternative 4: Alternative 4 is the selected route. It has the same beginning and ending points as Alternatives 1 and 2, but portions of the routes differ. The routes share a common path of the first 24 miles. The routes diverge in Section 22, Township 18 North, Range 3 West. The non-selected NWPL

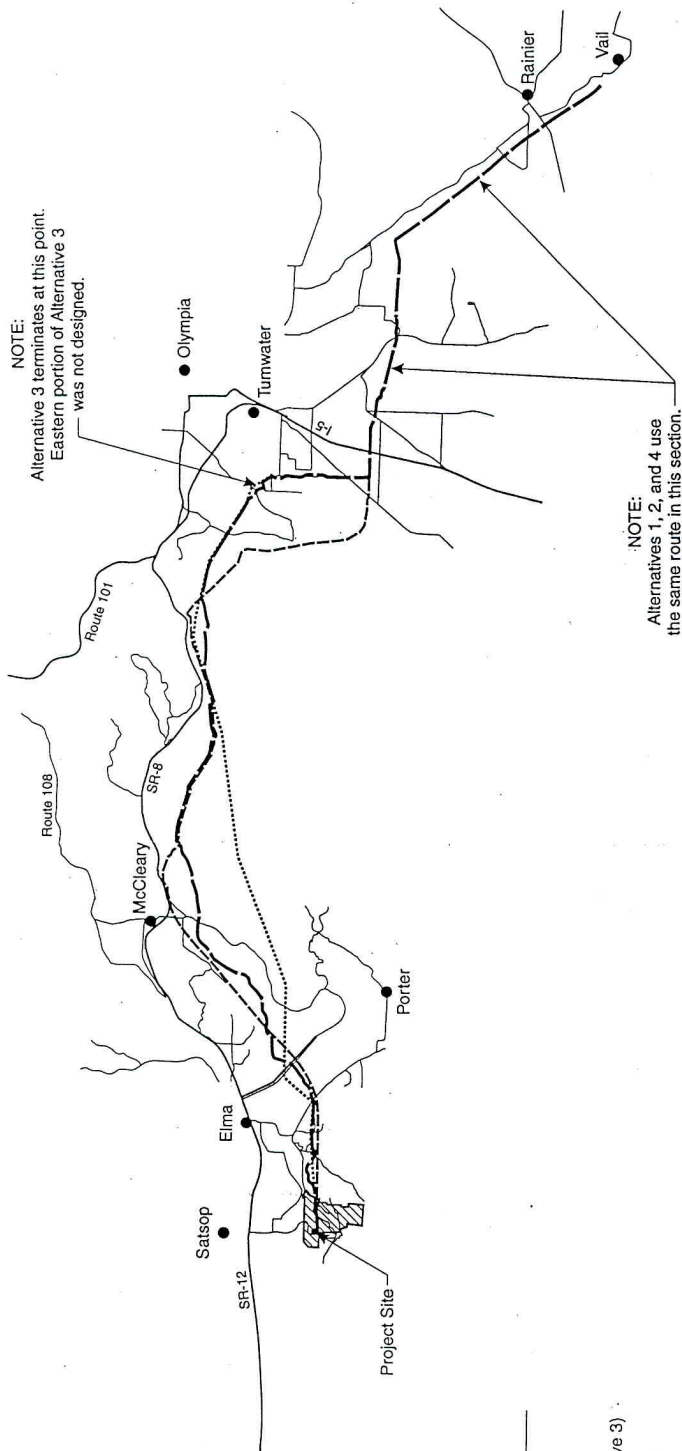


LEGEND

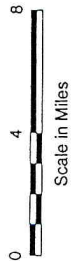
-  Existing NWPL gas pipeline
-  Transmission line



EXISTING NWPL AND BPA TRANSMISSION ROUTES
 Satsop Natural Gas Pipeline
 Washington State
 FIGURE 1



- LEGEND
- Existing NWPL route alternative
(Alternatives 1 and 2)
 - BPA corridor alternative (Alternative 3)
 - Selected 48-mile route alternative
(Alternative 4)



ALTERNATIVE PIPELINE ROUTES
Satsop Natural Gas Pipeline
Washington State
FIGURE 2

route (Alternatives 1 and 2) continues north before turning west into the valley and paralleling Highway 8 to McCleary. The selected route (Alternative 4) goes over the ridge tops and eliminates many of the water crossings and wetlands associated with the valley route.

3.1 ALTERNATIVE 1: 12-MILE PIPELINE SPUR ROUTE

Washington Public Power Supply System (Supply System) initially considered constructing an approximately 12-mile spur pipeline from the proposed site to an existing McCleary meter station located just south of Highway 8 on Mox Chehalis Road. From the site, this route would have followed the existing Bonneville Power Administration (BPA) right-of-way for approximately eight miles and then turned northeast to follow Mox Chehalis Road to the meter station. The meter station ties in with an existing NWPL lateral pipeline route.

In October 1993, the Supply System discussed the need for a natural gas pipeline with NWPL. At that time, NWPL had decided to expand the McCleary lateral to meet rising demands (unrelated to the Satsop Combustion Turbine Project). NWPL had evaluated looping the line back to the main line (near Vail, Washington) and/or adding compression. They decided upon adding compression because major route changes (with the acquisition of new easements) would have been required for a loop line (due to wetland and stream considerations along the existing pipeline corridor). However, to serve the needs of the Satsop CT Project, adding additional compression was not an option due to the limiting size of the existing line. Therefore a loop line would have been necessary in order to supply the needed natural gas volume to the CT site.

Additional discussions with NWPL regarding construction costs and the schedule of expanding the McCleary lateral by looping revealed that NWPL could not guarantee completion of the pipeline permitting and construction within the 24 to 30 month construction window that was required by the development contract awarded to the Supply System by BPA (in part, this is because NWPL would have to go through the Federal Energy Regulatory Commission (FERC) licensing process and this process would not be started in advance of a BPA notice to proceed with the CT project).

Under this alternative, the Supply System would have conducted environmental studies and obtained permits (through EFSEC and the Corps) for the portion of the route from the site to the McCleary meter station, while NWPL would have been responsible for the studies and permitting (through FERC) for building the loop line.

Much of this route followed existing corridors and would have been in relatively flat, low-lying areas adjacent to streams and rivers. This route, as proposed, would have crossed approximately 20 wetlands (based on National Wetland Inventory mapping and initial site reconnaissance). The majority of the wetlands are concentrated in the vicinity of the Chehalis River and in the low-lying areas along Mox Chehalis Creek (the route would cross the creek several times).

3.2 ALTERNATIVE 2: 50-MILE PIPELINE ROUTE

To meet the permitting schedule constraints, the Supply System proposed to construct and operate a gas pipeline from the NWPL main line east of Interstate 5 under the umbrella of the overall CT project. An approximately 50-mile pipeline route was considered which would extend from the Ignacio-to-Sumas

natural gas pipeline near Vail, Washington to the site. A new line along the 50-mile route would supply sufficient natural gas to the site to meet the needs of the project.

The Supply System would be responsible for the environmental studies and permitting for the entire route (as opposed to just the 12-mile spur identified in Alternative 1). At the request of the Supply System, NWPL evaluated a route that would have generally followed the existing McCleary lateral route to the extent possible and the proposed alignment would generally be the same as the looping line (and spur) discussed in Alternative 1 above.

Constructing the pipeline along the existing lateral was technically feasible, but presented many environmental challenges. Based on National Wetland Inventory mapping, this route had the potential to affect at least 37 wetlands (it is assumed that additional wetlands would be identified during field studies). The existing NWPL route crosses the Black River approximately one mile south of Black Lake through a nature conservancy area. New easements would have been required to locate the new line outside of the existing corridor in the area south of Black Lake and in many other areas to avoid sensitive wetlands. Even with the new easements, a significant number of wetland and stream crossings would have been required.

The need for new right-of-way, construction difficulties based on terrain and soil conditions, and the potential impacts to wetlands and streams, made this alternative environmentally and financially infeasible. Therefore, this alignment was also eliminated from further consideration.

3.3 ALTERNATIVE 3: BPA TRANSMISSION LINE ROUTE

The Supply System also requested that NWPL explore a route along the existing BPA 500-kV transmission line corridor east from the site to the area where the transmission lines turn southward near Tumwater (see Figures 1 and 2). This alignment was rejected because the steep terrain along the BPA line was not practicable for pipeline construction. Because of construction difficulties, this alternative was dropped before the western portion of the route alternative was developed.

3.4 ALTERNATIVE 4: 48-MILE PIPELINE ROUTE (PROPOSED ROUTE)

The natural gas pipeline alignment proposed for the Satsop Combustion Turbine Project will span approximately 48-miles from the Ignacio-to-Sumas pipeline near Vail to the Satsop site. Construction of this pipeline will meet the needs of the project and is financially feasible.

The proposed natural gas pipeline would be located adjacent to existing rights-of-way and other corridors for nearly 80% of the proposed route. The route was selected to minimize impacts to wetlands and other natural resources. Prior to selecting the route, design engineers met with project biologists to discuss natural resource issues, which included selecting a route that avoids wetlands and streams to the extent possible.

Although the routes for Alternatives 1, 2 and 4 are similar, the three alternatives differ in that, for the most part, Alternatives 1 and 2 follow existing roads and easements through low-lying areas, while Alternative 4 deviates from existing easements to follow ridges. Alternative 4 minimizes impacts to aquatic resources.