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Final
Environmental Impact Statement

BPA / Puget Power Northwest
Washington Transmission Project

BONNEVILLE
POWER ADMINISTRATION

Prepared by:
Bonneville Power Administration and
Whatcom County, Washington

August 1995

INSTRUCTIONS FOR READERS

The Final EIS for the BPA/Puget Power Northwest Washington Transmission Project consists of the previously circulated Supplemental Draft EIS, the enclosed Insert Sheets, copies of the submitted comments, and BPA's responses to the comments. The EIS has not been reprinted and circulated because the changes to the Supplemental DEIS are minor. The enclosed EIS-Inserts and the comments and responses, when merged with the Supplemental DEIS, form the Final EIS. Each insert is numbered and categorized below. Text from the Supplemental DEIS, both preceding and following an insert, is included on the insert to graphically illustrate where the new information has been added. The new language (on all inserts except the comment/response chapter) has been double underscored to accentuate it. Finally, inserts are printed on only one side for those who wish to insert them into the Supplemental DEIS.

Final EIS Cover: Replaces the cover of the Supplemental DEIS.

Abstract: The Final EIS abstract replaces the abstract contained in the Supplemental DEIS.

Final EIS Table of Contents: The Final EIS Table of Contents Insert explains how information from the Supplemental DEIS and the Final EIS-Inserts are integrated to form the Final EIS. The Final EIS Table of Contents should be inserted just ahead of the Table of Contents for the Supplemental DEIS.

Insert 1 - Puget Power's Needs: Puget Power further clarified its need in a Supplemental DEIS comment letter. Project needs are described in Chapter 1 of the Supplemental DEIS. The suggested language clarifying Puget Power's needs has been inserted in the middle of Chapter 1/Page 4, and due to its length flows onto Chapter 1/Page 5.

Insert 2: Corrected Reference: Insert 2 is placed within the Supplemental DEIS, Chapter 1/ Page 5 near the bottom of the page.

Insert 3 - Canadian Entitlement EIS Update: Negotiations between the U.S. and Canada regarding return of downstream power benefits have been widely reported in the media recently. An update of the discussion of the Canadian Entitlement EIS and the eastside transmission alternative of this EIS is provided in Insert 3. The insert is two pages long and begins in the middle of Chapter 1/ Page 8 of the Supplemental DEIS.

Insert 4 - Clarification: Insert 4 is placed within the Supplemental DEIS, Chapter 2/ Page 14, near the middle the page as shown on the insert.

Insert 5 - Clarification: Insert 5 is placed within the Supplemental DEIS, Chapter 2/ Page 15 near the middle of the page as shown on the insert.

Insert 6 - Clarification: Insert 6 is placed within the Supplemental DEIS, Chapter 2/ Page 38 near the end of the page as shown on the insert.

Insert 7 - Clarification: Insert 7 is placed within the Supplemental DEIS, Chapter 2/ Page 40 near the middle of the page as shown on the insert.

Insert 8 - Clarification: Insert 8 is placed within the Supplemental DEIS, Chapter 2/ Page 43 near the middle of the page as shown on the insert.

Insert 9 - Clarification: Insert 9 is placed within the Supplemental DEIS, Chapter 3/ Page 56 near the middle of the page as shown on the insert.

Insert 10 - Clarification: Insert 10 is placed within the Supplemental DEIS, Chapter 3/ Page 57 near the top of the page as shown on the insert.

Insert 11 - Clarification: Insert 11 is placed within the Supplemental DEIS, Chapter 3/ Page 58 near the top and middle of the page as shown on the insert.

Insert 12 - Clarification: Insert 12 is placed within the Supplemental DEIS, Chapter 4/ Page 66 throughout the page as shown on the insert.

Insert 13 - Clarification: Insert 13 is placed within the Supplemental DEIS, Chapter 4/ Page 135 near the middle and bottom of the page as shown on the insert.

Insert 14 - Clarification: Insert 14 is placed within the Supplemental DEIS, Chapter 4/ Page 138 near the middle of the page as shown on the insert.

Insert 15 - Clarification: Insert 15 is placed within the Supplemental DEIS, Chapter 4/ Page 139 near the middle of the page as shown on the insert.

Insert 16 - Clarification: Insert 16 is placed within the Supplemental DEIS, Chapter 4/ Page 140 near the bottom of the page as shown on the insert.

Insert 17 - Clarification: Insert 17 is placed within the Supplemental DEIS, Chapter 4/ Page 141 throughout the page as shown on the insert.

Insert 18 - Clarification: Insert 18 is placed within the Supplemental DEIS, Chapter 4/ Page 142 near the top and bottom of the page as shown on the insert.

Insert 19 - Comments and Responses: Insert 19 replaces Chapter 9 of the Supplemental DEIS entirely. Within Insert 19, Comments and Responses are organized by topic. New comments on the Supplemental DEIS are shown first with a vertical line in the left margin of the page. Comments on the Draft EIS, which were previously responded to in Chapter 9 of the

Supplemental DEIS, follow new comments. The comment coding system used is explained on the first page of Insert 19.

Insert 20 - Comment Letters: Insert 20 contains copies of public comment letters received. Letters received in response to the Supplemental DEIS occur first (Code: NWTP-04). Comments on the Draft EIS are next (Code: NWTP-03), followed by EIS Scoping Letters (Code: NWTP-01).

Insert 21 - Updated BPA EMF Guidelines: Insert 21 provides an updated version of BPA's recently updated Guidelines on Electric and Magnetic Fields. The insert should be placed at the end of Appendix C of the Supplemental DEIS.

Insert 22 - Puget Sound Power & Light EMF Policy: Insert 22 is a copy of Puget Sound Power & Light's policy on EMF. The insert should be placed following Insert 21 at the end of Appendix C of the Supplemental DEIS.

Insert 23 - Threatened and Endangered Species Consultation Updates: Insert 23 is a copy of the September 23, 1993 letter from the U.S. Fish and Wildlife Service (USFWS) indicating agreement with BPA's Biological Assessment. Also included in the insert is a copy of a letter from BPA to the USFWS requesting an update on listed species in the project area and a July 13, 1995 letter from USFWS with an updated list of threatened and endangered species that might occur in the project area. The insert should be placed at the end of Appendix D of the Supplemental DEIS.

Final EIS - Inserts

BPA / Puget Power Northwest Washington Transmission Project

Prepared by:
Bonneville Power Administration and
Whatcom County, Washington

August 1995

FINAL ENVIRONMENTAL IMPACT STATEMENT (EIS)

Responsible Agencies: U.S. Department of Energy, Bonneville Power Administration (BPA); Whatcom County, State of Washington.

Title of Proposed Action: BPA/Puget Power Northwest Washington Transmission Project.

States Involved: Washington.

Abstract: Bonneville Power Administration (BPA) and Puget Sound Power & Light Company (Puget Power) propose to upgrade the existing high-voltage transmission system in the Whatcom and Skagit counties area between the towns of Custer and Sedro Woolley, including some areas within the City of Bellingham, starting in 1995. The upgrades of the interconnected 230,000-volt (230-kV) and 115-kV systems are needed to increase the transmission capacity on a nearby U.S.-Canada 500-kV intertie by about 850 megawatts (MW). BPA and Puget Power would equally share the 850 MW of increased transfer capacity. An existing BPA 230-kV single-circuit, wood-pole H-frame transmission line would be upgraded to a 230-kV lattice-steel double-circuit line.

A Draft Environmental Impact Statement (DEIS) for the project was issued in November 1993, followed by a 45-day public comment period. Several open houses and public meetings were held in December 1993. Public response to the DEIS included the identification of several new transmission route alternatives in the Lake Whatcom area. In 1994, studies by BPA and Puget Power engineers showed that recent improvements to Puget Power's 115-kV system, and the addition of local generation had lessened local reliability problems. Also in 1994, BPA reorganized to respond to increased competition in the utility industry and to manage costs better. All BPA projects, including this one, were reevaluated with this goal in mind. Despite these new conditions, both BPA and Puget Power agreed that benefits of obtaining increased transfer capacity and improved system integrity warranted the financial expenditures.

Given the changes in need, BPA issued a Supplemental DEIS in April 1995 to provide a second public review-and-comment period. Rebuilding an existing 230-kV line to a double-circuit 230-kV transmission line (Option 1) was identified in the Supplemental DEIS as the Proposed Action. The Supplemental DEIS also examined in detail a North Shore Road alternative which was proposed by some members of the public. Public comments on the EIS were listed and responded to in the Supplemental DEIS.

In May 1995, a second set of open houses and public meetings was held to review the Supplemental DEIS. Comments expressing favor or opposition to the various alternatives were predominant. Public comments on the Supplemental DEIS did not reveal new alternatives not previously considered, or reveal topics requiring additional environmental analysis. Electromagnetic field (EMF) effects raised as an issue in the DEIS continued to be an issue of public concern in the meetings. The need for the project was questioned by several people.

Comments on the Supplemental DEIS required only minor changes to the document. A few factual changes were requested by Puget Power on their 115-kV transmission line proposal.

BPA needed to provide updated information on the BPA/Canada Entitlement Return EIS and Endangered Species Act consultation. Due to the minor nature of corrections to the document, BPA decided to finalize the EIS by showing changes on insert sheets and attaching them to the Supplemental DEIS. The Final EIS insert sheets, public comments and responses, and copies of the comment letters will be circulated to those who received the Supplemental DEIS. These changes together with the Supplemental DEIS form the Final EIS.

The EIS has identified impacts that would generally be classified as low to moderate and localized. Effects on soils and water resources in sensitive areas (e.g., near Lake Whatcom) would be low to moderate; there would be either increases, decreases or no change in magnetic fields, depending on the design and location option chosen; noise levels would remain at existing levels; and land use and property value impacts would be either short term or low. Threatened and endangered species would not be adversely affected, and all proposed actions in wetlands would be covered by a Corps of Engineers Nationwide Permit. Visual impacts would be low to moderate; and socioeconomic impacts would be low to moderate from additional clearing and potential removal of up to four homes. No cultural resources listed on the National Register of Historic Places would be affected. There would be low to moderate effects on cultural resources.

The proposed action would allow BPA to use its part of the transmission capability increase to displace other generating resources in the U.S. when stored energy is returned from Canada. It would facilitate short- and long-term power purchases from Canada, reducing BPA's need either to supply power from its own resources or to purchase power from other suppliers. Any displacement of thermal generators would reduce adverse impacts on the environment, including air and water emissions. BPA's ability to market power during increased water releases to aid fish migration would be improved. Puget Power would also be able to enter into short- and long-term sales and transfers with Canada, and thus delay the need to acquire additional thermal resources or purchase additional power from BPA or other suppliers to meet future needs.

The Final EIS-Inserts are being mailed to about 120 agencies, groups, and individuals. To request additional copies of either the Supplemental DEIS or the Final EIS-Inserts, please contact: Public Involvement Manager, P.O. Box 12999, Portland, OR 97212. For additional information on the EIS please contact: Ken Barnhart, Project Environmental Coordinator, P.O. Box 3621, Portland, OR 97208. Copies may also be obtained by calling BPA's document request line: 1-800-622-4520.

FINAL ENVIRONMENTAL IMPACT STATEMENT
BPA/PUGET POWER
NORTHWEST WASHINGTON TRANSMISSION PROJECT

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*** Changes to the Supplemental DEIS are minor and are made with insert sheets. Refer to the Summary of the Supplemental DEIS and/or the Supplemental DEIS circulated previously.**

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2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

B. NEED

BPA (beginning in 1996) and Puget Power (beginning in 1995) propose to upgrade the existing electric power transmission system in the Whatcom and Skagit County area.

- Puget Power's part of the project is mainly in Bellingham, Washington, and within Whatcom County, with minor substation work in Skagit County.
- BPA's part of the project extends from Sedro Woolley in Skagit County, into Whatcom County, by Lake Whatcom and Bellingham, continuing towards Custer, Washington.

The project aims to increase the capacity of the U.S. - Canada Intertie transmission line. It would increase the north-to-south RTC and SCR by 850 MW. This increased capacity will enable the following types of power transactions:

- additional Federal access to return stored energy (see below) from Canada, particularly in the late summer and fall months;
- added capacity for anticipated increases in Northern Intertie power transactions for Pacific Northwest utilities;
- increased flexibility in operation of the hydroelectric system and of ***thermal resources*** within Whatcom and Skagit counties;
- increased access to Canadian resources that would meet the objectives of BPA and Puget Power strategic business plans.

Puget Power's Needs

- **Access to Canadian Energy Resources. The project will provide Puget Power greater flexibility to respond to a variety of needs in competitive markets. The opening of a wholesale generation market has led to increased price competition. The project will provide Puget Power with direct access to Canadian energy resources. Direct access to these resources will provide Puget Power with greater flexibility to realize competitive opportunities for the benefit of its customers. Some of these competitive opportunities are anticipated in the short term (i.e., energy acquisitions on the spot market that displace more expensive resources) while other opportunities are anticipated for long-term resource needs (i.e., firm acquisitions).**

Local Reliability. The SDEIS states that the project will increase the capability of the local transmission system to move power through and out of the local area, and Puget Power's 115-kV system will be better protected against thermal overloads.

Insert 1 - Puget Power's Needs
Placement: Middle of page - SDEIS Chapter 1/ 4

Puget Power has, over the last few years, made improvements to the local transmission system, and during this time approximately 655 MW of new generation (cogeneration facilities) have come on-line. These changes have altered the local transmission system and have, as the SDEIS notes, to some extent "diminished" the degree to which this project is needed to address local transmission deficiencies. However, the local reliability benefits afforded by the project are still important and needed.

The project will add a second 230-kV transmission line from the BPA Bellingham Substation to the Puget Power Sedro Woolley Substation. This will prevent, under certain conditions, overloading of Puget Power's 115-kV lines. Puget Power's Sedro Woolley-to-Bellingham #3 and #4 115-kV transmission lines are electrically parallel to BPA's existing Bellingham-to-Sedro Woolley 230-kV line. Loss of the existing BPA 230-kV line causes more power to flow on the Puget Power 115-kV lines, resulting in overloads and outages. A recent outage underscores that when this occurs, potentially dangerous overloads result and many Puget Power customers can be affected.

These results are discussed in detail below.

The project would increase the ability to store and return energy with Canada. Eighty-five percent of BPA's ***firm*** electricity comes from generators in dams on the rivers of the Pacific Northwest. The flow of water (and therefore the amount of electricity which can be generated from it) varies naturally with the seasons. BPA can distribute the available power supply in two ways. During times of *low* river flow (late summer, fall, and winter), the agency can buy power at market rates from other sources such as California thermal generating plants. In times of ***high*** river flow (early spring), the agency can generate extra power and send it to Canada over the Northern Intertie rather than sell it at lower prices. Canada uses the transferred power to serve its load, saving water behind its dams for generation in later summer, fall, and winter, when it returns the "stored" energy to the U.S.[2] The stored energy is returned over the Northern Intertie.

The project would respond to anticipated increases in Northern Intertie usage. In 1989/1990, BPA and Puget Power undertook joint technical studies on the local power network/Northern Intertie system interactions. They found that more transmission capacity was required to import more power from Canadian utilities. Subsequent studies in 1994 confirmed the need for increased access (they also revealed that the local reliability problem had substantially diminished as a result of other actions).

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[2] See Appendix A, Power Marketing, for more information on energy storage.

This project would allow for increased Canada-Pacific Northwest sales and exchanges of power. BPA and Pacific Northwest utilities could then supply power to increasing loads, defer the need to build new energy resources in the region, and thus maximize use of British Columbia Hydro and Power Authority (B.C. Hydro) and BPA transmission systems.

In 1990, Puget Power's Consumer Panels also identified the need to secure the ability to contract directly with B.C. Hydro or its affiliates for future power purchases. This was identified as a priority in Puget Power's 1992-1993 Integrated Resource Plan on file with the Washington Utilities and Transportation Commission.

The project would allow for increased flexibility in operation of the hydro-electric system. Much of the north-to-south capacity on the Northern Intertie is used for ***non-firm power*** commitments, which include stored energy returns and sales of Canadian power to U.S. utilities. Sometimes, when BPA needs stored energy returned, the Northern Intertie does not have enough capacity and B.C. Hydro sales take priority. The water stored behind Canadian dams must either be spilled (sent over or around dams with no energy generated and a consequent loss of economic value) or saved for a time when there is more capacity available on the Northern Intertie. In the meantime, BPA must purchase power at the market rate from elsewhere--often at higher cost.

With increased Northern Intertie capacity, BPA could increase both its firm and non-firm power transfers. It could therefore better manage the return of stored energy, increasing the flexibility for operating the hydroelectric system. Resources could be used more efficiently and overall costs would be reduced. Increased capacity would provide regional benefits of cost-efficient power and more stable rates.

This increased flexibility would assist BPA in meeting its responsibilities to assist in fish migration by increasing springtime flows in the Columbia River and still market the energy produced or store water in Canada for later return.

The project would meet strategic business objectives. The utility business is changing rapidly in response to the Energy Policy Act of 1992. Utilities now compete openly with other utilities to serve customer groups. This competition is expected to increase in future years. Both BPA and Puget Power expect to use the added capacity from this project to fulfill strategic business objectives. Both entities expect economically beneficial contractual arrangements with Canada. BPA would be able to sell power that otherwise might not be salable. Puget Power expects to acquire power from Canada at lower rates than are available elsewhere. These outcomes would be beneficial to both BPA and Puget Power ratepayers.

The project would provide benefits to improve local reliability. The DEIS anticipated that local reliability would play a major role in the need for this project. Since

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Until recently the preferred alternative included purchase of a portion of the entitlement capacity by the U.S. and delivery of the remainder to Canada or to points on the BPA system. .In negotiations with Canada, up to 650 MW of the Entitlement would have been delivered via the Northern Intertie at Blaine. During negotiations, the value of power that the U.S. was to purchase decreased dramatically. This decrease in value was due to inexpensive natural gas prices, more efficient combustion turbines, power surpluses on the West Coast, changes in river operations for fish, and more competition between electrical power brokers and marketers. As a result, from a business perspective BPA could not agree to the nonbinding memorandum of understanding with BC/POWEREX that was the basis for the agreement. Consequently, BPA may be required to build a new powerline from Grand Coulee or Chief Joseph Dams to the U.S./Canadian border near Oliver, B.C. However, it is the U.S. Entity's intention to attempt to work out another agreement with Canada so that a new transmission line to Canada would not need to be built.

The prospect of a new interconnection with Canada near Oliver has been noted by residents of Whatcom County. This option has been suggested as impacting less-developed areas and thus more desirable. The need for the two projects are different and for the following reasons would not solve the needs identified for the Northwest Washington Transmission Project:

- No decisions have been made on the feasibility of a new transmission interconnection with Canada in Central/Eastern Washington.
- To provide sufficient transmission capacity in Washington. A new 129-145 km (80-90 mile) line would have to be built from Grand Coulee or Chief Joseph dams to the U.S./Canadian border.
- The major load center is west of the Cascade Mountains. An eastern Cascade transmission project would not satisfy power requirements west of the Cascades. With additional transmission capacity to Canada on the east side of the Cascades, there eventually will not be enough east-west transmission capacity across the Cascades. The need for a new 160 km (100 mile) line across the Cascade Mountains would be accelerated.
- The transmission system in Canada would also need to be upgraded for any new east side interconnection with the U.S. Canada has not made any commitments to any upgrades on their eastern systems that would satisfy any U.S. needs.
- An east side interconnection with Canada would cost substantially more than the NW Washington Transmission Project.
- The timing of the projects is different. The NW Washington Transmission Project is scheduled to be complete in 1997. An east side intertie could not be completed before

Insert 3 - Canadian Entitlement
Placement: Middle of page - SDEIS Chapter 1/8

- 2003. From a business perspective, the benefits expected to result from increased transmission capacity provided by the NW Washington Transmission Project would be delayed many years.
- An eastern intertie with Canada would not alleviate the need to get electrical generation in Whatcom County out of the local area during non-peak load conditions.
- An eastern intertie would not upgrade the reliability of the local Whatcom County transmission grid.
- If the NW Washington Transmission Project is not built, another utility may propose a similar project such as Puget Power's original proposed 230-kV Intertie with B.C. Hydro as described in the EIS. Puget Power's original proposal is on hold and could be reactivated.

Therefore, the Columbia River Treaty transmission line to Oliver is not an alternative that meets the needs of the NW Washington Transmission Project. Those decisions and their associated impacts are addressed separately in the DEIS mentioned above.

3. SYSTEM OPERATION REVIEW EIS AND INTERIM FLOW SUPPLEMENTAL EIS

Two environmental reviews regarding power and other uses of the Columbia and Snake rivers are underway or just completed. These EISs--the System Operation Review (SOR) and the Interim Columbia and Snake Rivers Flow Improvement Measures for Salmon Supplemental EIS (Interim Flow SEIS)--address the operation of Federal hydro projects on the Columbia and Snake rivers to balance the operation of the projects among river users. The Interim Flow SEIS and a draft SOR EIS have been completed; the final SOR EIS is now being prepared. The SOR process, which involves BPA, the U.S. Army Corps of Engineers, and the Bureau of Reclamation as cooperating agencies, will provide long-term system operation guidelines that consider the needs of all river users. The Interim Flow SEIS addresses near-term Federal hydro operations in response to the listings of certain salmon runs as ***threatened*** or ***endangered*** species under the Endangered Species Act, pending the development of longer-term plans of action.

Operation of Federal hydro resources in relation to the use of the Northern Intertie Upgrade will not deviate from the constraints to be established by the SOR or from interim operations established in the Interim Flow SEIS.

E. DECISIONS TO BE MADE

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B. EVALUATING ALTERNATIVES

Before comparing the alternatives, it is useful to know something about how a project develops, and what might be involved in construction actions.

1. DEVELOPMENT OF A PROJECT

A transmission system expansion project is developed in several stages:

- First, a need is identified. The underlying reason for a transmission system expansion can vary considerably. Transmission facilities may be needed to enable power exchanges, to make power acquisitions or sales, to serve ***load***, to integrate new energy resources, or to correct an unreliable operating condition. In this case, Puget Power desires direct access to Canadian energy resources and BPA desires to expand its business relationships with B.C. Hydro. The limited transfer capacity of the Northern Intertie restricts their abilities to do so.[4]
- BPA transmission system planners maintain a computer model which represents all existing generation resources, transmission lines, and both historic and forecast loading levels for the interconnected transmission grid. Using this model, the planners can hypothetically "add" a new transmission line or install electrical devices within sub- stations, and then review how well these system changes would satisfy a need. Many such hypothetical system changes are studied to identify how a given need might be best solved. System planners determined ways to increase the capacity of the Northern Intertie.
- Engineers and environmental specialists further refine the solutions identified by system planners. They identify possible places to locate new facilities and/or rebuild existing transmission facilities.
- A project team seeks ideas and information from landowners, concerned citizens, and government bodies in the project area in order to define the scope of an environmental study on the project and to define the issues. (Public involvement extends throughout the life of the project.)
- A team of specialists representing a variety of disciplines researches what is known about each resource in the study area, checks on field conditions, and participates in a comprehensive evaluation of impacts to determine, if possible, ***environmentally preferred*** design options and location choices. The specialists identify mitigation measures to lessen or avoid impacts. They consider all public ideas and comments in the course of their evaluation.

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[4] The need, as described in the DEIS, also included local reliability as a major concern. This concern has diminished, but the need to increase access to Canadian power over the Intertie remains. See Chapter 1.

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- A draft environmental impact statement is published, detailing their findings. It is circulated for public review and comment, then revised into a final EIS, which is also published. For some projects, such as this one, environmental impact statements are required by both Federal and State laws. When this occurs, it is best to prepare a joint Federal and State environmental impact statement to avoid unnecessary duplication and cost.
- If significant changes occur in a project after publication of a draft environmental impact statement, and these changes either alter the environmental impact conclusions or necessitate additional opportunities for public comment, agencies may issue a supplemental DEIS, as here, followed after review by the Final EIS.
- A ***Record of Decision (ROD)*** documents the final decision. A ROD is a Federal requirement. Local decisionmaking is accomplished, and may include a hearings process.
- The decision is implemented.

2. TAKING ACTION (CONSTRUCTION)

The proposed alternative (and several of the alternatives eliminated from detailed discussion) would involve construction of new transmission facilities. Below is a brief summary of what this means. More detail on construction actions is found at the beginning of Chapter 4, Environmental Consequences.

When transmission facilities are built, construction activities may have both negative and positive effects on the environment. For instance, clearing in a forested area would remove some trees, but the opening might provide more forage for some wildlife.

A specific sequence of actions occurs: one for removing an existing line; another for re-building or replacing facilities on existing ***right-of-way***; a third for building on a new right-of-way (Alternative H1 or the North Shore Road Alternative in this Supplemental DEIS). These are outlined below, to help the reader review the comparison of alternatives, which follows.

- **For taking down (removing) a wood pole line:**

  Vehicles are used to reach the existing structures, which are removed, except for below-ground braces and ***footings***. All above-ground and most below-ground wood-pole components are removed; ***conductors*** (wires) are rewound or cut up and removed. Parts are scrapped or salvaged for reuse. In areas with difficult accessibility, untreated wood parts may be cut up and left to decay at the site.

- **For rebuilding/replacing on existing right-of-way:**

  Existing ***easements*** are reviewed to determine whether they are adequate; additional rights are acquired, as needed; existing ***access roads*** are assessed and upgraded, if

PUGET POWER'S PART OF THE PROJECT

Project mitigating measures shown below would be carried out should the construction activities evaluated occur:

- The contractor would be directed to keep the construction area reasonably clean, to maintain all ditches and drainages free of debris, and to employ erosion control measures, per Whatcom County and City of Bellingham standards.
- For the existing 115-kV line to be rebuilt
  - In localized potential erosion areas requiring regrading, prudent erosion control measures would be used. These could include the use of straw bales to intercept and direct surface water flow and reseeding the area with an erosion control seed mix; or the requirement that construction be done during the dry season of the year.
  - Site-specific erosion control measures would be developed as part of the construction specifications.
- For the Pipeline Alternative
  - In the forested portion of wetlands, to reduce impacts from clearing, equipment would be used which exerts the minimum amount of ground pressure, and lost vegetation would be replaced with wetland species.
  - The existing Trans Mountain right-of-way would be used as road for access to pole locations.
  - Wetlands permanently lost would be replaced.
  - Clearing may be done by hand, with trees and debris yarded off and mulched in areas of steep slope (>40%).
  - Revegetation of the cleared area would include stabilizing the slope to prevent slumping. Preventive measures may include water bars or flow interceptors. The area would be seeded with an erosion control mix. Hydromulching with wood fiber could be used to provide further stabilization on steep slopes.

proposed corridor were made by Puget Power, and EIS scoping meetings were conducted by the OFP in Lynden and Bellingham (January 1990).

As Puget Power's proposed Intertie project would have involved establishing about 37 km (23 mi.) of new transmission corridor, much public interest and opposition ensued. There was also additional interest in the alternative of rebuilding the existing BPA transmission line. In November 1990, voters in Whatcom County amended the County planning ordinance to restrict the construction of transmission facilities over 115 kV, except on land where conditional use permits have already been granted or in areas classified as industrial. BPA and Puget Power then jointly conducted technical studies of the transmission system; these studies showed that an electrical plan focusing on rebuilding existing BPA and Puget facilities would meet the combined needs for increasing the transfer capability of the Intertie and solving their identified local reliability problems. Both agreed to pursue such a plan jointly; that plan has evolved into the present proposed project. Subsequently, BPA and OFP issued a notice indicating the OFP suspension of Puget Power's Presidential Permit application (at Puget Power's request) and BPA's intent to prepare an EIS on the resulting BPA/Puget Power proposed project.

Because of the joint technical studies recommending other electrical plans of service, the restrictive zoning in Whatcom County (which encourages the use of existing transmission corridors), and OFP's suspension of the Presidential Permit process, the Puget Power proposal was not examined in detail in this Supplemental DEIS.

2. E4A PLAN (PUGET POWER)

This plan was identified in joint BPA/Puget Power system planning studies. It would focus on construction of 115-kV lines only (would not involve construction of any higher-voltage lines). It would primarily involve construction on Puget Power's system; improvements would be made to BPA's Custer Substation. Puget Power would undertake the following actions:

- adding a second 230/115-kV transformer at its Portal Way Substation;
- building a 115-kV line from Portal Way Substation to Terrell Substation and Bellingham Substation; and
- rebuilding an existing 115-kV line between Puget Power's Bellingham and Sedro Woolley Substations (see Figure 13).

The joint BPA/Puget Power technical study included this plan; however, this is considered as more of a short-term solution and is not equal to the 230-kV plans. Compared to the preferred plan, E4A would be electrically inferior and would not fully meet the stated need, for several reasons.

- E4A would not *unload* parallel lines as well as the proposed 230-kV plan. One objective of the proposed project is to reduce loading on various components of the existing system. The use of higher-voltage lines can reduce loading on parallel lower-

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effective conservation. Therefore, conservation is not a reasonable alternative to this Project and is eliminated from detailed study.

5. UNDERGROUNDING

Burying transmission lines underground is technically feasible, and has been done in some areas. However, undergrounding of a 500-kV line means a substantial increase in costs: 5 to 12 times as much as overhead construction, or $3,200,000 to $7,500,000 per km ($5,000,000 to $12,000,000 per mi.) for underground construction, compared to about $625,000 per km ($1,000,000 per mi.) for overhead. For 230-kV double-circuit construction, the cost would be $2,100,000 to $5,000,000 per km ($3,300,000 to $5,000,000 per mi.) for underground, compared to about $410,000 per km ($650,000 per mi.) for overhead. Underground 115-kV installations are also many times more expensive than overhead installations. High costs may be ascribed to several sources: substation-like facilities are needed at either end of the underground portion where the conductors would go from overhead to underground; extensive trenching is required; and the materials used for the cables are expensive. In addition, the cables could require *dielectric* fluid for insulation. The accidental release of these fluids into the environment has effects and cleanup requirements very similar to those for oil spills. Special designs and care would be required in stream and wetland crossings.

Underground transmission facilities present an increased potential risk for extended outage times. With an overhead facility, it is usually relatively easy to spot where the outage problem is and fix the problem. With underground cables, problems causing outages cannot be as easily located and fixed. As a result it usually takes much longer (days to weeks) to re-energize underground facilities. This is especially crucial with main intertie lines servicing large areas--lines such as those for this project.

For these reasons, BPA will not consider undergrounding the transmission facilities associated with this project. Furthermore, Puget Power, as a Public Service Corporation, does not provide underground transmission as a service and has no tariff applicable to underground 115-kV transmission.

6. ROUTING THROUGH DEPARTMENT OF NATURAL RESOURCES (DNR) LANDS

Both individuals and the Families Against Increased Risk (FAIR) group proposed locating the line farther to the east along Lake Whatcom, "up the hill" on State Department of Natural Resources (DNR) land. It was suggested that BPA could improve its choices by moving the new line well away from the residences, particularly in Segment E where the lines run close to homes. An alternative would start up the shoulder of Squalicum Mountain just northwest of Agate Bay, and run about 0.8 km (about 0.5 mi.) farther up Stewart Mountain to a point above Smith Creek.

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Zoning along the "pipeline alternative" is *Residential Single*, followed by *Industrial* within the City limits. Once it reaches the City/County boundary, the transmission line runs next to the *General Manufacturing* and *Urban Residential County* Zones.

2. SOILS [Puget Power]

Landforms of the area are the result of several Ice-Age glaciations, the action of streams and rivers, and wind deposition. Elevations along Puget Power's segment of the project range from about 18 to 61 m (60 to 200 ft.). Dominant soils in the vicinity of the existing transmission line have formed in volcanic ash and loess (silty material deposited by wind) laid over materials deposited by glacial ice in seawater (***glaciomarine drift***) and uplands (glacial drift). These soils are nearly level to very steep and moderately well drained to poorly drained. Other soils in the vicinity of the existing transmission line have devel- oped in a mix of volcanic ash, loess, and materials deposited within glacial lakes. These soils occur in depressions on terraces and are often poorly drained (USDA-SCS, 1992). In general, soils along Puget Power's segment of the project are suited for the proposed use. Soil limita- tions include seasonal soil wetness, which increases the soil's susceptibility to rutting and excessive muddiness, and a steep slope near Squalicum Creek.

3. VEGETATION [Puget Power]

Some of Puget Power's proposed activities would occur within the Bellingham city limits. Human activities such as industrial/commercial and residential development, and public rights-of-way dominate the area. Typically, these areas are fenced with structures, landscaped, and maintained as lawns. In all areas used for intensive human purposes, there is a tendency for "weedy" species such as thistle, chickweed, mustards, tansy ragwort, common mullein, fireweed, and Himalayan blackberry to invade. Lawns and ornamental trees and shrubs are also well-established in landscape plans and residential areas. Continuing beyond the Bellingham city limits, industrial, commercial, and residential developments occur less frequently, and are interspersed with open woodlands and wetland plant communities (forested, scrub-shrub, ***emergent***, and ***pasture***).

Woodland plant communities are dominated by several tree species, including Douglas fir, big-leafed maple, and western red cedar; understory shrubs and ***forbs*** include vine maple, red elderberry, sword fern, bracken fern, and piggy-back plant. Forested wetland plant communities are usually dominated by red alder, black cottonwood, western red cedar, paper birch, salmonberry, lady fern, and skunk cabbage. Douglas spiraea and dwarf birch often dominate scrub-shrub wetlands, while reed canary grass, small-fruit bulrush, sedges, and cattails commonly occur in emergent wetlands. Pasture lands are typically dominated by bent grass, wheat grass, orchard grass, rye grass, clover, plantain, and meadow buttercup.

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Placement: Middle of page - SDEIS Chapter 3/56

4. WATER RESOURCES AND WETLANDS [Puget Power]

The BPA-Bellingham #2 115-kV transmission line spans Fever Creek twice. (See Figure 16.) A wetland is mapped to the south of the Sunset Drive intersection. Near the intersection of East Bakerview Road and the Dewey Road, the transmission line right-of-way crosses Toad Creek. No poles are located in streams or wetlands for the existing BPA-Bellingham #2 line.

The City of Bellingham has mapped a wetland just north of Sunset Drive along the Trans Mountain Oil Pipeline right-of-way. Two National Wetland Inventory (NWI) wetlands extend from the base of a steep slope along the Trans Mountain Oil Pipeline to and adjacent with the abandoned Milwaukee Road grade. The NWI identifies wetlands in the area adjacent to but below the railroad grade.

5. FISH AND WILDLIFE [Puget Power]

Fisheries resources in the Puget Power project area are largely limited to Toad Creek and an unnamed tributary of Squalicum Creek. The Washington Department of Wildlife has identified critical spawning habitats located in Toad Creek. Both Toad Creek and the unnamed tributary flow directly into Squalicum Creek about 0.8 km (0.5 mi.) from the proposed project. Fever Creek is also located in the proposed project study area, although its significance for fisheries is limited.

Wildlife species located in the proposed project study area include those species which typically do well in close proximity to humans. Wildlife species associated with forest habitats include raccoon, opossum, striped skunk, Douglas' squirrel, northern flying squirrel, Townsend's chipmunk, ravens, jays, woodpeckers, towhees, finches, robins, black-headed grosbeaks, juncos, bushtits, and starlings. Forest amphibians and reptiles include rough-skinned newts, salamanders, western toads, and Pacific treefrogs. Some of the wildlife attracted to wetland habitats include raccoon, ducks, herons, snipe, sandpipers, plovers, killdeer, swallows, common yellowthroat, painted turtle, garter snake, newts, salamanders, toads, and several species of frogs. Areas that are overgrown with grasses, herbs, shrubs, and vines attract wildlife species such as the red fox, striped skunk, cottontail rabbit, deer mouse, California quail, red-tailed hawk, crows, meadowlarks, goldfinches, swallows, blackbirds, brown-headed cowbirds, sparrows, and starlings.

6. AGRICULTURE [Puget Power]

Prime farmland, defined according to the criteria of the Farmland Protection Policy Act (FPPA) (7 U.S.C. 4201 *et. seq.*), was identified from the USDA-SCS soil surveys of the Whatcom County and Skagit County areas. Lands currently in agricultural use were identified and mapped from information interpreted from May 1992 aerial photography and field

verification. Current agricultural use in the vicinity of the BPA-Bellingham #2 Line is limited to areas of small pasture in the Puget Power project area.

7. VISUAL RESOURCES [Puget Power]

Much of the visual environment of the existing 6.9-km (4.3-mi.) 115-kV transmission line corridor between the Puget Power and BPA Bellingham substations is characterized by residential development and undeveloped rural areas. Residential development is concentrated along the segment of the line from the Puget Power Bellingham Substation to the end of the improved portion of St. Clair Street and along Sunset Drive between St. Clair Street and the Dewey Road. The remaining segments of the transmission corridor are predominately undeveloped and rural in nature, with only occasional residential structures located near the transmission right-of-way.

Views within many of the residential areas are dominated by housing structures and the linear features of the existing infrastructure, including paved roads and electrical and telephone utility service structures. The BPA-Bellingham #2 115-kV transmission line has been a part of the visual landscape since 1958.

Rural undeveloped property characterizes the visual elements of the alternative (pipeline) route. However, the pipeline alternative is located on an existing utility corridor.

8. RECREATION [Puget Power]

Recreation activities are generally limited to hiking, biking, and so on in the vicinity of St. Clair Street, where former railroad rights-of-way are in natural trail use. No other areas of notable recreation activity were identified.

9. CULTURAL RESOURCES [Puget Power]

As with the BPA portion of the project, the focus of background research was a compilation of previously recorded sites. Generally, resources in the potentially affected area comprise abandoned railroad rights-of-way and the communities of Dewey and Van Wyck. Also, at its southern end, the existing route of Puget Power's Bellingham #2 line passes through several historic additions to the City of Bellingham. To date, no historic properties within these additions or within 0.8 km (0.5 mi.) of the line have been nominated, or determined to be eligible for nomination to the National Register of Historic Places, State Register, or Whatcom County Register.

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capital investment in the neighborhood of $24,000,000 (including substation work but not Puget Power's part of the project) would be committed in developing the proposed transmission facilities.

2. PUGET POWER PART OF THE PROJECT

CONSTRUCTION TECHNIQUES

County roads, city streets, unimproved street right-of-ways, and alleyways would be used to gain access to the pole locations to rebuild the BPA Bellingham #2 line and to construct new line along the pipeline alternative. No additonal access roads are needed. Where the unimproved street rights-of-way have been encroached upon by lawns, gardens, and/or fences, Puget Power would discuss access to the pole locations with the City of Bellingham and the adjacent landowners.

Existing wood poles, insulators and conductors would be removed. This removal and construction of the new transmission lines would use conventional transmission-line construction methods. Line trucks and mobile cranes would be used to remove existing poles and set the new poles. New pole holes would be dug with either a power auger or backhoe. Drainage improvements and clearing of vegetation might also be required. Where necessary, erosion control plans would be developed before any construction activities would take place.

MAINTENANCE PRACTICES

Consistent with past practices for the existing transmission line, Puget Power must control the vegetation within its rights-of-way in order to reduce the potential for outages (due to interference with the conductors) and safeguard the public safety. Puget Power's vegetation management program is designed to control incompatible vegetation on a 5-year maintenance cycle. Vegetation along the BPA-Bellingham #2 line has been managed to control tree growth, to promote low-growing plant communities which are compatible with overhead power lines, and to prevent establishment of tree seedlings through competition.

Puget Power uses a systematic approach to vegetation management for transmission lines next to public rights-of-way. Proper pruning, selective removal of trees, and discriminating use of growth regulators and herbicides are among the methods employed. Growth regulators and herbicides are used in accordance with the City of Bellingham and Whatcom County approvals.

Routine vegetation maintenance activities can occur throughout the year. Emergency maintenance would occur on an as-needed basis. With the continuation of the vegetation management program which successfully controls undesirable vegetation, the need for emergency maintenance for tree-related incidents would be minimal.

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Table 15d: Numbers of Homes Expected to Experience an Increase or Decrease of More than 1 mG in Segment E (including the North Shore Road Alternative, east and west sides of the corridor; Option 4)

	Option 4 Increase	Option 4 Decrease	North Shore Alternative Increase*	North Shore Alternative Decrease
West Side	0	8	0	8
East Side	0	0	3	0

* One house would also be removed.

E. RESOURCE IMPACTS AND MITIGATION ACTION: PUGET POWER PART OF THE PROJECT

1. LAND USE AND ZONING [Puget Power]

EXISTING 115-KV TRANSMISSION LINE AND SUBSTATION

The BPA-Bellingham #2 transmission line occupies an existing utility corridor, extending from the Puget Power Bellingham Substation to the BPA Bellingham Substation. This transmission line has been in place since 1958. An option under consideration is to rebuild the transmission line within the same alignment, with poles replaced at or near the same location as existing poles.

Puget Power's existing Bellingham Substation has been serving the Bellingham area since 1949. This substation is currently a delivery point of bulk power which is then distributed to other neighborhood substations serving the greater Bellingham area.

The proposed transmission line rebuild (and route alternative) and the substation work present no change in land use, and thus would have no land use impact other than possible impacts construction impacts which would be temporary.

Comprehensive Plan Designations and Zoning

The Puget Power Bellingham Substation and the BPA Bellingham #2 115-kV transmission line are within the Roosevelt and/or Mount Baker planning area of the Bellingham Comprehensive Plan. The proposed transmission line rebuild and substation work is consistent with the Comprehensive Plan and implementing development regulations. Within the County, the transmission line passes through the urban fringe area of the Whatcom County Comprehensive Plan. The zoning for the substation and transmission lines is described in Table 16.

Existing Conditions

The pipeline alternative begins at the intersection of Sunset Drive and the unimproved St. Clair Street right-of-way where the transmission line would parallel the west side of the Trans Mountain Oil Pipeline corridor north to the abandoned Chicago, Milwaukee, St. Clair, & Pacific Railroad (Milwaukee Road) right-of-way. The transmission line would continue within the Milwaukee Road right-of-way until it rejoins the existing BPA-Bellingham #2 transmission line at Dewey Road.

2. GEOLOGY/SOILS [Puget Power]

The review of the map inventories and field verification yielded few geologic hazards. No seismic, volcanic, or coal mine hazard areas would affect or be affected by the project.

EXISTING 115-KV TRANSMISSION LINE REBUILD

Field observations did not reveal any erosion problems directly under or next to the BPA-Bellingham #2 115-kV transmission line. Rebuilding the existing line would not result in any significant impacxt to geology or soils. Pole replacement would not constitute enough land clearing to encounter or create erosion problems. Access to pole locations in localized potential erosion areas might require regrading the right-of-way and the use of prudent erosion control measures. These measures could include the use of straw bales to intercept and direct surface water flow and reseeding the area with an erosion control seed mix; or requiring construction during the dry seasons of the year. Work at the existing substations also is no expected to have significant impacts to soils or geology.

PIPELINE ALTERNATIVE

The City of Bellingham has mapped a potential landslide hazard area north of the intersection of St. Clair Street and Sunset Drive. The hillside (slope: about 80%) is a grassy slope in the Trans Mountain Oil Pipeline right-of-way and wooded area next to the proposed transmission line right-of-way. The existing pipeline right-of-way is maintained by Trans Mountain Oil. There are no apparent geologic failures or earth movements at the site.

Construction of the transmission line would require clearing about a 21-m-wide (70-ft.-wide) for about 1000 feet along the right-of-way. Clearing would be done by hand, with trees and debris yarded off and mulched. No access road would be required for clearing or constructing the transmission line at the hillside.

Revegetation of the cleared area would include stabilizing the slope to prevent slumping, particularly by drainages that carry water. Preventive measures may include water bars or flow interceptors to redirect the surface water flow. The area would be seeded with an erosion control mix either by broadcasting seed using a cyclone seeder or by hydroseeding. Hydromulching with wood fiber could be used to provide further stabilization on the steep

slope. Site-specific erosion control measures would be developed as part of the construction specifications to minimize erosion. No other sites within the pipeline right-of-way represent landslide or erosion hazards. Much of the abandoned railroad right-of-way has had access road improvements as part of the installation of a gas line by Cascade Natural Gas. Construction of the transmission line would use this access road and the railroad bed. Proposed erosion control and restoration actions will help to assure that significant impacts to soils or geology are avoided.

3. VEGETATION [Puget Power]

Rebuilding the existing line and substation work do not require clearing, and other than construction disturbances, would not impact vegetation. Impacts on vegetation for the pipeline alternative is generally low/moderate. Primary concerns are associated with clearing trees in forested wetland habitats. These plant communities are not easily replaced, once lost. Appropriate mitigation such as the creation/replacement of affected forested wetland acreage would moderate these potential considerable adverse effects. Potential impacts on scrub-shrub and emergent wetlands would be considered to be temporary, provided no new permanent access roads are built in wetland areas. Impacts on forest vege- tation are considered to be insignificant because those impacts would be restricted to a relatively small area, and because forest habitat in the general area is abundant. Impacts on pasture and other open-land plant communities are not expected to be significant because these plant communities are typically dominated by species which do well in disturbed environments.

4. WATER RESOURCES AND WETLANDS [Puget Power]

EXISTING 115-KV TRANSMISSION LINE REBUILD

The BPA-Bellingham #2 115-kV transmission line crosses Fever Creek twice: first, along North Street between Superior and Michigan Streets, and second, at the end of the paved portion of St. Clair Street. The first crossing has no associated wetlands, and no impacts would result from rebuilding the line. The second crossing involves the wetlands identified below. Fever Creek is not a regulated stream under the City of Bellingham's Shoreline Master Plan. Activities within 15 m (50 ft.) of Fever Creek are regulated under the Wetland and Stream regulatory chapter of the Bellingham Municipal Code (Ordinance #10267).

The transmission line spans Fever Creek and wetland south of the abandoned Burlington Northern Railroad (BN) right-of-way on the improved portion of the St. Clair Street right-of-way. This wetland is classified by the City as a Category III (low-habitat-value) wetland and can be described as palustrine forested, broad-leafed deciduous, and palustrine emergent wetland. The transmission line spans this wetland and the Fever Creek channel. No impacts on Fever Creek or its wetland would occur from rebuilding the transmission line. The poles are located out of the wetland and stream corridor. Access to the poles spanning the wetland

is from the existing St. Clair Street right-of-way. Erosion and sediment control measures would be used.

Mapped to the south of the Sunset Drive intersection is a Category III wetland described as palustrine emergent and forested, broad-leaved deciduous. Vegetation consists of soft rush, sedges, velvet grass, and Douglas spiraea. The wetland occurs primarily east of the transmission line. Rebuilding the transmission line would not significantly affect this wetland, because the line would span it. A topographical survey of this area indicates that the wetland lies within an area from about the edge of the Sunset Drive right-of-way to about 56 m (180 ft.) south of Sunset Drive. At these two points, the land elevation is the same, defining the low area. Puget Power's pole location in this vicinity is about 72 m (235 ft.) south of the Sunset Drive right-of-way and about 2 m (6 ft.) in elevation above the wetland. Access to this pole location would be from the south via Barkley Boulevard on the existing unimproved St. Clair Street right-of-way, with no anticipated impacts.

Near the intersection of East Bakerview Road and Dewey Road, the transmission line right-of-way crosses Toad Creek. The line spans the creek and would have no impact on the stream or wetlands.

PIPELINE ALTERNATIVE

The pipeline alternative parallels the Trans Mountain Oil Pipeline from the intersection of the unimproved St. Clair right-of-way and Sunset Drive to the abandoned Milwaukee Road right-of-way. The transmission line would parallel the northerly side of the abandoned Milwaukee Road right-of-way until it joined the existing corridor at the Dewey Road. The City of Bellingham has mapped a wetland just north of Sunset Drive along the Trans Mountain Oil Pipeline right-of-way. This wetland is classified by the City as Category I (high resource value) and described by the Fish and Wildlife Service as palustrine emergent, forested, broad-leafed deciduous and scrub-shrub. About 21 m (70 ft.) of additional clearing adjacent to and parallel with the west side of the pipeline right-of-way would be needed to provide adequate clearance for the transmission line. Moderate clearing impacts on the forested portion of the wetland would be minimized by using equipment which exerts the minimal amount of ground pressure and by replacing lost vegetation with wetland species. The existing Trans Mountain right-of-way and road would provide access to the pole locations, further reducing wetland impacts.

National Wetland Inventory (NWI) wetlands extend from the base of a steep slope along the pipeline to and adjacent with the abandoned Milwaukee Railroad grade. These wetlands have been classified as palustrine forested seasonally flooded, and palustrine forested temporarily flooded. Moderate wetland impacts are anticipated for this section of the transmission line. Impacts on the wetlands to the west of the pipeline right-of-way might result from clearing of trees; these impacts would be minimized by using equipment which exerts the minimal amount of ground pressure and by replacing lost vegetation with wetland species. Minimal impacts are also anticipated at the three or four pole locations required in this area. Existing access

Insert 16
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roads or the existing pipeline right-of-way would be used wherever possible. If wetlands that are lost, mitigation proposed would require replacement.

The NWI identifies wetlands in the area next to but below the railroad grade. The proposed transmission line would be located on the northerly side of the Milwaukee Road right-of-way; the recently built Cascade Natural Gas access road on the abandoned railroad right-of-way would be used for access and construction. Significant access improvements in 1992 have been made along much of the Milwaukee Road right-of-way as part of the installation of the Cascade Natural Gas pipeline. The new transmission line would not affect these NWI wetlands. The proposed substation work would not impact wetlands.

5. FISH AND WILDLIFE [Puget Power]

Because the transmission lines would span all creeks (for both alternatives under consideration) in the proposed right-of-way, very little riparian and/or stream disturbance is expected to occur. Therefore, impacts on fisheries resources are expected to be slight.

Concern for impacts on wildlife is generally slight. Most of the wildlife habitats crossed by the proposed project have been altered by previous human activities. Since human disturbance of these areas is considered to be high, overall wildlife suitability and habitat effectiveness is considered to be low. Potential impacts associated with construction, operation, and maintenance of the proposed project would not significantly affect local wildlife population presently using the area. The number of wildlife species using the area, their abundance, and their movement patterns are expected to remain unchanged following implementation of the proposed project.

6. AGRICULTURE [Puget Power]

Prime farmland defined according to the criteria of the Farmland Protection Policy Act (7 U.S.C. 4201 *et. seq.*) was identified from the USDA-Soil Conservation Service soils surveys of the Whatcom County and Skagit County areas. Lands currently in agricultural use were identified and mapped from information interpreted from May 1992 aerial photography and field verification.

EXISTING 115-KV TRANSMISSION LINE REBUILD

The existing line crosses about 0.5 km (0.3 mi.) of designated Prime farmland and 0.8 km (0.5 mi.) of small-acreage pasture. The existing poles would be replaced almost one-for-one at existing pole locations. Therefore, no loss of either designated Prime farmland or land currently in agricultural use would occur. Given the small amount of land affected, impacts would be minor and short-term, confined to the temporary disruption and inconvenience posed by construction. The substation work would not impact agricultural lands.

PIPELINE ALTERNATIVE

Where this alternative follows the existing 115-kV transmission line, it crosses about 0.5 km (0.3 mi.) of designated Prime farmland currently in pasture. Replacement of poles and impacts would be the same as those for the rebuild, above.

7. VISUAL RESOURCES [Puget Power]

EXISTING 115-KV TRANSMISSION LINE REBUILD

Much of the visual environment of the existing 6.9-km (4.3-mi.) 115-kV transmission line corridor between the Puget Power and BPA Bellingham substations is characterized by residential development and undeveloped rural areas. Residential development is concentrated along the segment of the line from the Puget Power Bellingham Substation to the end of the improved portion of St. Clair Street and along Sunset Drive between St. Clair Street and Dewey Road. The remaining segments of the transmission corridor are predominately undeveloped and rural in nature, with only occasional residential structures located near the transmission line right-of-way.

Within much of the residential areas, views are dominated by housing structures and the linear features of the existing infrastructure, including paved roads and electrical and telephone utility service structures. The BPA-Bellingham #2 115-kV transmission line has been a part of the visual landscape since 1958.

For the BPA-Bellingham #2 transmission line, after the project is complete, the poles would be about 1.5 m (5 ft.) taller than existing poles and be replaced at or near the existing pole locations.

The project would not introduce new visual elements that would significantly change the visual character of the existing transmission line.

PIPELINE ALTERNATIVE

Rural undeveloped property characterizes the visual elements of this alternative route. The pipeline alternative begins at the intersection of St. Clair Street and Sunset Drive and proceeds cross-country in a northerly direction for about 670 m (2200 ft.) to the Milwaukee Road right-of-way. This portion of the route parallels a Trans Mountain Oil Pipeline right-of-way which is cleared and maintained free of trees and shrubs for its 15-m (50-ft.) width. An additional 1800 feet of right-of-way about 21 m (70 ft.) wide would be required to build the 115-kV transmission line next to the pipeline corridor. Clearing of the additional right-of-way and construction of the 115-kV transmission line would affect views, but only along a small stretch of Sunset Drive.

Insert 18
Placement: Top and bottom of page - SEIS Chapter 4/ **142**

CHAPTER 9
COMMENTS AND RESPONSES

This chapter identifies comments made by people who reviewed the Draft environmental impact statement (DEIS) and by those who reviewed the Supplemental DEIS (SDEIS), and either wrote letters on the subject or attended meetings where they registered their concerns. Comments on the SDEIS are distinguished from comments on the DEIS by a vertical line in the left margin. Each comment was assigned an acronym for easy reference (NWTP - *Northwest Transmission Project; BOH - Bellingham Open House; or SWOH - Sedro Woolley Open House)* plus numbers to indicate which letter or meeting, and which comment within the individual's discussion. Comments were grouped by area of focus (e.g., Purpose and Need, Visual Resources, Design) and responses prepared. Below, you will see each comment, followed by the name of the commenter and the identifying comment code, and, last, the response. Where similar comments were made by more than one person, they are also referenced but not repeated word-for-word.

A. PURPOSE AND NEED

BPA

Comment: The SDEIS's discussion of the need for this project may be supplemented with the following information:

A. Access to Canadian Energy Resources. The project will provide Puget Power greater flexibility to respond to a variety of needs in competitive markets. The opening of a wholesale generation market has led to increased price competition. The project will provide Puget Power with direct access to Canadian energy resources. Direct access to these resources will provide Puget Power with greater flexibility to realize competitive opportunities for the benefit of its customers. Some of these competitive opportunities are anticipated in the short term (i.e., energy acquisitions on the spot market that displace more expensive resources) while other opportunities are anticipated for long-term resource needs (i.e., firm acquisitions).

B. Local Reliability. The SDEIS states that the project will increase the capability of the local transmission system to move power through and out of the local area, and Puget Power's 115 kV system will be better protected against thermal overloads. Puget Power has, over the last few years, made improvements to the local transmission system, and during this time approximately 655 MW of new generation (cogeneration facilities) have come on line. These changes have altered the local transmission system and have, as the SDEIS notes, to some extent "diminished" the degree to which this project is needed to address local transmission deficiencies. However, the local reliability benefits afforded by the project are still important and needed.

The project will add a second 230-kV transmission line from the BPA Bellingham Substation to the Puget Power Sedro Woolley Substation. This will prevent, under certain conditions, overloading of Puget Power's 115-kV lines. Puget Power's Sedro Woolley-to-Bellingham #3 and #4 115-kV transmission lines are electrically parallel to BPA's existing Bellingham-to-Sedro Woolley 230-kV line. Loss of the existing BPA 230-kV line causes more power to flow on the Puget Power 115-kV lines, resulting in overloads and outages. A recent outage underscores that when this occurs, potentially dangerous overloads result and many Puget Power customers can be affected.

Doug Loreen *NWTP-04-019*
Puget Sound Power & Light Co.

Response: This information has been incorporated into the Final EIS.

Comment:

1. You have admitted to the fact that you do not have a contract with Canada for the power for this project. How can you justify spending the millions of dollars this project will cost taxpayers with no binding contract?

2. The regional need for access to additional power seems unfounded given that the region has excess power. BPA is having a difficult time competing with private power generation and has lost significant customers lately. This trend must be fully documented, analyzed, and addressed before this project can be seriously considered.

3. Given the intense competition with private power generation, why is BPA competing with private industry, with taxpayers' dollars, in the generation of electricity when private industry is offering competitive alternatives and employing American workers?

5. Project financing. As taxpayers, we find it ludicrous that we are being asked to fund another project that allows BPA to compete with the private sector power generation, when BPA has yet to repay its loans from the Federal Treasury. The project's financing and BPA current indebtedness to the Federal Treasury should be explicitly stated in both the EIS and project justification.

10. In light of the above concerns (1-9), it is reckless and abusive for BPA and Puget Power to proceed with this project. F.A.I.R. believes that this project should be abandoned. If BPA can properly justify the region's needs in the future, the transmission line should go in the less populous Eastern Washington Corridor.

[Martin Eifrig *NWTP-04-015*
FAIR (Families Against Increased Risk)]

Comment: The whole premise for the BPA/Puget Power Northwest Transmission Project is dubious at best. Why are you building a "line for the region" when you are canceling an energy agreement with Canada?

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-2

It is disturbing to us that your BPA project is in partnership with Puget Power, a privately owned company. Why should we citizens support Puget Power's stock and private dividends for the stock holders of Puget Power at the tax payer's expense and at our own personal property devaluation?

With the current discussions taking place about the elimination of the Department of Energy, of which you are a part, and about the current huge debt load of BPA, which has yet to pay its loans from the Federal Treasury that were generated years ago, we feel the proposed project is an excellent example of government waste.

[Craig Langager NWTP-04-009
FAIR (Families Against Increased Risk)]

Comment: Although I do not see an immediate need to increase transfer capability, I do understand that future needs are inevitable, and that you need to prepare now.

[Bonnie Morehouse BOH-5]

Comment: Where is the power going?

[Anthony Raas BOH-7]

Comment: Does this project meet a need that is present now or a marketing need for the future?

[Kathy Klemmer BOH-8]

Comment: Is this project needed to increase sales?

[Anthony Raas BOH-7]

Comment: I realize that increased development requires additional power.

[Peggy Mohr BOH-27]

Comment: We have a lot of power resources in Whatcom County and we don't need any more.

[Tom Lingbloon BOH-34]

Comment: With respect to the increased transfer need, why is this work isolated to the Bellingham area? Why is the work concentrated in this area? Why doesn't the need to rebuild lines continue beyond this area?

[Ray Tompkins SWOH-6]

Comment: I don't agree that there is a seasonal difference between the U.S. and Canada. A seasonal exchange doesn't make sense.

[Ray Tompkins SWOH-7]

Comment: What is the comparative cost between Canadian, PNW, and California power?

[Ray Tompkins SWOH-8]

Comment: What projected power needs underlie this project?
[Ray Tompkins SWOH-9]

Comment: Did you do a study to see if the upgrade is cost effective?
[Ray Tompkins SWOH-10]

Response: These comments have been grouped because they all center on the need for the project. Electric power market and business conditions have changed considerably in the last two years, as has BPA's financial situation. Consequently, concerns have been expressed as to the economic viability of this project to BPA, the region, and in particular to Whatcom County. The EIS itself has extensive discussions on the need for and viability of this project. However, given the number of comments focused on this issue, a more historical discussion may be useful.

Historical Background

In the early 1980s, BPA determined there would be a need to upgrade the local Bellingham area transmission system to meet anticipated population growth in the Whatcom and Skagit county areas. The start of an upgrade project was delayed, however, as population growth was slower than anticipated.

By the mid-to-late 1980s, Puget Power also determined a need to upgrade its system and to connect that system directly with the transmission system in British Columbia. In May 1989, Puget Power applied to the Department of Energy, Office of Fuels Programs, for a Presidential Permit to construct, connect, operate and maintain electric transmission facilities at the international border between the U.S. and Canada. The proposed project would have constructed two, 230-kV transmission lines on new right-of-way, crossing the border into Canada near Lynden, Washington. An EIS process was begun, and public meetings were held. Included in that EIS was an option of rebuilding part of BPA's 230-kV system.

Much public interest and opposition to Puget Power's proposal ensued. Additional interest was expressed in rebuilding the existing BPA transmission line between its Custer Substation northwest of Bellingham and its Bellingham Substation. In November 1993, Whatcom County voters amended the County zoning ordinance to restrict the construction of transmission facilities over 115-kV, except on land where conditional use permits have already been granted or in areas classified as industrial.

Unable to proceed with their original plan, Puget Power then entered into joint technical studies with BPA and found that rebuilding *existing* lines would accomplish the need of increasing the U.S.-Canadian intertie capacity and solving the local reliability problems for BPA and Puget Power. The agreement to pursue such a plan jointly evolved into the present proposed project. Puget Power's petition for a Presidential Permit was suspended, and its *original* project put on hold, pending the outcome of this joint project.

If this joint project is not completed, then Puget Power could reopen its original project to try to satisfy its own needs/goals.

Changes in the Project

As part of the joint project, BPA published a draft EIS (November 1993) that included three main options for the BPA corridor between Custer, Bellingham and Sedro Woolley as well as upgrades/location options for Puget Power 115-kV lines near and within Bellingham. Public meetings were held and comments received.

Also in the early 1990s, new generating facilities were constructed and associated Puget Power upgraded its 115-kV lines in the Whatcom County area. Aware of these developments, the local public questioned BPA on the need to upgrade BPA's line to solve local reliability problems, which appeared to Whatcom County residents to be taken care of with the construction of the generation facilities.

In 1994 Puget Power, responding to budget concerns, restudied the need for upgrading its 115-kV system, concluding that the planned Bellingham-Kendall 115-kV loop line into BPA's Bellingham Substation was not needed. The utility forwarded this information to BPA.

Meanwhile, BPA was also going through a transformation. After several years of low precipitation/low river flows, low aluminum prices, increased need to help the salmon migrate to the ocean by flushing the rivers, reduced natural gas prices allowing the gas generators to be more competitive, and deregulation of the electrical industry (Energy Policy Act of 1992), BPA's revenues were reduced. Under increasing pressure to be more cost-conscious and more competitive, BPA reviewed all of its pending projects to determine their individual merit and cost effectiveness, including the NW Washington Transmission Project. BPA concluded that the project was still needed, but that the focus had shifted more toward increasing the intertie transfer capability, with less emphasis on the need to increase local reliability. The latest studies made it apparent that Option 1 (a double circuit 230-kV line) would be able to meet all of both BPA's and Puget Power's needs and was the least costly and most environmentally favorable compared to other options. Accordingly, Option 1 was identified as the Proposed Action in the Supplemental DEIS.

Project Benefits and Costs

Puget Power agreed with BPA's findings and agreed to continue ahead with the joint project. Puget Power would be a full financial project partner, and would pay its share of the costs of this Project. The NW Washington Transmission Project was thus determined to be still economically viable to both entities.

Intertie projects have historically provided more benefits than costs for BPA. Knowing this, it was clear that the benefits to BPA would be substantially greater than the cost of

building the Project. BPA decided a specific cost/benefit analysis was unnecessary. The benefits of this project, as described in the EIS, are as follows:

- additional Federal access to return stored energy from Canada;
- added capacity for anticipated increases in Northern Intertie power transactions for Pacific Northwest utilities;
- increased flexibility in operation of the hydroelectric system and of thermal resources within Whatcom and Skagit counties; and
- increased access to Canadian resources that would meet the objectives of BPA and Puget Power strategic business plans.

This project would also benefit BPA utility customers. BPA would better be able to work with Canadian and PNW or PSW utilities to find the most economical power available at any given time. For instance, during spring runoff or fish flushing, excess water releases would be used to generate electricity. BPA would wheel the power to Canada who would therefore not need to generate as much electricity to supply its own demands, and would be able to store more water behind their dams. BPA would pay Canada a storage fee. When BPA needed the power in the fall, Canada would generate electricity and wheel it back to BPA. The Bellingham Project would enable more (425 MW for BPA's portion) of this type of exchange to take place, representing a substantial value to BPA. Ultimately, the end user of electricity would benefit through electrical rates that would be lower than otherwise possible.

The release of National Marine Fisheries Service's Biological Opinion on March 1, 1995, regarding operation of the Federal Columbia River Power System has made this project even more essential. During fish-flush periods in the Snake and Columbia rivers (May-August), BPA will want to sell surplus power to the Southwest and store energy in Canada. Together, BPA and the Canadian utility (POWEREX) would be able to make energy sales to the Southwest which neither could otherwise make alone. (Neither BPA nor POWEREX alone have the right mix of capacity and energy products to meet the market needs of the Southwest.) Instead of spilling water over the dams, generating no revenue for BPA, the agency would be in a position to sell power to the Southwest and others, and gain back some or all of otherwise lost revenues.

The current Intertie system in the Bellingham is a bottleneck that constrains the capacity of the Intertie. The proposed upgrade will remove this bottleneck and increase transmission capacity of the Intertie by 850 megawatts. Increased Intertie capacity will in all probability be fully used in a relatively short period. For example, BPA currently has received requests for transmission services from two Northwest utilities to wheel power from Canada to their service areas in the Northwest. Requests for firm transmission services cannot be met without upgrading the transmission system on both sides of the Canadian border. BPA charges for transmission services which, over time, will help offset costs.

In an expanding and competitive wholesale electric market, BPA expects that Northwest utilities will seek to purchase power from British Columbia and Alberta. Canadian utilities have power to sell, and Northwest utilities are anxious to purchase power in a competitive market, at the lowest cost possible. Expansion of the Northern Intertie enhances that competitive market with the opportunity to reduce cost of power to Northwest ratepayers.

Firm contracts for power sales between Canada and the U.S. cannot occur without adequate transmission capacity. The NW Washington Transmission Project provides added transmission capacity and makes such transaction possible.

The project would provide benefits to Puget Power as well. Puget Power would have greater flexibility to respond to a variety of needs in competitive markets by giving it direct access to Canadian energy resources. The project would also improve local reliability: Puget Power's 115-kV system would be better protected against thermal overloads when BPA's lines are out in the area.

It is true that the capital outlay for this project would increase BPA's deficit. However, it is anticipated that the project would quickly pay for itself, reducing BPA's costs and increasing revenues.

Comment: 4. BPA is attempting to cancel a contract with a private power producer, Tenaska, yet still wishes to pursue this project. Tenaska, in turn, has filed a claim against BPA for over 1 billion dollars which is further cause for alarm of BPA's judgment. Even the Northwest Power Planning Council which sets policy for BPA has warned that BPA may not be competitive. These power plants employ American workers and can be placed adjacent to high use areas which reduces health issues, property devaluation, and need for massive transmission lines in a densely populated region. BPA must re-evaluate their policy and gain public acceptance before embarking on the transmission line project.

[Martin Eifrig NWTP-04-015
FAIR (Families Against Increased Risk)]

Response: BPA has been in settlement discussions with Tenaska Washington Partners II, L.P. (Tenaska) regarding its power project since April 17, 1995, when BPA informed Tenaska of its intent to withdraw from the project. These discussions are being undertaken with the hope of arriving at a level of compensation agreeable to both sides. The Secretary of Energy has encouraged, and BPA is willing to enter into, mediation to attempt to resolve this dispute.

Meanwhile, on June 23, 1995, Tenaska filed suit in the United States Court of Federal Claims and in the United States Court of Appeals for the Ninth Circuit. Because Tenaska and BPA have agreed to maintain confidentiality regarding the settlement discussions, and because the matter is in litigation, we are unable to comment further at this time. However, BPA's decision to withdraw from the Tenaska Washington project is not related to the BPA/Puget Power NW Washington Transmission Project.

Comment: . . . The project will benefit Canadian, Californian, and utility interests and the residents along Lake Whatcom will suffer property devaluation, higher exposure to EMF, visual impacts, fire hazard, and deteriorating water quality [suffer all the negative impacts and not get any of the benefit].

[Craig Langager NWTP-2-56/3]

Comment: *I didn't understand*:[1] Why you feel you need to increase the size of this power line.

[Elaine McRory NWTP-2-68/2]

Response: The purpose of the project is covered in the Supplemental DEIS in Chapter 1 "Purpose and Need for Action." The Northwest Washington Transmission Project provides additional transmission capacity between Canada and the Pacific Northwest. This is beneficial to all parties--local and regional--served by BPA and Puget Power, because the project increases the ability to import power more effectively and economically to the Northwest from Canadian utilities. This project is also needed to prevent local thermal overloading, which is partially caused by the transfer of excess generation (energy) out of Whatcom/Skagit counties. Also, see Chapter 2, Section C "Description and Comparison of Alternatives, Including the Proposal."

Comment: A more thorough analysis of Whatcom County's power requirements should be made in light of the start-up of new cogeneration power plants in both Whatcom & Skagit counties. These new "cogen" plants would appear to alleviate the local need for increased power transmission capacity. More detailed comment on why this proposal has significant value to local residents should be made in the EIS.

[Kate & Martin Eifrig NWTP-2-62/8]

Comment: Existing Transfer Capacity. There are references throughout the DEIS to the existing transfer capacity of the Northern Intertie, stated in most cases as 2,000 MW rated transfer capacity ("RTC") westside, north to south. The DEIS also states that the single contingency rating ("SCR") of the Northern Intertie is 230 MW on the westside, north to south. This discussion of existing transfer capacity in terms of the SCR is important. It underscores the need to improve existing firm transfer capacity on the Northern Intertie (i.e., to increase the 230 MW single contingency rating of the existing system).

[John Campion NWTP-2-84/2
Puget Sound Power & Light Co.]

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[1] Material in italics is the "prompt" from the comment response sheet circulated to help people focus their comments.

Comment: *You could improve the choices by:* creating another source of power - has wind power ever been considered? Such as Pacific Gas and Electric did at Altamont Pass in California.

[Barbara Landrock NWTP-2-36/1]

Similar comments from:

Marcia Leister	*NWTP-2-34/2*
Ray/Dolly Tompkins	*NWTP-2-98/38*
FAIR	*94-0085/9*
Craig Langager	*NWTP-2-56/2*
Mike Kaufman	*NWTP-2-57/31*

Response: While alternative energy resources have diminished the local reliability issue, alternative energy sources do not eliminate the need for this project, because of the continued need for additional transfer capacity between the U.S. and Canada. Although alternative energy sources such as cogeneration, wind power, etc. would provide some of the needed power for the local area, the problems with the existing system are further compounded by the inability to transfer excess generation (energy) out of Whatcom/Skagit County. See discussions on cogeneration in Chapter 1, Section 1.D.1.

Comment: *I think the analysis would be better if you*: addressed power issues arising from increased demand due to 'development.'

[Marcia Leister NWTP-2-34/1]

Response: As indicated in the Purpose and Need sections, BPA recognizes the effect of increased local demand for power on the existing system. Also, regional power demand is increasing. Even though Northwest utilities invest in aggressive conservation programs, upgrading the transmission system is still needed.

Comment: Where does power for these lines originate?

[Ed Serna NWTP-2-98/35]

Response: Power that is transferred over the Northern Intertie can originate within Canada and the U.S. at virtually any power source connected to the transmission grid. Most of the power would come from the Federal hydroelectric dams on the Columbia River. Canadian power would also be largely hydroelectric and would originate at Peace and Columbia River dams. Please also see Chapter 1, Section B "Need," in the Supplemental DEIS.

Comment: How long is this going to last in the future?

[Cary Schmidt NWTP-2-98/41]

Response: Commercial energy transactions between the U.S. and Canada are expected to increase in future years. The proposed facilities would enable a moderate increase in such transactions. Dramatic changes have occurred in the electric power industry since passage of the 1992 Energy Policy Act. Business uncertainty is high. It is thus difficult to say how many years would pass before added capacity on the Northern Intertie would be needed.

B. ALTERNATIVES

1. No Action

Comment: I prefer the No Action alternative, but if the project proceeds I prefer Option 1 because it proposes towers that are no taller than the tallest existing towers in the corridor.

[Kathy Klemmer BOH-19]

Response: BPA is proposing to build Option 1, which would use double-circuit 230-kV transmission structures that are generally the same height as the adjacent 500-kV structures.

2. BPA Design Option 1 - Proposed Action

Comment: I believe this proposal, as outlined on page 6, is the best solution, and certainly the one that would impact my land the least. Therefore I am in favor of it.

[David Davis NWTP-04-003]

Comment: We do not have a position on whether the power lines need to be upgraded, but if they are upgraded we believe they should be held within the existing corridor. The right thing to do is leave the lines where they are currently. It is environmentally right, financially right and morally right.

[Tracy Westbury NWTP-04-21
Concerned Citizens Around Lake Whatcom Watershed]

Comment: My husband and I do not have a "not in my backyard attitude." The option BPA is proposing (Option 1) helps the community financially and uses existing right-of-way which helps minimize impacts.

[Bonnie Morehouse BOH-4]

Comment: I hope political pressure does not change BPA's proposed alternative.

[Bonnie Morehouse BOH-14]

Comment: If the project proceeds, Option 1 has the least environmental impact because it has smaller towers and uses existing right-of-way. I am happy that the proposed alternative is for shorter towers (not any taller than those now in the corridor).

[Anthony Raas BOH-17,22]

Response: Thank you for your comments in support of the proposed option.

Comment: *You could reduce impacts by*: "Sticking with your proposal and being more sensitive to ecological concerns in general."

[David Davis NWTP-04-003]

Response: After completion of the Final EIS, BPA will consider the information in the Final EIS, together with economic and engineering factors, and issue a Record of Decision documenting BPA's decision, including the rationale for its selection. BPA will document mitigation actions that will be undertaken to reduce the project's environmental impact. A mitigation action plan will be completed, that will guide design, construction, operation and maintenance of the new facilities.

3. BPA Design Option 2 - 500-kV Design, with Operation at 230-kV

Comment: With Options 2 and 3, more load carrying capability is built into the double circuit 500-kV line than is indicated in the DEIS. With this additional capability it would be easy for BPA to upgrade to another 3rd 500-kV circuit.

[Steven Wight NWTP-2-98/33]

Response: BPA has no plans to upgrade to a third 500-kV circuit at this time. The 500-kV construction was considered primarily because the larger conductors would save energy by reducing losses on the system. The proposed plan is to construct a double circuit 230-kV line (Option 1) which cannot be upgraded to 500-kV. BPA could not upgrade the other Options at a later date without a new environmental and public involvement process.

4. BPA Design Option 3 - 500-kV Operation of the Rebuilt Line

Comment: I prefer Option 3 because it has lower EMF increases and more EMF decreases.

[Dean Wadsworth SWOH-16]

Response: This option, although desirable from an EMF and noise standpoint, is nearly $20 million more costly than Option 1. For this reason, Option 3 was not selected as the Proposed Action.

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5. BPA Design Option 4 - 500-kV Operation of the Rebuilt Line

No comments were received on this topic.

6. Location Alternative - North Shore Road

Comment: I am definitely not in favor of what is described on pp. 10-12 as the North Shore Alternative. Reasons for my objections are:

a) It would be unnecessary, arbitrary, and costly to condemn additional land, log it, build more roads, and impact house and house sites east of the already existing corridor.

b) Fragile wetlands would be additionally impacted in an adverse manner. Wetland on my property and neighboring property south of me would be wiped out completely. Olsen Creek would probably receive sediments and other erosion from construction.

c) EMF's have not, according to studies, resulted in definitive conclusions. EMF's are a main factor cited by FAIR, but in my personal opinion this issue masks what is actually an economic and aesthetic issue: having "the wooden pole line" removed would enhance FAIR's property values.

d) The crossover described on p. 11 of the summary sounds complicated and also risky or possibly undependable. I agree with the point made on p.105 of your DEIS: namely that in FAIR's alternative the end result "would be visible for more people...

e) The North Shore Alternative would place lines so close to my residence near Olsen Creek that I would not be comfortable living there. The mixed forest between my house and the present corridor would have to be removed, eliminating the partial buffer from which the house benefits. This house was built where it now sits in order to minimize the visual and auditory impacts from BPA lines. My personal life would be impacted adversely to the extent that I would be forced out. Moreover, I believe it would be impossible, given today's general attitude towards power lines, to sell the house.

f) The North Shore group purchased their land with a full comprehension that the power lines ran near it or across it. To move these lines from their backyards into my own and other's front yards appears fundamentally unfair in intention.

Even separately, each of the above reasons is reason enough not to move 3.4 miles of BPA corridor to the east, at enormous expense to taxpayers. Taken together, all these reasons make the North Shore Alternative and alternative worth fighting in court, if it ever comes to that.

[David Davis NWTP-04-003]

Response: BPA shares some of your concerns and designated Option 1 as the Proposed Action because it best achieved the purposes and needs for which the project was proposed, while minimizing impacts on property owners and the environment. Option 1 also is less costly, as you point out.

Comment: If the North Shore Alternative is selected, I am concerned about the impacts to property improvements (out buildings, etc.) that BPA would have to take for the new right-of-way.

[Bonnie Morehouse BOH-6]

Comment: Don't move the line as proposed in the North Shore Alternative and decrease someone else's property values, to make up for a financial error (buying land along a transmission line right-of-way).

[Bonnie Morehouse BOH-13]

Comment: I am concerned about FAIR's proposal of moving the line to the side of the right-of-way where their home is located. Our neighbors are also concerned. What do I need to do to make our concerns known?

[Bonnie/Ron Morehouse NWTP-04-12]

Comment: Attached are copies of the assessors map which shows our 20 acre parcel along with our proposed short plat that has been submitted to the County for approval. Unless BPA buys Lot 4 of our plat or pays us a very substantial amount of money to acquire an additional easement, we strongly object to this (North Shore Road) proposed alternative. Moving out of the existing power corridor further onto our property would result in a huge monetary loss to us and make the selling of Lot 4 extremely difficult.

[Steve and Judy Potter NWTP-04-16]

Response: BPA proposes to rebuild the new 230-kV double-circuit line on the *same* alignment as the existing 230-kV line. The North Shore Alternative was analyzed, but was not designated as the preferred option. If BPA were to construct the North Shore Alternative, land rights needed for the new right-of-way would be appraised, and landowners would be compensated for the value of the property. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value.

Comment: The "FAIR" group along Lake Whatcom has requested that the danger line (the line closest to our homes) be moved to the far side of the right-of-way where there are no homes. BPA has responded by saying that it would be too expensive. However there are numerous examples where the government and private businesses have spent large sums of money to protect a few homes. For example many flood control projects cost millions but only protect a few homes.

[Sharon Hoofnagle, D.V.M. NWTP-04-17]

Response: If the North Shore Alternative were to be chosen, homes and private properties on the other side of the right-of-way would be affected. Please note other public responses on the North Shore Alternative and the full analysis of this alternative in

the EIS. (See Chapter 4 Environmental Consequences - Part D Resource Impacts and Mitigation Actions: BPA's Part of the Project, SDEIS pp. 4/68-4/135.)

Comment: I am writing to you in response to the North Shore alternative proposal. I understand that this proposal was brought to you by a group called FAIR. It seems that the term FAIR should be just that, FAIR, but in this case it reflects the opposite. Nobody wants powerlines in their backyard. I would make the powerlines disappear if I could, but I would certainly, by no means move them into my neighbor's backyard. I am asking you to refuse this proposal. If you move the corridor east, my home will be affected. I see deer, rabbits, and grouse on our property on a daily basis. If you move the corridor, hundreds of acres of trees will be cut down and you will be taking the homes of these animals. I do not want to see these animals, or any other animals die, due to needless acts.

I represent the future of America and I'm amazed at the lesson I am learning from this project. It seems unjust to take from your neighbor to better yourself. I've been brought up to "love thy neighbor."

I know we use more power everyday so it's only a matter of time before the power lines need to be upgraded, but I ask you to please use the corridor you already have. Destroying this vital land and causing imminent death to thousands of animals is too high a price to pay for such a senseless act. There are less harmful alternatives.

[Megan Morehouse NWTP-04-20]

Comment: We are writing in regards to the North Shore alternative proposal offered by "FAIR" which would move the power lines to the east. In moving these lines we would feel a tremendous impact to our woodlands, streams, animals and neighborhood as well as the additional cost of $2,000,000 in public funds.

In order to move the power lines to the east there are many aspects that need to be realized.

1) The new roads that would be built will increase sediment and silting, which can reduce light penetration of the stream and reduce plant growth. It can also damage fish gills, suffocate fish eggs and larvae of other species, and affect plant densities.
2) There will be additional erosion and runoff of silt and increased sediments, caused by clearing of vegetation from the area of the affected streams. Trout have historic habitat in the affected streams and are especially vulnerable to increased sediments.
3) The counties which border the Puget Sound Basin, and land clearing developments within their boundaries, must comply with the management practices as outlined in the Puget Sound Stormwater Control Manual.
4) This project may be built close to possible unstable soils which are in slumps and flow slides.

5) Clearing a new corridor, which falls in the Lake Whatcom Watershed, will cause the loss of our forest, leaving the possibility of extreme windfall.

6) Lost forest habitat may affect many species in and near the project area, including the black tail deer, an economically important big game animal in this region. These deer frequent the area as part of their winter range and may be adversely affected by the depletion of forest in the corridors which will reduce their range.

7) With the North Shore alternative, families and homes will be displaced.

8) The powerlines were in existence when the current homeowners purchased their property and homes. It seems selfish to move the lines for financial gain at someone else's expense.

[Tracy Westbury NWTP-04-20
Concerned Citizens Around Lake Whatcom Watershed]

Comment: We all bought our property knowing where the existing lines are. The suggestion to move the line (North Shore Alternative) would benefit those on the west side of the corridor but hurt those on the east. Also 70 acres of trees would need to cleared for the North Shore Alternative.

[Bonnie Morehouse BOH-2]

Comment: People suggesting the North Shore Alternative are not considering the environmental impact of cutting trees and erosion.

[Bonnie Morehouse BOH-1]

Comment: An alternative plan to upgrade the BPA power lines has been proposed that would expand the BPA powerline right-of-way 250 ft. to the East. This strikes me as a near ultimate example of the "Not in my back yard" syndrome.

We are talking about the destruction of hundreds of acres of forest. This forest is both a substantial habitat as well as a major element contributing to the water quality of the Lake Whatcom Water Shed (sic). Furthermore, these powerlines, visible from a large part of the County, are already less than attractive without adding another 250 feet to the scar. There already has been substantial litigation because of instability of slopes caused by logging in the Smith Creek and Olsen Creek drainages. This will cut straight across both of these. How much siltation will be generated by construction through freshly logged mountain terrain?

While compared to the shore of Lake Whatcom, there are relatively few property owners, they exist and, unlike their shore-side neighbors, they stand to lose a lot. These folks have moved here, just as the lake shore owners, because of important lifestyle choices. This option will destroy part or all of the reasons for their choices by making substantial changes to the appearance of their home environment and/or taking property from a number of them.

Is all this damage to be wrought to the citizens of the County just to satisfy an unsubstantiated claim by some that electromagnetic effects from the power lines pose a health hazard? Any evidence that exists is circumstantial and vague. This proposal makes no sense at all.

There has been a huge amount of concern and activity regarding environmental health of the Lake Whatcom Water Shed and water supply. There have been generated a large number of regulations and ordinances whose intent is to prevent just the kind of impacts that this proposal would generate. It is hard to see how this proposal can be taken seriously.

On the other hand it might not be hard. After all, it is a lot of people on the lake shore who happen to have a lot of money who are making this proposal. It seems an effort to wield political clout rather than doing what is right . . . the vast majority of these people moved here after the BPA power lines were in existence and that didn't deter them from moving here to begin with. What gives them the right, now, to push the lines away from themselves and into someone else?

Too often money drives decisions in our society; this is contrary to the basic principles of our government. I urge you to make the option choice best for all. A choice based on known scientific facts and not on the basis of whimsy or legal threats by well funded individuals who would rather not have the power lines near them, now that they're here. I do not see how a good choice could include expanding the width of the right-of-way.

[Paul N. Graf NWTP-04-023]

Response: BPA strives to be objective and impartial and gives equal consideration to all public comments on its proposed actions. BPA strives to minimize the impacts and as you suggest to "make the option choice best for all." By identifying Option 1 as preferred, BPA indicated its opinion that this alternative best achieved the purposes and needs for which the project is proposed, while minimizing impacts on property owners and the environment. Following completion of the EIS, BPA will consider the environmental impacts described in the Final EIS, public comments, and economic and engineering information. The agency will then select one of the alternatives described in the EIS. BPA will issue a Record of Decision documenting its final decision no sooner than 30-days after the Final EIS is issued.

Comment: Move line to other side of corridor: This would get the new line further away from residences and more onto forest land. Apparently property has been exchanged from the Trillium Co. to Whatcom County. How much would that cost?

[Craig Langager NWTP-2-53/5]

Similar comments from:

[Kate & Martin Eifrig NWTP-2-62/1&2
Scott Walker NWTP-2-57/2
Craig Langager NWTP-2-57/11
FAIR 94-0085/4]

Response: The suggestion of moving the new line location to the other side of the corridor in the Lake Whatcom area is fully analyzed in the SDEIS and is compared against the other extensively studied feasible alternatives. The new alternative is called the North Shore Alternative.

Although the North Shore Alternative would move the new transmission line further from the residences along Lake Whatcom, it would require:

- about 38 m (125 feet) of additional R/W,
- up to 61 m (200 feet) of additional clearing,
- additional access roads to each new structure site,
- several very heavy and tall angle structures,
- acquisition of 2.4 km (1.5 miles) of right-of-way across private property, and
- costs up to $2,000,000 more than proposed Option 1.

It would also create the following environmental impacts:

- location within 52 m (500 feet) of six residences on the east side of the corridor;
- visual impacts on the Lake Whatcom area, as the North Shore Alternative is located on the uphill side, with the tops of the new towers at a higher elevation than the existing steel towers; the construction of additional new access roads on the uphill side would create additional visual scarring;
- increased erosion potential with the addition of new roads and clearing of trees;
- removal of about 28 ha (70 acres) of timber lands.

BPA, therefore proposed Option 1, rather than the North Shore Alternative.

7. Location Alternative - DNR Route

Comment: For the DNR alternative, I do not believe that (certain) environmental impacts would be severe. Using the existing corridor impacts people with high value property much more. Impacts to soil erosion can be mitigated.

[Anthony Raas BOH-16]

Response: Although soil and other landscape-related impacts can often be mitigated, the difficulty *increases* and the effectiveness *decreases* with the severity of the terrain and amount of disturbance. The DNR alternative would require construction of a new corridor and road system in an area of steep slopes and soils susceptible to erosion and landslides. Even with mitigation, these actions will have long-term effects on run-off, erosion, and sedimentation levels within a sensitive watershed. Minimizing the amount of disturbance from corridor clearing and road construction will lower erosion and water quality impacts.

Comment: DNR Alternative - What has greater weight . . . Additional $4-5 Million, or environmental impacts (soil disturbance, erosion, timber, visual, etc)?

EMF - How much consideration did EMF get in selecting the existing right-of-way over the North Shore Road or DNR alternatives?

[Jim Cumberland BOH-28,29]

Response: The environmental analysis for the DNR alternative and the responses to public comments describe much greater environmental impacts and costs than the proposed action. (See Chapter 2, Part D, Alternatives Considered and Eliminated from Detailed Discussion.)

Comment: You could improve all of the choices by: moving the new line well away from the residences, particularly in section E where the lines run close to homes. In particular, consider relocating the new line to the other side of the easement or rerouting the easement through undeveloped lands (mostly DNR lands) well beyond any residences.

[FAIR 94-0085/5]

Comment: But I do think that maybe a reasonable alternative to the present plan would be to move the powerlines up a little, up the shoulder of Squalicum Mountain just northwest of Agate Bay so that it would be away from any homes and run it a half a mile further up Stewart Mountain on up to where it is now above Smith Creek.

[David Davis NWTP-2-57/6]

Comment: There is another alternative to the project as proposed, which would solve all of these problems and yet allow the project to be developed. This "fourth alternative" has been discussed at public meetings, but apparently was never seriously considered, as it should have been. The entire project could be located on undeveloped DNR land, approximately 1/2 mile from the location of the present transmission easements. Human habitation and private land ownership impacts would be avoided by locating the project on publicly owned property in the immediate vicinity of the proposal. Certainly in the long property occasioned by the other three alternatives.

[Jeffrey Broihier NWTP-2-85/1
Broihier & Wotipka, Attorneys]

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-19

Similar comments from:

[Kate & Martin Eifrig	*NWTP-2-62/3*
Scott Walker	*NWTP-2-57/3*
Philip Andress	*NWTP-2-57/5*
Barbara R. Locke	*NWTP-2-70/1*
Judith Andress	*NWTP-2-57/10*
Vivian S. Barnes	*NWTP-2-81/1*
Terry & Lori Bierman	*NWTP-2-92/2*
Don Oliver	*NWTP-2-93/1*
State of Washington, Department of Health	*NWTP-2-93/1*
FAIR	*94-0085/1&3*
Darrel Mendelsohn	*NWTP-2-95/1*
Irene Nusslock	*NWTP-2-78/1*
Peny & Scott Walker	*NWTP-2-98/10*
Fred Tanner	*NWTP-2-80]*

Response: BPA evaluated the issues that would result from a new line location east of Lake Whatcom on Washington DNR-managed lands (the "DNR Routing Alternative"). A complete discussion of this alternative is provided in Chapter 2, Section D.6.

The environmental impacts of the DNR route would be much higher than those for the options which use the existing transmission line corridor. The cost of the DNR route would also be $4 - $5 million higher than that for the proposal. Finally, establishing a new high-voltage power line corridor would not be consistent with the Whatcom County ordinance. For these reasons, the DNR Routing Alternative is considered not practical and was eliminated from consideration.

8. Other Location Alternatives

Comment: I am concerned about the location of the line. I live just south of the Skagit/Whatcom County line where the corridor has only two lines (the 500-kV line is on its own right-of-way to the east). Why can't the new line be located next to the eastern line, to avoid existing and future homes?

[Susanne Jenkins NWTP-04-12]

Comment: If for some reason this project must be done, wouldn't it make sense to locate the lines in BPA's Eastern Washington corridor where there is much less population?

[Milton and Susan Jenkins NWTP-04-18]

Comment: Given that the local power demand is no longer the justification for this project, why are you routing the line through our densely populated Western Washington region instead of the Eastern Washington Bonneville Power grid? If power is coming from Canada, why can't it be routed through Eastern Washington?

[Craig Langager NWTP-04-9]

Comment: Why not use the east side lines to move the power south? This is not being considered seriously due to cost. Power travels so fast, it would not seem to make any difference if it were on the east side. An eastside alternative would not impact as many people.

[Tom Lingbloon BOH-20]

Response: The NW Washington Transmission Project serves a variety of purposes and needs, one of which is to move power north and south between the U.S. and Canada. An eastern Washington route for the new line, as suggested by commentors, would traverse less settled areas, but for a number of reasons would not meet all of the purposes and needs described for this project and therefore is not a viable alternative.

One of the alternatives considered in the Canadian Entitlement EIS is to build a new transmission interconnection to Canada in Eastern Washington. An expanded discussion of this line and why it would not meet the needs of this project is enclosed below and as Insert 3 in Chapter 1.

Routing the power over a line in the existing corridor in Eastern Washington from Spokane to the Canadian border would not meet the needs for this project, which are as follows:

1) to provide an expanded path for electrical power *from* Canada to the Northwest and Southwest so that BPA, Puget Power and other utilities can buy power from Canada,
2) to move power out of Whatcom County area from existing generating facilities, and
3) to provide better local reliability in the electrical transmission system.

Given these needs, Eastern Washington transmission alternatives are not practical and are not being discussed or compared with the other viable NW Washington Transmission Project alternatives. (See Insert 3)

For the reasons above, any transmission project east of the Cascade is a feasible option,

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Comment: Segment K - I prefer a route farther east.

[Dennis Rittall SWOH-20]

Response: The routing referenced (the H-1 Alternative) is analyzed in the EIS. Alternative H-1 does affect residences, one of which would have to be removed. Proposed Option 1 was preferred over Alternative H-1 due to fewer environmental impacts.

Comment: In Segment L, move the line on to state land north of Sedro Woolley.
[Ray Tompkins SWOH-25]

Comment: In Segment L, adjacent to State DNR land, where the gas pipeline is located (along the west edge)--move the line onto DNR land (rebuild). This would move the line away from housing along Fruitdale Road, and avoid exposing residents to EMF. The land is already cleared for the pipeline.
[Dean Wadsworth SWOH-12]

Response: If a transmission line were to be located on new right-of-way, it would usually be best if it is next to an existing facility such as another electrical power line or a gas line. In this case, under proposed Option 1, BPA would replace an existing power line, an action that requires no additional new right-of-way, little or no clearing inside or outside the right-of-way, few new roads, and no new crossings of the existing 500-kV line (a BPA reliability concern). The gas line option would require the purchase of new right-of-way, new roads, a considerable amount of clearing, and the crossing of the 500-kV line. BPA has looked at several location options away from the existing corridor and found none that had lower environmental impacts; they also usually cost considerably more. The option of following the gas pipeline is an unreasonable alternative.

Comment: I don't want the lines going into Sedro Woolley Substation cutting across our property. Locate it along the property line.
[Dennis Rittall SWOH-22]

Response: Proposed Option 1 replaces the existing 230-kV wood pole line immediately adjacent to the existing steel line in this location. The new towers would be located approximately opposite the existing steel structures and along fences and roads where possible.

Comment: At the last open house one of your representatives told us that BPA tries to make changes in such way as to impact the fewest number of people, avoiding populated areas. We therefore request that the Transmission Project not affect the L, M,, and N corridor segments and that the changes all be routed through the eastern corridor with a new short tie-line to the Sedro Woolley substation. This would very obviously affect the least number of people.
[Ray & Dolly Tompkins NWTP-2-67/1]

Response: BPA does include in its studies of various options/alternatives the impacts on people, and we try to minimize that impact. Impacts on people are included in the overall analyses where impacts on the environment, engineering feasibility, and costs are compared.

BPA first looks at existing transmission line rights-of-way corridors to determine whether a new transmission line could be incorporated within that corridor. Using existing corridors usually creates the least amount of overall impacts. Land use planners and regulators also advocate using existing corridors wherever possible, particularly where an existing facility can be replaced or upgraded (as this project is proposing to do by replacing the existing 230-kV line with larger structures).

For this project, BPA has studied other areas where the new facility could be located. No location was found that, from an overall perspective, had advantages over the options of replacing the existing 230-kV line. The location suggested above would follow the Monroe-Custer #1 500-kV line to a point east of the Sedro Woolley Substation and then follow a Puget Power corridor into the Sedro Woolley Substation. The new line would be entirely parallel to existing lines in this segment; and would need about 37 - 46 meters (120 to 150 feet) of additional right-of-way; additional clearing width up to 61 meters (200 feet), and additional roads in nonagricultural areas. It would be on a hillside, creating additional visual impacts, and would increase erosion potential. This location would still be near residences. This alternative is about 2.8 kilometers (1.75 miles) longer than the western corridor, and would cost about $3,000,000 more for a double-circuit 230-kV line. Because this suggestion costs considerably more and is still near residences, it will not be considered/analyzed any further. A discussion of this suggested alternative appears in the Supplemental DEIS in Chapter 2, Section D.7.

9. Undergrounding

Comment: At what point in time does it become cost effective, environmentally effective to bury the lines?

[Jon Hoover & Debra Sharp NWTP-2-98/29]

Comment: Bury the new lines within the easement using the latest EMF reduction technology.

[FAIR 94-0085/2]

Similar comments from:

[Jon & Dena Fleurichamp	*NWTP-2-50/1*
Scott Walker	*NWTP-2-57/1*
Barbara Dutro	*NWTP-2-72/1*
Marcia Leister	*NWTP-2-34/3*
David Davis	*NWTP-2-98/25*
Mark Nusslock	*NWTP-2-98/28]*

Response: Undergrounding transmission lines is technically feasible and has been done in some areas. However, it presents increased difficulties in times of outage. It also means a substantial increase in costs: 5 to 12 times as much as overhead construction.

	Overhead	Underground
500-kV Constr.	$625,000/km ($1,000,000/mi.)	$3,200,000 - $7,500,000/km ($5,000,000 - $12,000,000/mi.)
230-kV Constr. (dbl-circuit)	$410,000/km ($650,000/mi.)	$2,100,000 - $5,000,000/km ($3,300,000 - $7,800,000/mi.)

High costs are due to several reasons. For more discussion on this subject, see "Alternatives Considered and Eliminated from Detailed Consideration" (Chapter 2).

10. New Technologies

Comment: Delay the project until superconductivity is technically feasible and use direct current line [realizes this is years off].

[Dean Wadsworth SWOH-19]

Response: BPA cannot wait for unproven technology or technology that is still being studied. BPA is renowned world-wide for its excellence in technical knowledge, and uses the latest technology (e.g., the recent introduction of Static Var equipment at two BPA substations; the equipment makes our transmission system much more efficient). Delaying the project does not satisfactorily address Puget Power's or BPA's purposes and needs for the project. Superconductivity and/or direct current lines would still require new transmission lines, and, in the case of direct current, extensive, expensive facilities at each line terminal substation.

Comment: There must be a way to develop new technologies to transmit the needed power and minimize the impact upon properties adjacent to them.

[John Zylstra NWTP-2-66/2]

Response: There are currently no other means of transporting electricity from the source to where it will be used. BPA is involved in and is keeping up with the latest technologies concerning electric transmission and ways of making transmission systems more efficient. The Supplemental DEIS includes mitigation measures to reduce or eliminate impacts.

Comment: *Concerned about* health impacts of project. EMF AC would be a health problem but DC is not a health problem. Why do we not address DC in DEIS report?

[Dean Wadsworth NWTP-2-98/4]

Comment: In view of EMF, every consideration should be given to construction of Direct Current lines, as they have less EMF. Cost should not be the overriding concern--health has more value.

[Dean Wadsworth SWOH-18]

Response: The existing lines in this areas are all AC (alternating current). Direct current (DC) is not a viable alternative here because DC transmission costs are prohibitive unless large amounts of power are being transferred more than 160 km (100 mi.) between major substations. In addition, if there are tap lines or generation integrated into the line, the terminal equipment needed with the DC line is very expensive. At all of these points, the voltage would need to be transformed, as well as converted to or from AC. (See Chapter 2, Section D, Alternatives Eliminated from Detailed Consideration, Part 5, Undergrounding.)

11. Other Comments on Alternatives

Comment: *I didn't understand*: The different plans are somewhat confusing.

[Robert L. Lorenzo NWTP-02-033/2]

Response: The DEIS has been revised in order to make the different Options and Alternatives clearer.

Comment: What are the cost differences between the alternatives?

[John Thompson NWTP-2-98/23]

Response: Costs for the four Design Options (Option 4 was added) are as follows:

Option 1 - $19.8 million [proposed]
Option 2 - $36 million
Option 3 - $40 million
Option 4 - $41 million.

See sections 2.C.2 and 4.B.1 in the Supplemental DEIS for more information on the alternatives and their costs. Location alternatives described in Section 2.C.2 are considerably more expensive, as they would require additional corridor and more costly angle towers.

Comment: *I think the analysis would be better if you:* Discussed incentives to further increase conservation.

Similar comments from: *[Elaine McRory NWTP-2-68/1]*
[Dolly Tompkins NWTP-2-98/39
Charlotte Sherman NWTP-2-98/40]

Response: Conservation is covered in the Supplemental DEIS in Chapter 2, Section D.4. Technical studies have shown that a conservation alternative would not eliminate the need for this project. In fact, local load reductions would actually *contribute* to the transmission problems that could occur during periods of high local generation and north-south power transfers from Canada to the Pacific Northwest.

C. DESIGN

Comment: The location of a culvert washed out and a trail that could be used or access located on an air photograph?

[Bill and Peggy Mohr BOH-31]

Response: The information provided was forwarded to BPA access road designers.

Comment: More consideration should be given to the design and location of the line to reduce exposure to EMF (moving it away from residences for example).

[Dean Wadsworth SWOH-17]

Response: EMF is an important issue to BPA. EMF is considered along with other environmental issues and costs. The project will be designed for lower EMF levels. The lower EMF design results are reflected in the EMF calculations and results shown on EMF Tables and Graphs provided in the Supplemental DEIS.

Comment: We further request that you redesign the towers. Current tinker toy design is not only ugly to an extreme, it is labor intensive to construct. Please have one of our university engineering schools accept the challenge to redesign towers for both beauty, function and cost effectiveness; or, install only the improved appearance transmission line towers.

[Ray & Dolly Tompkins NWTP-2-67/5]

Response: Concerning the cost effectiveness of the existing and proposed towers: the towers, as designed, with the design criteria in place at the time of design, use the most economical design from an overall perspective including material, assembly, and erection. BPA is a leader in the utility industry and is noted for its economical designs.

Other improved appearance structures have also been designed by BPA and other utilities. Although these structures can cost considerably more, they can be visually effective in some limited situations. The improved appearance structures that BPA has used in the past include tubular steel poles, which look totally different from the existing 500-kV structures in the corridor and which are so massive that they would be seen from long distances. By contrast, the 230-kV lattice structures proposed for this project are similar to the existing structures and would more readily blend into the background. The new structures would be darkened to reduce the visual impact. Because the new lattice structures as proposed are similar in appearance to the existing structures, blend more readily into the background from longer distances, would be darkened, and cost less, improved appearance structures will not be considered for this project.

Comment: As a representative of N.W.P - I am concerned with the areas where our gas lines have to be crossed with heavy equipment for your modifications. I have to find out maximum weights of vehicles with the material loaded on; and areas you would like to cross our R.O.W.; so we can determine how much cover will be needed to cross our pipelines.

[Dan Munkres NWTP-2-51/1
Northwest Pipeline Corporation]

Response: The access road design process started in the summer of 1994. The Northwest Pipeline Corporation will be contacted to coordinate information to determine the adequacy of the existing road system, its surface condition, and drainage crossings.

Comment: I've been led to believe that the wood pole structures that are there are 115 thousand [sic] kilovolts, not the 230 that they talk about in the EIS. That's by the area rep that's been out there over the years. He comes through and he gets to know these people, and it was always talked about as 115 kilovolts, not 230.

[Steve Wight NWTP-2-57/15]

Response: On BPA's portion of the project, the line being removed is an existing 230-kV line. Puget Power's portion includes 115-kV lines.

Comment: Why can't existing towers be utilized to carry more than one circuit?

[Mark Nusslock NWTP-2-98/31]

Comment: Why not turn No. 2 line to double-circuit? In order to avoid taller structures, visuals, EMF.

[Mark Nusslock NWTP-2-98/7]

Response: The existing towers were designed to carry one circuit each. Adding another circuit would require additional structural strength to support the additional conductors. Also, minimum clearances must be maintained from each conductor to the supporting structure, between the phases of each circuit and between circuits. The modifications that would be required to provide for the additional circuit would be extensive and would basically be the same as rebuilding the line.

Comment: If you read it [the EIS] real close, it says double lattice. What that means is it's double that [the voltage]. You take the 500, and you double it. It's a million kilovolts. It's 500 on each side. so they're replacing 115 thousand with a million kilovolts. I believe that's kind of misleading. And I don't appreciate that.

[Steve Wight NWTP-2-57/16]

Response: The project as proposed and as presented in the main part of the document is to replace the existing BPA 230-kV (230,000-volt) line with a double-circuit 230-kV (230,000-volt) designed line. That is two single-circuit 230-kV lines on one set of towers. Electrically, you cannot "add" the two voltages together; they are still separate circuits or lines. There *is* a doubling/increase of the amount of electricity or watts that the double-circuit structures carry as compared to a single-circuit structure.

Comment: Why not redesign the No. 2 line for lower noise? To avoid taller structures, visuals, EMF.

[Mark Nusslock NWTP-2-98/8]

Response: The Monroe-Custer # 2 line could be redesigned for lower noise at a cost of at least $8,000,000. Another circuit would still be needed in addition; therefore a double-circuit structure would have to be constructed within the corridor, replacing an existing line (such as the proposed double-circuit 230-kV line).

Comment: What is "safety" height requirements for the 230-500 kV conductor?

[Cary Schmidt NWTP-2-98/12]

Response: The minimum design ground clearance is 8.1 meter (26.5 feet) at maximum final sag (lowest point) of the conductor.

Comment: Using proposition #1, I would prefer shorter towers (122' high). [The commenter apparently lives in Segment B.]

[Robert A. Burnett NWTP-04-011]

Comment: In Segment L, why don't you build new towers the same height as the existing steel towers?

[Ray Tompkins SWOH-11]

Comment: *You could improve the choices by:* using existing right-of-ways whenever possible and reducing the number and height of proposed lines.

[John Zylstra NWTP-2-66/1]

Response: In order to rebuild an existing 230-kV line to become two 230-kV lines, without requiring new right-of-way, the height of the structures must be taller. The benefits of reduced right-of-way clearing, erosion and property encumbrances affect the impacts of added tower height especially when considering that the new structures will be about the same height as the existing 500-kV towers in the corridor. Please see the Visual Resources section in Chapter 4 for further discussions on tower heights.

D. PUGET POWER'S PORTION

Comment: The Bellingham School District has plans to build a new high school in the Dewey Road area. We would like to know how this project will affect those plans. Has the School District been contacted regarding your proposal? Include their plans in your EIS.

[Kate & Martin Eifrig NWTP-2-62/9]

Comment: Bellingham School District land at Mount Baker Hwy., with pipeline alternative should be addressed.

[Clare Fogelsong NWTP-2-98/43]

Similar response from: *[FAIR 94-0085/10]*

Response: Puget Power already operates and maintains an existing 115 kV transmission line and distribution facilities adjacent to the Mt. Baker Highway near the School District property. There would be no change in land use or impacts as a result of rebuilding the transmission line and operating it at 115 kV.

Comment: Using the land along that [I-5] corridor would be more realistic than going through the neighborhoods of Orleans and Pacific and Moore Street.

[Mike Kaufman NWTP-2-57/19]

Response: Present Federal Highway Administration guidelines would not allow the placement of a transmission line within the I-5 corridor. A new transmission line corridor would have to be located next to I-5 on private, primarily residential properties between Sunset and Carolina Streets. Local government representatives and interested members of the public who are addressing Growth Management Act issues have directed utilities to use existing transmission line corridors, wherever possible. Moreover, policy direction provided by the Washington State Department of Community Development encourages use of public road right-of-way for utility facilities [WA 365-195-320 (2) (g)]. Puget Power has proposed to rebuild an existing transmission line within public road right-of-way instead of creating a new corridor in an area that is predominantly residential.

Comment: The pipeline alternative may be desirable because it moves the 115-kV line away from denser development. However, the City will have to receive more analysis of impacts to wetlands, the Bay to Baker Trail, pedestrian access, EMF/EMR impacts, and the proposed high school at McGrath Road, McLeod Drive, and Mt. Baker Highway prior to a decision.

[Patricia Decker NWTP-2-90/2
City of Bellingham, Planning & Community Development Dept.]

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-30

Response: If the pipeline alternative is chosen (not currently proposed), Puget Power will provide additional detailed analysis of potential impacts on wetlands as part of any project-specific permitting required by the City of Bellingham and Whatcom County and work with these governments to minimize potential impacts to wetlands. Wetland specialists from the city and county have met with Puget Power to define the information that is required and the areas to be studied. Puget Power is evaluating transmission line structures and their potential field locations in an effort to avoid or minimize any impacts on wetlands. In most cases, wetlands can be spanned, with the poles located in uplands or in wetland buffers.

Construction and operation of the pipeline alternative will not affect the plans for a Bay-to-Baker Trail. The abandoned railroad right-of-way, within the area proposed for the transmission line, presently has a cleared 6.1-m (20-ft.) wide road. Much of this area was regraded as part of a recently installed natural gas pipeline. The proposed transmission line would not be located within the road/trail.

The proposed pipeline alternative would not be located anywhere near the proposed high school at McGrath Road, McLeod Drive, and the Mt. Baker Highway. McGrath Road and McLeod Drive do not parallel or intersect the route of the pipeline alternative. The existing BPA-Bellingham #2 transmission line (the line to be rebuilt) does cross the Mt. Baker Highway at its intersection with the unimproved St. Clair Street right-of-way, but there are no known plans for a high school at or near this location.

Comment: The Orleans route alternative appears to bring lines closer to residential uses along Carolina Street. What are the impacts of changing the location of this line? Why does it need to be moved? Puget Power should install additional landscaping around the Puget Power Bellingham Substation as mitigation against visual impacts.

[Patricia Decker NWTP-2-90/5
City of Bellingham, Planning & Community Development Dept.]

Response: Puget Power has not identified any significant impacts in connection with changing the location of this line. In proposing to relocate the line, Puget Power was attempting to address an earlier expressed concern by the City of Bellingham to relocate electrical facilities on city-owned property. Puget Power's existing BPA Bellingham #1 transmission line crosses over the Whatcom County Transit Authority bus barn and City of Bellingham maintenance facilities between Carolina and Virginia streets. By relocating the #1 transmission line along Carolina Street for one block and turning south on Nevada Street before entering the substation, the utility would address the concern as expressed by the city. Puget Power will provide landscaping in accordance with appropriate regulatory requirements.

Comment: Page 4/105 states that the proposed pipeline alternative uses an existing pipeline right-of-way. Therefore, this pipeline may go through wetlands that the original pipeline did not avoid.

[Vernice Santee NWTP-2-99/2
State of Washington, Department of Ecology]

Comment: Both indirect and direct impacts to wetlands should be avoided or minimized to the greatest extent possible. Measures that would avoid and minimize wetland impacts, which should be adopted, include: minimizing the construction footprint, revegetating the construction footprint after pipeline placement, and placing check dams in the pipeline trench to avoid altering hydrology of wetland sites.

[Vernice Santee NWTP-2-99/1
State of Washington, Department of Ecology]

Response: There may be some confusion about the Puget Power's pipeline alternative. No construction of a pipeline or buried transmission line is proposed by this project. The pipeline alternative refers to an alternative overhead transmission line route that parallels an *existing* pipeline/railroad grade.

Direct impacts on wetlands will be avoided to the greatest extent possible. Detailed siting of new structures and access roads would be coordinated with environmental staff to avoid/reduce disturbance of wetlands and floodplains (see Mitigation).

Comment: Permits which will be required by the City of Bellingham include:

1 A Shoreline Management Permit for any work within 200' of a Shoreline of the State.
2 A wetland delineation, field notes, and a wetland permit application for any work within wetlands. Impacts on wetlands should be avoided. If avoidance is not possible, mitigation prior to the impact and restoration after the impact will be required.
3 A Clearing or Utility Construction Permit if cutting, clearing, or removal of vegetation will occur on rights-of-way which have not been fully developed.
4 If the Pipeline Alternative is selected, a Conditional Use Permit for utility line expansion outside of a public right-of-way in a residential, single-family zone.

[Patricia Decker NWTP-2-90/6
City of Bellingham, Planning & Community Development Dept.]

Response: If activities are proposed in wetland or shoreline areas which require permits from the City, Puget Power will apply for such permits. Other land use and construction permits may be required, but the need for such permits cannot be determined until a preferred course of action is selected from the alternatives under consideration.

Comment: Rezoning of Briton Road area should be considered.

[Clare Fogelsong NWTP-2-98/44]

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-32

Response: Puget Power is not considering any activity in this area which, to Puget Power's understanding, would require a rezone.

Comment: Should be more coordination between utilities (power, sewer, telephone, etc.) for construction related projects. [directed towards Puget]

[Jon Hoover & Debra Sharp NWTP-2-98/45]

Response: This is a joint project between BPA and Puget Power, and follows several years of joint study of the utilities' needs for additional capacity and reliability. Puget Power actively coordinates with other utilities when improvements must be made to electrical facilities or to other utility infrastructure. Joint-use projects and facilities serve the public well and serve to minimize costs and impacts for everyone.

Comment: The existing line has a distribution underbuild. If the upper circuit is removed as in Options 1 and 2, then Puget Power could consider removing the distribution line also. Perhaps the distribution line could be undergrounded. (Near BPA Bellingham Substation.)

[Mark Weinberg NWTP-02-099B/1]

Response: Puget Power must maintain the existing distribution facilities adjacent to the Mt. Baker Highway to serve existing customers. Puget Power undergrounds distribution lines as a service subject to, and in accordance with, rates and tariffs on file with the Washington Utilities and Transportation Commission.

E. RATES/INTERTIE USE

Comment: What will the impact of your new project be upon our rates?
[Ray & Dolly Tompkins NWTP-2-67/6]

Response: The proposed project will add to BPA's and Puget Power's transmission system costs, but the added costs are relatively small compared to the costs of existing facilities, so there may not be any significant change in rates due to construction costs of this project alone. For both BPA and Puget Power, the proposed project will increase opportunities to obtain power from Canada. Transactions over the increased capacity resulting from the project will contribute to total costs, and therefore to power rates for either BPA's or Puget Power's customers. The effect of those transactions will depend on the costs compared to the costs of alternative power supplies. If transactions over the increased capacity are less costly than alternatives, the effect of the project on rates will be to reduce or delay rate increases that would result if alternative transactions were made instead.

Comment: How will the increasing population of British Columbia affect the long term availability of Canadian power?
[Patricia Decker NWTP-2-90/7
City of Bellingham, Planning & Community Development Dept.]

Response: Increasing population in British Columbia will add to the demand for power, requiring the development of additional energy resources to meet the demand. The availability of power for export from British Columbia will depend on the total opportunities for the development of power resources and the benefits to British Columbia which may result from exporting power to the United States. Under the power export policy established by the government of British Columbia in 1993, power exports are permitted under conditions that provide benefits to the people of the province and protect the environment. Long-term deliveries of power from British Columbia to the United States can be expected to continue, consistent with the terms of the export policy, even though the population of British Columbia continues to grow.

Comment: Intertie Use Alternatives. The electrical system improvements jointly proposed by Puget Power and BPA are clearly articulated in the DEIS. BPA and Puget Power are proposing to upgrade their respective transmission systems in Whatcom and Skagit counties. The objective of the action is to address reliability and capacity needs for both BPA's and Puget Power's transmission systems. Both utilities would have responsibilities in implementing this objective.

However, the DEIS discusses use "alternatives" reserving, in one case, "the entire estimated 850 MW increase of transfer capacity exclusively for BPA use, " and in another case, reserving the increased transmission capacity to an unspecified consortium of nonfederal users. These may be appropriate goals in some other context. They are not, however, alternative means of achieving the proposal under environmental review. As such, they are not "alternatives" for purposes of NEPA and add nothing to the analysis of the document.

Under NEPA, the goal of the action in question limits the universe of alternatives to be considered. Citizens Against Burlington v. Busey 938 F.2d 190, 195 (D.C. Cir.), cert. denied, 112 S.Cr. 616 (1991). It is not an alternative, reasonable or otherwise, to assess a course of action that achieves a goal other than the agency's proposed goal. Moreover, agencies should not use the alternatives section of an EIS to "engage in the empty exercise of generating and 'considering' countless alternatives, even alternatives known to be unacceptable at the outset." Idaho Conservation League v. Mumma, 956 F.2d 1508, 1522 (9th Cir. 1992) (citations omitted). The "use alternatives" included in the DEIS are clearly "unacceptable at the outset" because they do not achieve, or even approximate, the proposed action's clear objective. The DEIS otherwise assesses a more than ample range of reasonable alternatives. Accordingly, Puget Power suggests that the discussion of use alternatives be eliminated or revised for relevancy to the stated goal proposed for environmental analysis.

[John Campion NWTP-2-84/5
Puget Sound Power & Light Co.]

Response: The Intertie Use Alternatives discussion has been changed in the Supplemental DEIS. In view of the joint BPA/Puget Power sponsorship of the proposal, it was not practical nor did it make sense to consider such alternatives. The No Action alternative describes the responses that BPA or Puget Power might make to obtain increased intertie capacity if this proposal were not carried out. The statement of need in the Supplemental DEIS has two parts: to increase the capacity to import electric power from Canada over the existing intertie and to facilitate the movement of power through and out of the area during summer/fall. The former part is the basis for the discussion of Intertie use alternatives.

Comment: Have the regulations on wheeling costs changed? Is Puget Power going to get better rates from BPA?

[John Thompson NWTP-2-98/46]

Response: The Energy Policy Act of 1992 has had the effect of opening up access to transmission facilities among utilities and power producers. BPA is currently involved in revising its rates. Transmission rates will probably change, but would apply uniformly to all customers Puget Power, if this project is built, will have their own wheeling path from Canada to Sedro Woolley.

Comment: I *think the analysis would be better if you*: detailed description of power agreements with Canada that exist now and are planned for the future, considering the present political situation on both sides.

[Fred Tanner NWTP-2-80/2]

Response: These matters are addressed by the discussion section under Intertie Use Action in Chapter 2, and in Appendix A, Power Marketing.

F. CONSTRUCTION

Comment: If the line is built by a contractor who makes the lowest bid, will the line be safe? [tree hazard]

[Tom Lingbloon BOH-36]

Response: BPA chooses the contractor that will do the best job, taking several factors into consideration, including costs. The contractor of choice may not necessarily be the lowest bidder. The transmission facilities are designed with safety in mind. The contractor who puts up the facilities must follow BPA specifications, thereby ensuring that facilities are safe for their surroundings and the public.

Comment: Minimize crop damage during construction. Coordinate access with property owners.

[Peggy & Bill Mohr BOH-24]

Response: BPA does coordinate access road location with landowners to minimize impacts to crops. BPA uses existing roads when possible, feasible, and cost-effective. BPA also pays for crop damage if construction needs to take place during the growing season. If soil compaction is extensive, BPA will consider subsoiling to loosen the soil.

Comment: Remove timber from the right-of-way after cutting trees. Take care of brush so that pasture is not destroyed.

[Peggy & Bill Mohr BOH-25]

Response: In order to keep costs down, BPA uses lop-and-scatter methods to dispose of cut timber. Trees and branches are cut and laid on the ground, so that the wood decomposes naturally. In some areas (e.g., near residences), BPA will chip the trees and limbs and scatter the chips inside the right-of-way. Either one of these methods is currently used in the project corridor for maintenance purposes. BPA prefers low-growing brush inside the right-of-way for erosion control and to slow the growth of young trees. It is up to the landowner to maintain a pasture on the right-of-way and to keep the brush down if they so desire. BPA works with the landowners to take their concerns into account during the taking of danger trees and brush clearing for maintenance/reliability.

Comment: Will BPA leave the wood poles for the landowners [fence posts]?

[Peggy & Bill Mohr BOH-30]

Response:
Generally not. Poles are sometimes salvaged and reused on other projects. Also, poles are treated to prevent deterioration. As a result, they must be disposed of in an environmentally approved manner.

Comment: When will project construction start?
[Kathy Klemmer BOH-10]

Comment: Will you begin in 1994?
[Vernon & Elaine Derr NWTP-2-35/1]

Response: If BPA decides to build a transmission line, the project construction would be scheduled to start in October 1995 for the Bellingham Substation, July 1996 for the Custer to Bellingham transmission portion and April 1997 for the Bellingham to Sedro Woolley transmission line portion with an overall energization date of October 1997 for the entire project.

Comment: If this process goes along to the construction phase, does BPA have to have preconstruction meetings with the county to discuss their plans as we do as home owners when we build a home? And if so, can the public come to those meetings?
[Steve Wight NWTP-2-57/33]

Response: BPA will be coordinating with the counties and individual landowners. These will not be public meetings. If individuals have concerns, they can contact BPA. The project manager and /or team members will meet with individuals to discuss their individual concerns at their request.

G. LAND USE

Comment: When new line(s) go in, how close can a residence be?
[Robert & Martha Knuth NWTP-2-98-30]

Response: BPA has no land use limitations *outside* the transmission line right-of-way boundaries which are described in BPA's easement documents. For this BPA corridor, the edge of the right-of-way is between 19 and 23 meters (62 and 75 ft.) from the center of the outside transmission line. All easement documents are recorded in the counties where they were acquired, and should be referenced on Schedule B of the title policies for properties which the transmission line crosses.

Comment: Growth Management Act. The DEIS should be updated to address efforts underway by local jurisdictions to comply with the Growth Management Act ("GMA"). Puget Power has submitted detailed plans to each jurisdiction planning under the GMA which reflect its proposed improvements. These submittals will assist local jurisdictions in formulating "utilities elements" for their comprehensive plans which must, as a matter of law, designate the general location of existing and proposed utility facilities. By submitting these plans, Puget Power has ensured the consistency of its portion of this project with new comprehensive plans and development regulations. The consistency of BPA's proposed improvements with new GMA plans are not discussed in the document.
[John Campion NWTP-2-84/8
Puget Sound Power & Light Co.]

Response: Whatcom County is in the midst of preparing the utilities element of its Comprehensive Plan, a requirement of the Washington Growth Management Act. To ensure consistency between the local utilities element and this proposed project, a BPA representative regularly attended meetings of the Citizen Advisory Committee and kept them informed of this proposal. While the utilities element is in draft form now, the proposal is consistent with its policies of using existing corridors whenever possible and encouraging joint use of utility corridors.

Comment: How will this affect Hwy 9 expansion?
[Mary Seamster NWTP-2-98/42]

Response: According to Washington's Department of Transportation (DOT), the proposed expansion of SR9 is on hold and no longer scheduled because of funding constraints. In any case, that expansion would have been *south* of Sedro Woolley, not near BPA's proposed project. The only DOT project within the vicinity of BPA's project would be on SR9, about 1.6 kilometer (1 mile) north of Sedro Woolley. The Department plans to widen the shoulders and flatten slopes in the road. These improvements are in the State's 6-year plan. The BPA proposal would not affect those changes in SR9.

H. PERMITS/LAWS

Comment: The proposal violates the Eminent Domain Law and the Designated Forest Land Act of 1971.

[Charles F. Lappenbusch Sr. NWTP-04-002]

Response: The proposal does not and may not violate the eminent domain law. Eminent domain allows a governmental agency to take any property that the agency needs for its charter purposes. Although BPA does not plan to take any additional property for this project by eminent domain, BPA could do so if it deemed that there is a need for a taking. Landowners would be offered fair market value for new land rights (if needed), established through the appraisal process.

Although we found no reference to a "Designated Forest Land Act of 1971," there was legislation in 1971 relating to Timber Taxation. More recently, in 1984, the Washington Legislature passed the Timber and Forest Lands Act, RCW 84.33. Under RCW 84.33.010, timber was removed from *ad valorem* taxation and, instead, subjected to a tax based on its stumpage value at the time of harvest. The land remains subject to the *ad valorem* tax. In order to qualify for this special taxation system, the property has to meet the definition of forestland set forth in RCW 84.33.100(1): "Forest land is synonymous with timberland and means all land in any contiguous ownership of twenty or more acres which is primarily devoted to and used for growing and harvesting timber and means the land only." Power lines are not considered to convert lands out of the forestland designation. Further, the Washington Forest Practices Rule WAC 222-34-050(3) states that reforestation is not required for utility rights-of-way for initial clearing or reclearing of utility rights-of-way in actual use for utility purposes or scheduled for construction of utility facilities within 10 years from the date of completion of harvest, provided that if the scheduled facility is not completed, the area shall be reforested within 1 year.

Comment: Will BPA get a County permit to build the new line?

[Susanne Jenkins NWTP-04-012]

Response: BPA, as a Federal agency, does not go through a local permitting process. BPA does work very closely with local and State offices taking their concerns into account.

Comment: Whatcom County Initiative. Some alternatives were characterized in the DEIS as being "unreasonable" because they were determined to be inconsistent with Whatcom County's current zoning code. Puget Power does not take issue with the decision to exclude these alternatives from detailed analysis; NEPA requires only a reasonable--not an endless--range of alternatives to be so assessed. However, the conclusion that these alternatives are "unreasonable" may reflect a misunderstanding of the zoning code. In order to construct 230 kV facilities in portions of Whatcom County, Puget Power theoretically could apply to have such areas rezoned as suitable for industrial development. Alternatively, appropriate utility corridors could be designated under soon-to-be-adopted comprehensive plans, with appropriate implementing development regulations. Clearly, Puget Power is not proposing any such actions in the context of the project in question. But the mere fact that such actions are not proposed does not render them infeasible, nor does it render alternatives dependent upon such actions "unreasonable" for purposes of NEPA.

[John Campion NWTP-2-84/7
Puget Sound Power & Light Co.]

Response: Although we recognize Puget Power's ability to apply for rezoning, the existence of the current ordinance is only one of a group of reasons for not seriously considering some alternative plans in greater detail (as shown in the Supplemental DEIS).

Comment: Puget Power questions the reference to Washington State Energy Facilities Siting Evaluation Council (EFSEC) at page 1/12 of the DEIS. Is this a reference to a memorandum of understanding between BPA and EFSEC? Puget Power is not aware of any EFSEC jurisdiction over its portion of the project.

[John Campion NWTP-2-84/4
Puget Sound Power & Light Co.]

Response: This reference (in response to a Memorandum of Understanding between BPA and the State of Washington) has been deleted because the State does not have authority over the decision on whether to proceed with the proposed BPA actions.

Comment: I asked Mr. Langager whether he had an opportunity to read Chapter 4 of the EIS, Consultation, Review, and Permit Requirements. He said he had, but that this chapter did not tell him what environmental impacts required permitting and which did not.

[Craig Langager (from conversation) NWTP-2-56/1]

Response: The requirements presented in the Consultation, Review, and Permits section are those which are based on potential impact situations and which apply to this proposed project. These requirements have been established in order to minimize potential impacts,

not to "permit" impacts. Not all potential impacts are subject to permitting (e.g., visual); those that are subject, are discussed in Chapter 4.

Comment: In November of 1993, the voters of Whatcom County amended and repealed portions of the Whatcom County Critical Areas Ordinance ("CAO"). Reference in the DEIS to portions of the CAO that are no longer in effect should be deleted.

[John Campion NWTP-2-84/9
Puget Sound Power & Light Co.]

Response: The DEIS has been revised to delete these references.

Comment: Does BPA have to acquire a Whatcom County Permit?

[Mark Weinberg NWTP-02-099B/2]

Response: Generally, no. The county does not have permitting authority over Federal agencies. However, Congress may give authority to states under a particular piece of legislation. For example, under the Federal Coastal Zone Management Act, individual states have been given some implementation authority. Additional information on this is in the Consultation, Review, and Permit Requirements section of the Supplemental DEIS (Chapter 4).

I. WATER/EROSION/SOILS

Comment: The area has extremely high landslide and erosion potential. Minimize soil disturbance during construction.

[Bonnie Morehouse BOH-3]

Response: See responses to comments [FAIR 94-0085/11] 9/54 and [Fred Miller NWTP-2-45/1] SDEIS p. 9/60.

Comment: The Lake Whatcom watershed provides a water source to 200,000 people. Constructing a new line is a major construction project. Soils are red clay, and runoff goes straight into the lake.

[Tom Lingbloon BOH-37]

Response: Soils in the Lake Whatcom watershed have developed in a variety of geologic materials. These soils are generally medium-textured, with a relatively even mix of sand, silt, and clay, in addition to some gravel. Although surface run-off from undisturbed area soils is generally rated slow to medium, construction-related disturbances can cause run-off, erosion, and sedimentation rates to increase. To minimize disturbance, most construction activities will occur within an existing transmission corridor and (except for the North Shore Alternative) new road construction would be kept to a minimum. Proposed mitigation would minimize run-off, erosion, and sedimentation over the life of the project. For additional information, please refer to the permits section in Chapter 4 (Section 5, Permits for Discharges into Waters of the United States) for information on the National Discharge Elimination System (NPDES).

Comment: *We think the analysis would be better if you:* Discuss in greater detail the plans for maintaining the water quality (i.e., streams and creeks that feed Lake Whatcom). This is of particular concern in view of the fact that many families along Lake Whatcom pull their drinking water directly from the lake. Additionally, as you know, Lake Whatcom is the drinking water source for approximately half of the county.

[Kate & Martin Eifrig NWTP-2-62/5]

Similar comment from: *FAIR 94-0085/7]*

Response: Please note that the Water Quality section of the DEIS has been revised to show in greater detail how BPA plans to maintain water quality. Water Quality will be maintained through the use of Best Management Practices that will be detailed in a Storm Water Pollution Prevention Plan.

Comment: There should be monitoring built into the scope of work. There should be monitoring of water quality. There should be monitoring of streams. There should be some hydrologic models cast now as well hydrologic models cast in the future about what kinds of runoff are we getting from these slopes.

[Fred Miller NWTP-2-57/30
Friends of Lake Whatcom]

Response: In preparation for construction, BPA will prepare a Storm Water Pollution Prevention plan to be consistent with the National Pollutant Discharge Elimination System permit (see the Consultation, Review, and Permits section of Chapter 4). The thrust of the plan would be to implement and maintain erosion control measures during construction. To determine whether the mitigation measures are working to keep sediment from leaving the construction sites, monitoring inspections would be done at specific times as outlined by the permit (at regular intervals, and immediately after storm events).

Comment: Another question is the placement of some of these towers. There's people that live along this corridor that drink water out of wells that are right next to the easement now. All this construction and the construction of new towers will be within a 100-foot radius of some of these wells. Has that ever been addressed as a problem under the regulations you have in the county? [well head protection zone]

[Steve Wight NWTP-2-57/34]

Comment: The project area appears to pass through the Tribe's recently delineated wellhead protection area (WHPA) for its Helmick Road Reservation Area (map enclosed). The risk of contamination of the aquifer for this project appears to be low; however, the plans should depict the information regarding the WHPA in case of a construction related incident that could lead to the potential contamination of the aquifer.

[Doreen Maloney NWTP-2-88
Upper Skagit Indian Tribe]

Response: Please note that the Water Quality section and the Safe Drinking Water Acts discussion in the Consultation, Review, and Permits section have been revised to address private wells and any measures that may be necessary to meet regulations for public wells. There are no regulations for constructing near private wells. However, BPA will work with concerned landowners who may have wells near the project to determine whether there is a need to take measures to avoid possible impacts.

Comment: Based on our review, we have rated the draft EIS EC-2 (Environmental Concerns--Insufficient Information). Our concerns are based on the project's impact on water quality. The draft EIS was very thorough in the presentation of site-specific wetland and water quality impacts. This level of detail is very helpful and is an important

component of a complete impact analysis. However, it lacks a reference to a monitoring program that will help to ensure compliance with state Water Quality Standards.

[Kathy Veit NWTP-2-89/1
U.S. Environmental Protection Agency]

Comment: The EPA would like to see the EIS focus more attention on base-line monitoring measurements of water resources. These would provide a detailed description of the existing physical, chemical, and biological characteristics of streams, lakes, and other water bodies in the planning area. The EIS should provide a quantitative basis to judge whether physical and chemical parameters, such as temperature, turbidity, and sediment accumulation, will be kept at levels that will protect and fully support designated uses and meet Water Quality Standards under each of the action alternatives. The state's identification of water bodies with impaired uses (found in the state 303(d) report), as well as the magnitude and sources of such impairment, should also be included.

The monitoring plan should include types of surveys, location and frequency of sampling, parameters to be monitored, indicator species, budget, procedures for using data or results in project implementation, and availability of results to interested and affected groups.

The EIS should describe the feedback mechanism which can compare baseline data with monitoring results to adjust standard operating procedures, monitoring intensity, and protocol at first detection of adverse effects. Provision of such an adjustment process ensures that mitigation strategies will improve in the future and that unforeseen adverse effects are identified and minimized.

The EIS should include a discussion of monitoring for each resource category determined to be significant through the scoping process including fisheries and water quality. A properly designed monitoring plan will demonstrate how well the preferred alternative resolves the identified issues and concerns by measuring the effectiveness of the mitigation measures in controlling or minimizing adverse effects.

[Kathy Veit NWTP-2-89/2
U.S. Environmental Protection Agency]

Response: BPA has been working with EPA in addressing stormwater runoff issues; we believe that an alternative approach addresses the concern. Because this project would be covered under the statewide National Pollution Discharge Elimination System (NPDES) general permit for storm water discharges associated with construction, BPA does not feel that water sampling (suggested in the comment) is necessary. The NPDES permit requires a Storm Water Pollution Prevention plan detailing best management practices that will be used during the construction period, but it does not require in-stream monitoring before, during, and after construction. The plan will include monitoring the construction sites during or immediately after a rain event to ensure that water runoff is not turbid. If erosion control measures are not working and sediment is leaving the site, then immediate

action will be taken to rectify the problem. BPA is working with the EPA on preparing this plan.

Because of the sensitivity of the water quality along the Lake Whatcom area, BPA plans to monitor by conducting follow-up visits (to be determined in the SWPP Plan) along the project for 3-5 years after completion of the project to ensure that the right-of-way has stabilized and, if not, to determine what additional measures might be needed.

Comment: Update watershed/water quality data/references.

[Fred Miller NWTP-2-98/18
Friends of Lake Whatcom]

Response: Reference information on water resources have been updated in Chapter 7 of the Supplemental DEIS.

Comment: In their proposal to upgrade the power lines by installing new lattice steel towers and by building a new road, our anxiety centers around the fact that BPA has not monitored this water run-off and soil de-stabilization. There are no specific facts or documentation in the EIS draft on these sensitive existing conditions.

[FAIR 94-0085/11]

Response: BPA is aware of the history of erosion problems along the east side of Lake Whatcom. Typically, BPA does not do detailed monitoring of soils and water run-off in the early EIS/decision-making stage of the project because it would involve collecting data for a number of seasons ahead of the EIS and before alternatives have been developed. If culverts should be necessary, BPA might run computer models for the drainage to determine appropriate culvert sizes and would work with the Washington Department of Fisheries to obtain Hydraulic Permits.

During construction, BPA will follow Best Management Practices, which will be outlined in a Storm Water Pollution Prevention Plan (developed in conjunction with EPA and the State) to control erosion. BPA also plans to do follow-up visits along the transmission right-of-way for 3-5 years after completion of the project to ensure that the right-of-way has stabilized, and, if not, to determine what additional measures may be needed.

Please note that many of these practices and regulations are new since the existing transmission lines were constructed (the period between 1945 and 1972).

Note also that failure of existing road drainage structures and the erosion of existing access roads are addressed under the Mitigation section for Water Quality. Except for the North Shore Drive Alternative, new roads would not be constructed. The existing roads would be upgraded to accommodate heavy construction equipment. Failed culverts and

surface drainage structures would be re-designed and replaced. Badly eroded sections would be repaired and improved to prevent future road failures. For more information, please refer to the section on National Pollution Discharge Elimination System (Chapter 4, Consultation, Review, and Permits).

Comment: Chapter 4, page 83 states: "Impacts would primarily be caused by construction, and would be short-term with successful erosion control and other mitigative measures. However, with ineffective mitigation, impacts would be long-term and consequences of erosion, sedimentation, and soil compaction could affect other resources." As has been stated above, our experience has been that BPA's record of performance in the past has been one of "ineffective mitigation," which has affected other resources. What assurances do we have that your future actions will be any more responsible than those demonstrated in the past?

[Larry Wasserman NWTP-2-52/4
Skagit System Cooperative]

Response: EPA's Storm Water Pollution Prevention Plan, which will be developed for this project, requires BPA to design a run-off prevention plan before starting line construction. The Federal NPDES law provides for on-site monitoring during and after the completion of construction. This, combined with a joint effort between BPA and the State of Washington to design an adequate access road transportation plan and road closure plan, will reduce and may even eliminate unauthorized use of State and BPA on-right-of-way access roads. Soil erosion associated with power-line construction and inadequate powerline right-of-way management will be minimized. See also responses to comments above.

Comment: Is the BPA ready to demonstrate that mitigation will be effective by correcting the significant problems with the present system, or are your mitigation plans merely claims which will allow this proposal to go forward?

[Larry Wasserman NWTP-2-52/5
Skagit System Cooperative]

Response: BPA intends to work with each private land owner, Washington State, and the counties crossed by the project to correct past right-of-way management deficiencies. The BPA Access Road Engineer has met with a representative of Washington State DNR to review the road system above Lake Whatcom. The plan is to close permanently those roads not needed to construct the new line and to maintain the existing facilities.

A review of existing drainage structures along the right-of-way has been completed and deficient structures will be replaced. Before any drainage structure work is begun, the State of Washington will conduct a hydraulic permit review of each installation.

Comment: [reference to Chapter 4, page 113] If "bridges and arch-bridges are preferred to culverts", why have they been avoided in this local area?

[Larry Wasserman NWTP-2-52/7
Skagit System Cooperative]

Response: The next sentence following "Bridges and arch-culverts are preferred to culverts." now reads as follows:

> However, where appropriate, culverts should be big enough to handle approximately 50-year floods, and designed to allow for fish passage.

All installations (new or replacement of existing units) will be approved by the State of Washington through the Hydraulic Permitting process. Culvert designs will be large enough to pass a 50-year event.

Comment: Access Road: Not enough information in the DEIS on the specifics of road design. The culvert on BPA's access road has failed twice during flooding periods causing sand and silt to be deposited in [commenter's] yard and the lake causing a small island to be formed. [Commenter feels that] BPA did not design the culvert to be large enough to handle the runoff during heavy raining periods. The rock that was placed by BPA was also inadequate, river rock that was too small. BPA should analyze the runoff and put in the appropriate sized culvert and place large angular type rock in place of the river rock such that the rock stays in place.

[Craig Langager NWTP-2-53/4]

Response: Each new culvert, and the existing culverts that are to be replaced, will be sized after a hydraulic study is made of the drainage in which the culvert is placed. New installations will be based on a 50-year storm event rather than the 25-year event called for in the Access Road Manual. Each design will be approved by the State of Washington through the Hydraulic Permit process.

If a property owner or a land manager such as the State requests that an existing culvert be modified or replaced, the existing installation will be reviewed and corrected if necessary.

Comment: The DEIS lists several mitigation ideas (page 4/86) to control erosion and run-off such as revegetation, culvert installation and water bars. In addition to these items, the DNR would like to see a more aggressive approach in solving the problem:

1. Inventory the existing BPA access road network. Decide which spurs are needed to provide minimum functional access to transmission line structures. Then decide which spurs are no longer needed.

2. Reconstruct spurs that are needed so that they have adequate drainage and road prism characteristics.
3. Abandon spurs that are not needed by removing culverts, constructing waterbars, trenching, contour excavating and revegetating.

[Brian Davis NWTP-2-55/2
State of Washington, Department of Natural Resources]

Response: All these suggestions are being seriously considered. The BPA Access Road Engineer and Project Manager have met with a representative of the Washington State DNR to review the access road system on DNR-managed lands to determine which roads could be obliterated, which existing culverts would need to be replaced, and what types of revegetation and drainage controls might be used during and after power-line construction. They are currently conducting the review as well as studying restoration of eroded travelways.

The BPA Transmission Line Maintenance District in the Bellingham area is also reviewing the power-line road system for adequacy to see which roads could be abandoned.

Comment: I couldn't get any answers then [during a visit with BPA] either about crossovers, about runoff, about specs, about how the road is going to be built with what material. So there doesn't seem to be any attention to detail in here to answer our questions.

[Craig Langager NWTP-2-57/12]

Response: The project DEIS was assembled before the BPA Access Road Engineers site visits. During the year prior to assembly of the Construction Specification, the access road design is produced and completed. Specifics concerning project road design cannot be assembled until the center line survey has been completed and the new tower sites located. BPA does have a standard access road construction specification that can be made available, but the specification would not have site-specific information until the road design is complete.

Other less specific items, such as road width/prism and general access road design items, are listed within the Supplemental DEIS, in Chapter 4. However, new culvert location and sizing, water bar or cross drainage locations, new road location, and rock quantities depend on tower location.

A review of the existing drainage and relief culverts has been completed; however, new culvert designs will not be completed until drainage hydraulics studies are finished and the towers are located. Some of the existing culverts may be removed if roads to existing structure sites are deemed unnecessary when the new line design is finished.

Comment: DNR's concerns on segments EF&G inside watershed. Two mainline logging roads: Mirror Lake and Haner Mountain. Numerous power line access roads take off from logging roads. BPA roads are in bad repair, in some cases small streams run down roads; erosion, drainage impact on logging roads which are lower than BPA roads. Also recreational vehicles cause erosion on BPA roads. Erosion damage from BPA access caused DNR to fix roads at their cost. Take care of erosion problems during construction phase of this project. Work together to solve this problem.

[Brian Davis NWTP-2-98/17
State of Washington, Department of Natural Resources]

Response: The BPA Access Road Engineer and the Project Manager have met with a representative of the Washington State DNR to discuss access road closure and erosion control within these segments of the project. New Storm Water Pollution Prevention laws require that BPA design a mitigation plan before beginning power-line construction. The new law provides on-site monitoring by officials to make sure that the line construction contractor complies with the law and follows the pollution prevention design.

Existing access roads that can be closed will be eliminated so that the erosion gullies now present in so many of the roads will be removed. These roads will be reseeded with a seed mixture approved by the State.

The State of Washington and the Whatcom County Parks Department are now studying road closures in these segments.

Comment: The DEIS does recognize that permanent stream crossing utilizing a bridge is the preferred alternative over a culvert. It also recognizes the need for a crossing facility. It should be noted that some existing crossings make use of simply fording equipment through the stream. Olsen Creek, a Lake Whatcom tributary, is an example. This type of use can be detrimental to downstream fish habitats, particularly during spawning and incubation periods.

[Arthur Stendal NWTP-2-87/1
State of Washington, Department of Wildlife]

Response: Olsen Creek will not be crossed by power-line construction equipment. The access road construction summary (which is part of the access road construction specification) will contain a note which specifies that no construction equipment will travel on right-of-way within "X" number of feet (usually 15-30 m [50 ft.-100 ft.]) of the creek's edge. That is now standard practice.

Where alternative access is available, and the cost of the lost time to use alternative access is less than that of constructing a stream crossing that is environmentally acceptable, the alternative access route shall be used.

Comment: It was noted in the review of the DEIS that Bonneville Power is proposing that culvert installations be sized to handle a 25-year storm event. It should be pointed out that the standard to which Department of Wildlife conditions a Hydraulic Project Approval require a facility sized to pass a 50-year storm event.

[Arthur Stendal NWTP-2-87/3
State of Washington, Department of Wildlife]

Response: BPA typically sizes to a 50-year event, but there may be conditions that warrant even larger culverts than those required to pass a 50-year storm. Conditions such as the possibility of debris flows can necessitate culverts possibly twice the size called for by a computer-modeled design. Each individual culvert to be placed will be field-checked after the office design is completed and before the hydraulic permit is applied for.

Comment: [Commenter was] concerned that long term soil disturbance on an old network of logging roads--particularly in the Smith Creek area--was not addressed in the DEIS. [Commenter] fears activity, such as heavy equipment transport, in that area and other areas with old logging roads will lead to further deterioration of the land and nearby streams.

[Fred Miller NWTP-2-45/1
Friends of Lake Whatcom]

Response: Historically, past logging and associated road construction practices have lead to destabilization of slopes, debris flows, increased erosion, and associated sedimentation of Smith Creek and Lake Whatcom. BPA and its contractors would upgrade existing transmission line access roads for construction and maintenance purposes. The network of abandoned logging roads would not be used in construction or maintenance of this project and would not be subject to further degradation due to transmission line construction or maintenance activities.

Comment: Primarily, the biggest concern, I think was somewhat addressed, is soil disturbance and erosion. The environmental impact statement seems to think of that as a one time, one season event that would happen during the construction phase only. I didn't see in the environmental impact statement enough serious treatment of the long term [erosion] impacts nor the acceptance of responsibility for those impacts by the proponents of the project.

[Fred Miller NWTP-2-57/27&28
Friends of Lake Whatcom]

Response: Short-term increases in erosion are likely to occur where soils are disturbed by road reconstruction, structure site preparation, and clearing. These increases are greatest during and immediately after construction until revegetation, run-off, and erosion controls

become established. Long-term changes in run-off would occur where roads are widened, vegetation cleared, and the landscape altered. This would be most prevalent within the North Shore Road alternative and Alternative H1. Increased run-off, if not mitigated, could intensify erosion, including debris flows, and increase stream sedimentation. However, most disturbance will occur within an existing transmission corridor, and proposed mitigation would minimize run-off, erosion, and sedimentation over the life of the project. For additional information please refer to the permits section in Chapter 4 (Section 5, Permits for Discharges into Waters of the United States) for information on National Discharge Elimination System (NPDES).

Comment: When we work in public sector projects though, we have to bid and take the least cost bid. Then bid specifications ought to be written straight from the kind of comments that are coming through on the EIS. And maybe a bid specification has to be written in a way that people haven't done before that asks that the contractors or operators should take extra care for the following items: That they should be responsible to come back six months, twelve months, two years, five years after the project and ensure that their work has not caused adverse impact. [erosion]

[Fred Miller NWTP-2-57/29
Friends of Lake Whatcom]

Response: Concerns raised during the environmental/comment phase of the project are reflected in refining proposed mitigation, design, specifications, and construction. As part of its maintenance activities, BPA takes full responsibility for the project and continues to monitor the facilities and the right-of-way for the life of the line. If mitigation were not successful, BPA would fix/redo those items (erosion) that cause problems to land owners/regulators and BPA. BPA will specifically monitor for water-quality-related problems for 3 - 5 years as part of its SWP Plan. If a construction alternative is selected, BPA will prepare an Impact Mitigation Monitoring Plan which will guide construction and maintenance phases of the project. These documents are available to the public.

J. FLOODPLAINS AND WETLANDS

Comment:[St. Clair Route] The wetland boundaries shown on Figure 16 do not agree with our 1990 wetlands maps. Photocopies of these maps are attached.

[Patricia Decker NWTP-2-90/3
City of Bellingham, Planning & Community Development Dept.]

Response: Figure 16 (now Figure 15) shows wetlands within the project area. Changes have been made to reflect the maps that you sent us.

Comment: Chapter 4/101: Please discuss impacts of permanent vegetation loss in wetlands due to clearing beneath lines.

[Patricia Decker NWTP-2-90/8
City of Bellingham, Planning & Community Development Dept.]

Response: A permanent loss of vegetation due to clearing beneath the lines is not expected. BPA does not routinely use herbicides on transmission line rights-of-way in the Bellingham area. Puget Power does use herbicides and would get the appropriate permits prior to application. Impact on wetland vegetation beneath the corridor is expected to be indirect and temporary. Where construction activities take place near wetlands, wetland boundaries will be staked and flagged by a wetland specialist before access roads are located and construction activities begin and will be avoided by construction activities. Where unavoidable impacts on wetland vegetation occur beneath the transmission line, revegetation will be completed. Some danger trees may have to be removed where the transmission line crosses a forested wetland. If danger trees are removed in these areas, they would be selectively cut, a temporary, direct impact on a wetland. No danger trees are indicated in wetlands along the corridor, and no impacts on wetland vegetation are expected.

Comment: If the project will result in unavoidable wetland impacts, Ecology recommends preparation of a mitigation plan which includes information on: the goals and objectives, construction details (including schedule), the hydrologic regime, revegetation plans, monitoring plan, contingency plans, buffers, the estimated cost, and bonding.

[Vernice Santee NWTP-2-99/3&5
State of Washington, Department of Ecology]

Response: A mitigation plan that would address these issues was not included because wetlands would mostly be avoided and because the Army Corps of Engineers indicated that no such plan would be required. However, BPA may consider working with the state and or county as the project develops. Also, a Mitigation Action Plan will be prepared; it will address any unavoidable wetlands impacts.

Comment: In light of this, project proponents should contact the members of the Squalicum Floodplain Project to make sure the Bellingham Substation and other project components do not frustrate their efforts.

[Vernice Santee NWTP-2-99/4
State of Washington, Department of Ecology]

Response: We talked to Kimberly Hyatt of the Squalicum Floodplain Project on February 28, 1994. There appears to be no conflict between their project and BPA's proposal.

K. FISH AND WILDLIFE

Comment: With regard to wildlife and particularly to federally protected species the document is flawed and does not adequately address the impacts to these species. My specific comments follow:

1. There is no verification given that the conclusions presented in this document have been reviewed by the U.S. Fish and Wildlife Service (FWS) and if that agency concurs with the analysis.
2. The Spotted Owl is a federally listed species that has not been addressed in the document. There have been several reports of Spotted Owls on the north side of Lake Whatcom.
3. The data and correspondence used in this document appears to be from 1992 and has not been updated to reflect the current situation in 1995. An example of this is statements that the closest Marbled Murrelet nesting area is Verlot when in fact murrelets have been encountered in tributaries to the Middle and South Forks of the Nooksack River. There is suitable habitat for murrelet nesting in the Lake Whatcom watershed that has not been addressed in this document.
4. Other Federal, State and private projects with much less potential impact have conducted thorough field surveys that have verified the presence of protected species. This project has done no field surveys to document the presence or use of the project vicinity by federally protected species.

The minimum requirement to address this issue adequately is to conduct two seasons of field surveys to determine the presence of these species. The next step is to clearly determine the potential impacts on these species, including the use of helicopters in the area, heavy machinery, etc. and how to avoid impacts to target species. Any less effort than stated here would be a violation of the Endangered Species Act and intentional disregard of the protocol for a project of this magnitude.

[Steve Wight NWTP-04-022]

Response: BPA has reinitiated informal consultation with USFWS to obtain an updated list of threatened and endangered species. Insert 23 has a copy of a letter from BPA t the USFWS requesting an update on listed species in the project area and a July 13, 1995 letter from USFWS with an updated list of threatened and endangered species that might occur in the project area. USFWS is reviewing the amended Biological Assessment and an official concurrence letter is expected in the next two weeks. One bald eagle nest is within 0.8 km (0.5 mile) of the transmission line. In a worst case, construction would not take place between January 1 and August 15, the critical nesting time for bald eagles.

There are also four potential areas of suitable marbled murrelet habitat within 0.8 km (0.5 mile) of the transmission line. In a worst case, BPA will not construct in those areas from April 1 - August 5, the core breeding season for the marbled murrelet. Activities within

the right-of-way corridor occurring between August 6 and September 15, which is within the breeding season, but outside the core breeding season, would occur within two hours after sunrise or two hours prior to sunset. BPA has concluded the project is not likely to adversely affect the bald eagle or marbled murrelet or their habitat.

Comment: If you move the corridor east, my home will be affected. I see deer, rabbits, and grouse on our property on a daily basis. If you move the corridor, hundreds of acres of trees will be cut down and you will be taking the homes of these animals. I do not want to see these animals, or any other animals die due to needless acts.

[Megan Morehouse NWTP-04-020]

Response: BPA's proposal (preferred choice) is to rebuild an existing 230-kV wood pole line which is now located on the west side of the existing corridor. A steel tower double-circuit 230-kV line would be built on the same cleared right-of-way under the proposed plan. BPA prefers this option because it avoids most of the impacts you have described.

Comment: We question the right of power companies to do construction near existing eagle nests when the average person would not be allowed to do so.

[Jon and Dena Fleurichamp NWTP-04-010]

Response: The closest eagle nest is 0.8 m (0.5 mi) from the transmission line. It is BPA's finding that disturbances half a mile and greater would not adversely affect the bald eagle (Biological Assessment, Appendix D of the EIS). BPA has consulted with USFWS and they have concurred with our findings (Appendix D, Final EIS).

Comment: 6. The EIS does not address the future problems in Canada concerning Canada's own fish enhancement problems and the concerns of Canada's First Nations Peoples about the implications of the project.

[Martin Eifrig NWTP-04-015
FAIR (Families Against Increased Risk)]

Response: Any inputs to Canada, as a result of the action, are subject to the provisions of Executive Order 12114, DOE guidelines for implementing that Executive Order. (See 10 C.F.R. §1021.102.)

Comment: [reference **Chapter 4**, page 113] We are also unclear as to what you mean by "allow for fish passage". What species and what life history stages are you allowing to pass and how do you establish whether or not your design works?

[Larry Wasserman NWTP-2-52/8
Skagit System Cooperative]

Response: We consider fish passage as meaning all species and life stages that would normally occupy the stream reach in question. We assume that with proper installation of culverts (proper gradient and size), fish passage will occur.

Comment: Since the preferred window of construction has potential to encompass both time periods (spring and fall), special effort should be made to address the potential impacts that can result from activities associated with the stream crossings.

[Arthur Stendal NWTP-2-87/2
State of Washington, Department of Wildlife]

Response: We recognize the importance of reducing impacts at stream crossing and have developed mitigating measures (and will have a Mitigation Action Plan) that would apply to all seasons and with view towards long-term as well as short-term impacts.

Comment: Use of a helicopter within 1/2 mile of an active (eagle) nest during the critical portion of the nesting season could have impacts to birds which would be more significant than ground based equipment on the right-of-way. Should this alternative of construction be used, extreme care should be taken to assure that no flight paths closer than 1/2 mile are used, and at no time should a flight path over the nest sites be taken.

[Arthur Stendal NWTP-2-87/4
State of Washington, Department of Wildlife]

Response: We share your concern regarding the active bald eagle nest about 0.8 km (0.5 mi.) from the corridor. Construction would not take place between January 1 and August 15, the critical nesting time for bald eagles. (See earlier response.)

Comment: I do not approve any plan that will impact salmon habitat in even a moderate manner. Salmon are on the verge of extinction having been deprived of their spawning grounds by one (moderate) impact after another. Enough is enough!

[Robert L. Lorenzo NWTP-02-033/3]

Response: BPA is working with other Federal, state, and local agencies and groups to refine mitigating measures that would minimize impacts on salmon habitat. An advantage of rebuilding existing lines instead of building new ones is that a rebuild requires much less clearing, road construction, and ground disturbance which can contribute to impacts on sensitive resources.

Comment: In addition, the EIS should reveal the locations of spawning habitat with respect to stream crossings in the project area. If project activities are occurring

coincident with spawning of anadromous fish, extra mitigation measures should be put in place so that the fish habitat is not disturbed.

[Kathy Veit NWTP-2-89/3
U.S. Environmental Protection Agency]

Response: Figure 20 - Resident and Anadromous Fish Habitat has been revised to show where anadromous fish spawning and rearing occurs at or downstream from crossings (river segment with anadromous fish). If work should occur at or near these crossings, mitigation would be developed in conjunction with fish and natural resource agencies. (See the Mitigation Plan for details.)

L. VISUAL

Comment: Tower 52/4 - Murray-Bellingham: Place the new tower considering line of sight from Ray and his son's residence for minimal visual impact.
[Ray Tompkins SWOH-1]

Comment: I prefer single pole towers for visual reasons.
[Ray Tompkins SWOH-2]

Comment: I don't like having to look out from my home at a new big tower.
[Dennis Rittall SWOH-23]

Comment: I am concerned about the view from my home. I would like you to build a monolithic tower (steel pole) design.
[Ray Tompkins SWOH-26]

Response: BPA's proposal is to use double-circuit 230-kV lattice steel towers in place of the existing wood pole line. These structures have a similar appearance and in most locations would be located opposite the existing 500-kV towers. Visual impacts created by this project will be mitigated by minimizing the amount of clearing and where possible locating the new towers to where they will be screened from existing residences. It is BPA's opinion that the monolithic steel pole design is visually more prominent than lattice. They also have shorter span lengths and thus are more numerous.

After field investigations and communications with Ray Tompkins, the tower in question has been moved, in order to minimize visual impacts, to the satisfaction of the landowner.

Comment: At one point, it [the DEIS] said that higher towers might seem to be visually disturbing, or whatever the term was, in the beginning but that effect would be mitigated as time went by. Well, the towers aren't going to shrink. I don't see how the visual effect is going to be mitigated.
[David Davis NWTP-2-57/7]

Similar comments received from: *[Todd Crossman NWTP-2-57/25*
David Davis NWTP-2-98/19]

Response: The towers, of course, will not shrink. However, impacts associated with transmission lines are related to an individual's perception of the lines which can vary widely, based on social, political, economic and other factors. Generally people think of transmission lines as unattractive, but after the line is built, the line becomes a part of the visual setting.

Comment: The City requests additional analysis of the taller towers along the Lake Whatcom hillside. This analysis should discuss landscaping alternatives such as taller trees outside of the danger zone which screen the base of the towers and selective planting of lower growing trees and larger shrubs within the right-of-way.

[Patricia Decker NWTP-2-90/1
City of Bellingham, Planning & Community Development Dept.]

Response: Planting of trees and shrubs to mitigate impacts has been used successfully in limited situations. When design and tower locations are finalized, site-specific mitigation measures can be identified. This may include saving or topping of existing trees and (in special situations) may include plantings of trees/shrubs. Should this be planned, BPA would work with the city, as well as with landowners along the right-of-way.

Comment: Taller towers are proposed in City of Bellingham designated View Sensitive Areas. Impacts of these towers on views from the east should be addressed.

[Patricia Decker NWTP-2-90/4
City of Bellingham, Planning & Community Development Dept.]

Response: Although not specifically addressed, they would be similar to impacts described in the Puget Power discussion in Chapter 4, Section E, Part 7 (Visual Resources). The towers would be about 1.5 m (5 ft.) taller than the existing towers.

Comment: Another of our major concerns is the visual impact of taller towers. We request that the tower height be no greater than the existing towers along the L, M, N corridor segments, if you chose to implement the project along that corridor.

[Ray & Dolly Tompkins NWTP-2-67/4]

Response: Please see the discussion of visual impacts in Chapter 4. Tower heights, terrain/side slope, clearing of trees, and amount of new access roads needed were all included in the visual impact comparisons of the different alternatives. Visual impacts created by this project will be mitigated by minimizing the amount of clearing and where possible locating the new towers to where they will be screened from existing residences.

BPA is proposing to build Option 1 which would be about 10 meters (32 ft) taller than the existing 500-kV structure in segments L, M, and N. It is about the same height as the taller of the two 500-kV structures in the other parts of the corridor.

Comment: Disagrees with BPA's statement that they have danger trees on their property - wants trees to remain for buffer (visual).

[Bill Carroll NWTP-2-98/32]

Response: Trees on the commenter's property have already been designated as danger trees for purposes of recent maintenance work. BPA will also complete a Danger Tree Analysis for the existing and also for the proposed line. This analysis will tell us where there are trees that could potentially be hazardous to the new and existing transmission lines.

M. SOCIAL AND ECONOMIC CONSIDERATIONS

Comment: We strongly oppose any project that raises (increases electric fields) the existing power lines higher than they already are. For years we have grown grass hay in a field that your lines cross. The grass hay planted under the existing lines that cross our property does not grow at the same rate as that planted on the rest of the field.
[Jon and Dena Fleurichamp NWTP-04-010]

Response: Appendix C, page 4, of the SDEIS discusses research relating to crop growth and transmission lines. BPA's research has found that crop growth is not noticeably affected by even the largest transmission lines.

Comment: The proposal will cause a loss of timber growing land.
[Charles F. Lappenbusch Sr. NWTP-04-002]

Response: No timberland will be removed from production for the proposed project if Option 1, the preferred alternative, is selected. Two of the three location alternatives (H1 and the North Shore Road alternatives) would, however, remove timberland from production. Alternative H1 would permanently remove 20 hectares (51 acres) from production, and the North Shore Road Alternative would require 28.3 hectares (70 acres) of private forestland to be permanently removed from production.

With respect to compensatory damages paid for marketable timber removed from forestlands, fair market value is paid for all timber to be cut on new rights-of-way, as well as for any trees off the right-of-way that need to be cut for construction purposes or that pose a danger of falling into the line or across access roads. A line crossing forestland generally leaves little value to the property for its intended use; therefore, fair market compensation for a transmission line easements across forestlands may be close to full fee value.

It is unlikely that any of the alternative location would be selected for this proposed project. BPA's preferred alternative for BPA's portion of the proposed project is Option 1. Option 1 is confined to the existing transmission corridor.

Comment: I'm curious how BPA has addressed the recent issue of environmental justice in this document.
[Ellen Russell NWTP-04-001]

Response: BPA considered the issues and directives of the Executive Order on Environmental Justice (Executive Order 12898) in developing the public participation plan for this proposed project, in accordance with the Department of Energy's (DOE's) interim

guidance for implementing the Executive Order. Local government agencies were contacted to determine if any economically disadvantaged or minority group were known to exist within the project area. None were identified.

Even though the proposed action did not appear to affect any economically disadvantaged or minority group, BPA reached out to the community-at-large to inform the public and to solicit input on the proposed action. BPA developed a mailing list to keep the affected landowners and other interested publics up-to-date as to the status of the proposed project as well as to inform them of the availability of environmental documents and any upcoming public meetings that were to be held within the project area. BPA placed ads in local and regional newspapers that encompassed the project area and also provided the local media with press releases and public service announcements with information regarding how the public could participate in the decision-making process. These additional actions did not reveal any new information regarding the existence of populations related to environmental justice issues.

BPA did consider the Executive Order on Environmental Justice on this proposal and determined that no further measures were warranted, beyond those which are normally undertaken, due to the lack of any minority or low-income population being present within the zone of impact of the proposed project.

Comment: *You could improve the proposal by*: Replacement of timber growing land to the owners of "Designated Forest Land" to grow Douglas fir plywood and timber which contributes to all four of the physiological needs of all living people.
[Charles F. Lappenbusch Sr. NWTP-04-002]

Response: No forestlands would be removed from production if Option 1 (Proposed) is selected. Two of the three route alternatives (H1 and North Shore Road) would, however, remove timberland from production. In addition to compensating landowners for the timber removed for construction of the line, BPA compensates landowners for the value of forestland or agricultural land removed from production. With regard to replacing timberland removed from production, it is up to the landowner's discretion how she/he would use the moneys from BPA. In some instances a landowner may wish to purchase land to grow timber; or a landowner may have other needs. BPA does not specify how monetary compensation paid to the landowners should be used

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Comment: *I think the analysis would be better if you:* "compared it with Microsoft problems of buying another company."
[Charles F. Lappenbusch Sr. NWTP-04-002]

Response: The environmental analysis for the proposed project: (i) covers the purpose and need for action; (ii) identifies the affected environment; (iii) documents the impacts of

the proposed project and alternatives on the human environment; and (iv) identifies possible mitigation measures that would reduce significant impacts to levels below significance, if possible. Other subjects are outside of the scope of the proposed project.

Comment: Sociological Relativity - When you help yourself will you then help your neighbor?

[Charles F. Lappenbusch Sr. NWTP-04-002]

Response: It is not clear what the commenter intends by his question. As an agency of the Federal government, BPA is engaged in public service.

Comment: The DEIS (pages 4/133 and 4/134) says that the existing transmission line has already imposed land use limitations along the right-of-way. The DNR is aware of the existing limitations. The DEIS further states that the project is not expected to "alter significantly" the impacts on land use and resources on or off the right-of-way. Regardless of significance, the DNR needs to know specifically the alteration to current land use limitations that this project would cause.

[Brian Davis NWTP-2-55/1
State of Washington, Department of Natural Resources]

Response: The only alteration to current land use limitations *on the right-of-way* would apply to agriculture, specifically to operation of farm implements along or across the right-of-way. The new transmission line would have longer spans (about 350 m (1150 ft.)) than the one it would replace (typically 180 m (600 ft.)), and the new structures would mostly be located next to the existing 500-kV structures. With fewer structures, and the fact that they would be sited in relatively close proximity to the other structures in the transmission corridor, maneuvering farm machinery in the affected fields should be easier than what is currently experienced. All other land use limitations within the existing right-of-way would remain the same as they are for the existing transmission line.

With respect to any areas *off the right-of-way* that would need to be acquired for the proposed project, e.g., (i) the North Shore Alternative, (ii) the H1 Alternative; and/or (iii) for any minor additions to the existing right-of-way because of the need to acquire new access roads, install dead end structures and/or guy wires, these new rights would need to be purchased by BPA. Land use restrictions that would apply to any new transmission line rights-of-way would be the same as for those that currently exist.

Comment: I wasn't sure if anyone said anything about how this is going to put wear and tear on North Shore Road with running that much equipment up and down the road.

[Fred Miller NWTP-2-57/32]

Response: Construction of the proposed project would entail hauling heavy equipment, tower steel and other materials on local area roads. Heavy loads would likely require multi-axle vehicles to avoid or at least to minimize the potential for damage to these local area roadways.

At this time, BPA has not made a decision to build the proposed project. This process will only be initiated after a decision on the part of BPA to build the project. It would be premature, therefore, to speculate on the origin of the necessary materials such as concrete and tower steel that would be used to construct the project. It is also not yet known what roads would be affected by construction-related vehicles. Nevertheless, it is highly probable, whatever the source of materials, that North Shore Drive, which is a public road and which parallels the north shore of Lake Whatcom, would be used by the construction contractor and subcontractors, assuming the proposed project will be built.

With respect to any liability resulting from damages to local area roadways incurred during the construction process, BPA holds each of its contractors responsible for any unusual damage caused by, or that results from, those construction activities. If, however, the affected local government entity is not satisfied with the remediation effort offered, then BPA retains the ultimate responsibility to attempt to satisfy the local government entity.

Comment: Moreover, improving access to existing generation (e.g., Canadian hydropower) will facilitate Puget Power's ability to purchase power at a reasonable cost. Keeping power costs low is a benefit to our ratepayers, particularly to those of moderate means or on fixed incomes. This benefit should be discussed in the DEIS.

[John Campion NWTP-2-84/11
Puget Sound Power & Light Co.]

Response: Gaining access to Canadian hydropower is the need to which Puget Power's joint sponsorship and proportional share of Northern Intertie capacity is directed. This is discussed in Chapter 1, under the purpose and need discussions.

Comment: Do landowners get compensated for loss of crops, compaction, etc. caused by construction activities?

[Pat Zitka NWTP-2-98-15]

Response: Compensation will be made to any landowner/farmer whose crops are damaged by construction-related activities, including both pre-construction and post-construction activities. Where soils have been compacted by construction activities, farmers will also be compensated for the cost of loosening the soil by subsoiling, for loss of production, and for replanting.

Comment: *Of the choices offered, I do not like:* Removal of people from their property, compensation is not everything you know.

[Robert L. Lorenzo NWTP-02-033/1]

Response: By rebuilding existing lines rather than building new ones, removing homes can be avoided.

Comment: It says in chapter 2, page 29, in the larger edition of the EIS that, under the improved noise levels for BPA Option 3, there would be no appreciable difference in degree of impact among the three design options. I think that [...] a larger tower is going to have a bigger impact, it's an appreciable impact, than a smaller tower.

[David Davis NWTP-2-57/8]

Response: The commenter is referencing the Social and Economic discussion, which does not include visual impacts. (These are covered separately.) The commenter is correct: larger towers will generally be more noticeable than shorter ones. See Visual/Recreation impacts discussion in Chapter 4.

N. PROPERTY VALUES

Comment: My house may need to be bought and removed by BPA for the North Shore Alternative. My house is presently for sale. What do I disclose to potential buyers?

[Billy Powell BOH-23]

Response: BPA proposes to rebuild the new 230-kV double-circuit line on the same alignment as the existing 230-kV line. The North Shore Alternative was analyzed but not selected as the preferred location. If BPA were to construct the North Shore Alternative, and require the acquisition of land rights needed for the new right-of-way, including your residence, then the owner/occupant of the residence would be offered fair market value plus relocation assistance. With regard to your last question, BPA cannot give legal advice.

Comment: I don't think you paid my grandfather enough when you bought the existing R-O-W easements. BPA's transmission lines encumber 2.4 acres of our property, we pay taxes on it, but we can't use the property.

[Will Lappenbusch NWTP-04-013]

Response: As a Federal agency, BPA must offer landowners fair market value for any land rights that it proposes to acquire. BPA paid fair market value for this property in July 1972. Landowners are entitled to any uses of the easement area that do not conflict with BPA's property rights. If any landowner feels that their assessed value is too high within the transmission line easement area, he or she may wish to call the assessor's office and talk to the appraiser for an explanation of how the assessed value was determined. In Whatcom County, where your grandparent's property is located, you have two opportunities to challenge the assessed value. The first is when you receive your Notice of Assessed Value from the assessor's office. You must contact the assessor's office within 30 days of receipt of the Notice if you feel this value is excessive. The assessor's office has the authority to change the assessed value without going through the Board of Equalization if you have adequate support for the reduction. Your second opportunity is to file a petition with the Board of Equalization. This petition must be filed by July 1 to schedule [a hearing] for the current year. Any change to the assessed value as a result of the hearing will affect the following year's taxes.

Comment: Puget Sales multiple listings real estate sales agreement contains a section on hazards such as landfills. One question in this section ask if the listed property is close to powerlines.

[Sharon Hoofnagle, D.V.M. NWTP-04-017]

Response: The project is not expected to cause overall long-term adverse effects on property values along the existing right-of-way.

Although the State of Washington has no *standard real estate contract*, they do have a new regulation regarding disclosure. The State of Washington's Real Property Transfer Disclosure Statement (Chapter 64.06 RCW) became effective on January 1, 1995. The Disclosure Statement serves as a notice to prospective buyers of residential real estate of any known defects associated with the property. Although there is no specific reference to powerlines, the seller must disclose under Section 1D, Title, if there are any rights-of-way, easements, or access limitations that may affect the owner's use of the property.

BPA recorded the easement documents for this project when the land rights were acquired. For those landowners who have transmission line easements across their property, these easements will be noted on schedule B of their title policy. Recording the easements and the physical presence of the transmission lines serves as public notice.

Comment: What impacts will the new line have on my property?

[Susanne Jenkins NWTP-04-012]

Response: BPA as discussed the impact of the proposed line on a new home being built by the Jenkins. Their primary concern is visual impact. If constructed as Option 1, the new facility would have some visual impacts. However, of the transmission options looked at, Option 1 would have the least visual impacts because it uses the smaller 230-kV double circuit towers (compared to the 500-kV double circuit towers in Options 2, 3, and 4). The new 230-kV structures would be downslope of the existing 500-kV line. The tower top elevation of the new lines would therefore be lower than that of the existing 500-kV towers, keeping visual impacts to a minimum.

Comment: (5) We are aware of the pros and cons of Initiative 164. Some ask for a less ambiguous and more effective law. No matter how the proposed law is written, your "taking" of our property, health, and welfare is a classic case for this law. Yours is a first class "takings" without proper justification or showing of real cause.

[Craig Langager NWTP-04-009]

Response: Initiative 164 does not apply to BPA's use of its easement property rights. This initiative relates to regulation of private property. The Ballot Summary for Initiative 164 to the Legislature is as follows:

> This measure would prohibit regulation of private property without prior analysis of the regulation's economic impact and would limit regulation to that having the least private impact necessary to the regulation's purpose. Many regulations for public benefit would be defined as takings, and would require compensation for

reduction in property value. Private property includes land, improvements, water rights, and crops, including forest products. Successful plaintiffs enforcing this measure would be entitled to attorney fees.

Compensation is not an issue, since BPA purchased easements for the transmission line right-of-way many years ago. Land rights needed for new right-of-way (if any) will be appraised, and landowners will be compensated for the value of the property. BPA imposes no restrictions outside the transmission line right-of-way, although occasionally we cut danger trees outside of the right-of-way.

Comment: Property values have decreased with the increased public awareness of the problems associated with powerlines.

[Sharon Hoofnagle, D.V.M. NWTP-04-017]

Comment: I do not want my property value to be diminished because of public concerns over possible health impacts to property along a transmission line.

[Kathy Klemmer NWTP-04-012]

Comment: My property value will decrease as a direct result of EMF.

[Ray Tompkins SWOH-5]

Comment: We're in the process of building a new home at 56-B Highway 9, property that will be affected by this project. There isn't any doubt that this new power line will further devalue or property. Are you prepared to compensate accordingly?

[Milton and Susan Jenkins NWTP-04-018]

Comment: So there's nothing really in this environmental impact statement that deals with property devaluation, trying to sell your home or what the EMFs from these taller towers will do to the people around there.

[Todd Crossman NWTP-2-57/26]

Similar comments from:

[Craig Langager NWTP-2-53/1
David Davis NWTP-2-57/9
Terry & Lori Bierman NWTP-2-92/1
Brian Davis NWTP-2-98/13
State of Washington, Department of Natural Resources]

Response: As stated in the DEIS, the existing transmission line has already imposed land use limitations on the farm, forest, and residential properties along the right-of-way by the physical presence of the lines and towers, as well as through use limitations imposed by the original easement documents. Rebuilding the transmission line is not expected to alter the long-term salability or value of the various properties along the right-of-way. See Social and Economic Considerations discussed in Chapter 4.

Comment: I am under the impression that houses are being bought by the utility company because of EMF - is this true?

[Mark Nusslock NWTP-2-98/9]

Response: BPA is not purchasing any houses because of EMF. The only potential new right-of-way is on Segment H1, the North Shore Road Alternative, and small portions of parcels at two or three locations that might be needed for Option 3. If the new right-of-way boundaries include the physical taking of any houses, the landowners will be offered fair market value for their homes, as well as relocation benefits.

Comment: Legal agreements of previous easements do not include taller towers or new towers - a new agreement must be drawn up with present landowners.

[David Davis NWTP-2-98/16]

Similar comment from: *[Craig Langager NWTP-2-53/2]*

Response: BPA's easements include the right to rebuild the existing transmission lines. There are no limitations regarding replacing the old towers with new towers or height limitations of the towers. Therefore, there are no additional rights that need to be acquired from the landowners to rebuild the existing transmission lines.

O. NOISE & RADIO/TV INTERFERENCE

Comment: Wire fences under the lines create nuisance shocks (pretty hot).
[Sharon Hoofnagle BOH-32]

Comment: The existing lines crackle and pop and produce shocks. When will this stop? Increasing the power flows will increase this.
[Tom Lingbloon BOH-35]

Response: BPA has provided project options that will either not increase noise levels (Options 1 and 2) or will significantly reduce them (all other options). In addition, none of the proposed options are expected to increase the level of nuisance shocks which currently exist on the transmission line corridor. Please see discussions in Chapter 4 of the SDEIS on Noise and TV/Radio Interference and on Health and Safety.

Comment: You have covered Scoping and Major Issues except one. What if our TV. signals are effected? What will you do about it? Due to your power lines, my neighbors do not have TV. reception. Fortunately, at this time I do. With the change in voltage and towers, if my signal is effected, as in my neighbor's case, what happens? My location is H - along the Samish River - west side of river approximately 8.5 miles north of Sedro Woolley - Hwy 20.
Barbara Landrock NWTP-2-36/3

Response: We have confirmed that you do have good TV reception at your home. We comply with FCC requirements. If our facilities interfere with your reception so that it becomes worse, we will investigate the complaint and, if this project is the cause, we will take care of the problem. (If reception problems are caused by something else, we do not). Our engineering staff have test instruments that measure signal strength to help determine the source of interference problems. For more information please see the section in Chapter 4 on Noise and TV/Radio Interference.

Comment: Concerned about noise and radio/TV interference. Will this change with new line?
Robert Burnett NWTP-2-98/21

Response: Noise and radio and TV interference are covered in the Supplemental DEIS in Chapter 4. For Options 3 and 4, audible noise levels are expected to go down with the new line. Radio and television interference is generated by electromagnetic interference (EMI). EMI is not expected to increase above existing levels.

Comment: And I think that before we start thinking about building new lines and more power that we should take care of existing problems [noise from power line] like this.

[Pat Wheat NWTP-2-57/24]

Response: The project as proposed for Option 1 will not increase the overall noise of the corridor. See Chapter 4, Noise and Radio/TV Interference section.

Comment: Property value down due to noise. Replace existing transformer with a quiet one. [...] BPA should buy property near substation and plant trees as noise buffer zone.

[Dave Rogers NWTP-2-98/14&20]

Response: BPA is not planning to replace any transformers as part of this project, or to buy any property adjacent to the substations. We will not be planting any trees to reduce noise, because trees do not make good noise barriers.

Comment: Noise - if noise levels turn out to be greater than the DEIS says, then what will BPA do?

[Ray Tompkins NWTP-2-98/22]

Response: While BPA has confidence in its ability to predict audible noise from transmission lines with reasonable accuracy, the purpose of the audible noise discussion in **Chapter 4** is not to guarantee absolute noise levels. The purpose is to compare alternatives such that relative impacts related to noise can be reasonably determined. With this in mind, BPA has provided project options that will either not increase noise levels (Options 1 & 2), or will significantly reduce them (all other Options).

P. AIR QUALITY

Comment: Air Quality. The DEIS understates a significant environmental benefit of this project. Improved access to Canadian hydropower reduces reliance on energy produced from fossil fuels. In President Clinton's "Climate Change Action Plan" (October 1993), the President encourages utilities to reduce greenhouse gases by a variety of measures. These include increasing the efficiency of transmission and making better use of available hydroelectric resources. The merits of the project, in this regard, should be discussed in the DEIS.

[John Campion NWTP-2-84/10
Puget Sound Power & Light Co].

Response: The DEIS has been revised to acknowledge this benefit.

Comment: Chapter 4/146: Please discuss the use of lop and scatter or chipping instead of burning, especially when near homes.

[Patricia Decker NWTP-2-90/9
City of Bellingham, Planning & Community Development Dept.]

Response: Typically, BPA's lop-and-scatter method is an inexpensive method of brush disposal on transmission line rights-of-way. To be successful, the method requires that all tree limbs and debris be cut into manageable lengths (which may vary in accordance of right-of-way usage), and placed partly or wholly on the ground. (The ground contact is important to expedite the decay process of the material, also reducing the potential fire hazards.) The method is best suited to deciduous species, as the rate of decay is very rapid. The mechanical mulcher would be much more efficient and productive; however, it is more expensive. BPA will not burn slash or debris on the right-of-way.

Q. EMF/HEALTH AND SAFETY

1. EMF RESEARCH AND EFFECTS

Comment: We are strongly opposed to any project that increases the EMF's to our property. Although we understand health related consequences haven't yet been determined from exposure to EMF's, we are not prepared to risk our health or our child's health.

[Jon and Dena Fleurichamp NWTP-04-010]

Response: We appreciate your concerns regarding the health of your family. However because the state of the scientific evidence relating to EMF has not yet established a cause-and-effect relationship between electric or magnetic fields and adverse health effects, we are unable to predict specific health risks, or specific potential level of disease, related to exposure to EMF. A review of some of the studies relating to EMF and possible biological and health effects are included in Appendix C of the FEIS. We are continuing to monitor research results and will disclose any new findings as soon as they are available.

Comment: I requested that BPA measure EMF levels on my property in the past. I want to have measurements before and after the project. The measurements have not been made. I again request that BPA measure the EMF levels at my property.

[Mark Nusslock NWTP-04-014]

Response: Measurements were taken on Mr. Nusslock's property on June 20, 1995.

Comment: I am adamantly opposed to this project. . . . I object to any increase in the EMF and believe that the current EMF outside and under the power lines is too high. Evidence is steadily mounting that the EMF has serious effect on the body including adult, and more importantly, childhood cancers. At the edge of the right-of-way, the EMF readings far exceed the level that any of the studies on health risks indicate are safe. BPA is telling us that the studies are not conclusive. That statement is not correct. Several of the studies are conclusive, some are not. We could argue this indefinitely, just as the tobacco industry argued indefinitely that cigarette smoking was not harmful. Since not everyone who smokes gets lung cancer, it could be argued that studies on smoking are inclusive. That would be a ludicrous argument today. All industries and individuals associated with EMF's, including BPA, are recommending avoidance of the fields, yet BPA is proposing this project that would increase the EMF's over family homes. . . . BPA gave us booklets on how to work safely under the lines. They showed pictures of people driving tractors under the lines, in the same EMF's they are now saying to avoid. This

project will increase the EMF under the lines but BPA is still telling landowners that they can work their land under the lines, while at the same time recommending avoiding the EMF. It just doesn't make sense.

BPA's own book, Electrical and Biological Effects of Transmission Lines, U.S. Dept. of Energy 1989, documents the dangers of EMF's.

Pg. 52: Three of the five studies done to investigate a possible association between childhood cancer and powerline magnetic fields reported some positive results. (Showed association). About 50% of 30 reports on "electrical occupations" and cancer report significantly elevated risks.

Pg. 53: Overall, research with humans supplemented by lab animal research, suggests the possibility for adverse effects from human exposure to electric and/or magnetic fields.

Pg. 55: Table 8 lists the relative risk of childhood cancer from powerlines at 1.5-3; it lists the relative risk from environmental tobacco smoke (lung cancer) as 2-3, almost identical. (The danger to children from second hand tobacco that parents who smoke heavily have been denied custody of their children).

Pg. 56: Powerline cancer risk is higher than the risk from home asbestos-lung cancer. (Millions of dollars are being spent to remove asbestos from schools and other public places.).

All of the above, plus additional facts supporting the dangers from powerlines are in BPA's own book. Other unbiased studies are even more emphatic that the lines are dangerous.

[Sharon Hoofnagle, D.V.M. NWTP-04-017]

Comment: When we purchased our properties we were assured that the power lines were not a health hazard. BPA at that time was aware of the possible hazards but did not tell us. BPA now wants to increase the hazard further. BPA has no right to expose anyone, but especially children, to the possibility of cancer or any other health hazard.

[Sharon Hoofnagle, D.V.M. NWTP-04-017]

Response: In all of our publications, including this FEIS, we try to summarize research information that represents a variety of conclusions and view points regarding potential EMF health effects. BPA continues to monitor the EMF issue as it relates to possible adverse health effects. As stated on page 4/129 of the SDEIS, we believe that the state of the scientific evidence has not established a cause-and-effect relationship between electric or magnetic fields and adverse health effects. The EIS presents transmission design

options that are consistent with a "prudent avoidance" approach and are consistent with the information in our EMF literature.

Comment: Puget Power's position/policy on EMF radiation must be part of the public record.

[Martin Eifrig NWTP-04-015
FAIR (Families Against Increased Risk)]

Response: Puget Power's current policy statement on Electric and Magnetic Fields is enclosed in Appendix C.

Comment: Puget Power as a joint project participant, must also state why they opposed the language concerning EMF radiation or discussion of EMF reduction in the EIS.

[Martin Eifrig NWTP-04-015
FAIR (Families Against Increased Risk)]

Response: Puget Power submitted written comments on the EMF language used in the EIS. This letter is included in Chapter 10 and is responded to in this EMF Comment/ Response section of the EIS.

Comment: 9. Despite increasing the current carrying capacity of the proposed line (item 7) BPA has refused to set specific binding limits on EMF radiation at or below current levels. The EIS must note that "prudent avoidance" is recommended for EMF exposure by the Washington State Department of Health. The EIS must address why residents near the transmission lines can't be given this binding guarantee that their health will not be further jeopardized and that their property values will not be adversely impacted. The EIS must also note that standard real estate contracts now require that the presence of high voltage power lines near your property be explicitly stated.

[Martin Eifrig NWTP-04-015
FAIR (Families Against Increased Risk)]

Response: BPA cannot give a binding guarantee that property values or health will not be adversely impacted. As per our 1995 Guidelines on EMF, BPA will take reasonable low-cost steps to minimize field exposures. As stated in the EIS, some short-term adverse impacts on property value and salability may occur on an individual basis. However, these impacts are highly variable, individualized, and not predictable. The project is not expected to cause overall long-term adverse effects on property values along the existing right-of-way.

Although the State of Washington has no *standard real estate contract*, they do have a new regulation regarding disclosure. The State of Washington's Real Property Transfer

Disclosure Statement (Chapter 64.06 RCW) became effective on January 1, 1995. The Disclosure Statement serves as a notice to prospective buyers of residential real estate of any known defects associated with the property. Although there is no specific reference to power lines, the seller must disclose under Section 1D, Title, whether there are any rights-of-way, easements, or access limitations that may affect the owner's use of the property.

BPA recorded the easement documents for this project when the land rights were acquired. For those landowners who have transmission line easements across their property, these easements will be noted on schedule B of their title policy. Recording the easements and the physical presence of the transmission lines serves as public notice.

Comment: Several recent studies by independent organizations have proven that extreme health hazards exist from EMF radiation. There are possible links to leukemia in children, tumor growths and physiological changes. Why is it that when utility companies have paid for studies on radiation effects, the results have been inclusive?

[Craig Langager NWTP-04-009
FAIR (Families Against Increased Risk)]

Response: There are hundreds of studies on EMF currently being conducted throughout the world. They are funded from a variety of sources, governments, the utility industry, and a host of private organizations. We have not seen evidence that source of funding has a bearing on the outcome of the study.

Comment: Landowners along the right-of-way should be aware of the latest EMF study, where physicists found no link to negative health effects related to EMF.

[Peggy Mohr BOH-26]

Response: The American Physical Society looked at a variety of EMF literature reviews and reports and concluded that "Purported health effects of power line fields have not been scientifically substantiated. . . . The cost of mitigation and litigation is incommensurate with the risk, if any."

Comment: If you put together a dozen small studies on EMF, statistically this should be significant.

[Dean Wadsworth SWOH-14]

Response: Not necessarily, it would depend on the results of each study, the method used to combine the results, and the assumptions made for combining the studies. Please see the SDEIS Appendix C/3.

Comment: In the first public meeting I was told that there would not be an increase in EMF with the new project, but the supplementary EIS identifies that this is not true.
[Ray Tompkins SWOH-2]

Response: Both the DEIS and the SDEIS indicated that there would be increases in magnetic field levels in some segments of the transmission corridor and decreases in others.

Comment: The EMF danger hasn't been adequately addressed in your DEIS.
[Milton and Susan Jenkins NWTP-04-018]

Comment: I am concerned that EMF from the lines may impact the health of landowners.
[Kathy Klemmer BOH-40]

Comment: I am concerned about exposure to EMF as it might affect my health.
[Dean Wadsworth SWOH-24]

Comment: Power companies say that EMF is not a health problem, but studies have cited examples of leukemia caused by EMF (Swedish Study).
Dean Wadsworth SWOH-13

Response: BPA believes that it has accurately and adequately described the current state of the science regarding the EMF issue in the SDEIS. Chapter 4 of the SDEIS includes a discussion of EMF and potential health effects. Appendix C provides additional information as well as the magnetic field analysis.

Comment: Increasing the electric fields in the corridor is scary.
[Tom Lingbloon BOH-38]

Response: Most of today's scientific concern and uncertainty related to possible health effects focuses on exposure to magnetic fields. Additionally, people are not shielded from magnetic fields by trees, houses and other objects as they are with electric fields. Therefore, our detailed exposure assessments focus on magnetic (not electric) field levels. However, there are known safety hazards related to electric shocks from high voltage power lines that are regulated by the National Electric Safety Code (NESC). BPA has established electric field standards which assure that our lines are designed and constructed in accordance with the NESC regulations established to minimize these potential shock hazards. All of the project options will meet our electric field standards. For additional information, please see the section in **Chapter 4** on **Health and Safety**.

Comment: The EIS does not deal with Alzheimers disease. I read in the paper that there is a relationship between Alzheimers, also cancer. Three times as many people are affected (assume by Alzheimers) along transmission lines and this is not referenced in the EIS.

[Dean Wadsworth SWOH-15]

Response: It is not possible to discuss all research relating to EMF in the SDEIS. BPA's newly updated brochure, *Possible Health Effects of Electric Power Lines: Questions and Answers,* includes a study relating to Alzheimer's disease and occupational exposure to magnetic fields. The updated brochure is included in the SDEIS by reference and is available by calling 1-800-622-4520.

Comment: Extremely Low-Frequency Electric and Magnetic Fields. The SDEIS carries forward an "exposure assessment" from the DEIS, yet concedes that there is no scientific basis to draw any conclusions as to risks to public health from such assessment. This is because the consensus of the scientific community, as understood by Puget Power, is that there is no established cause-and-effect relationship between ELF/EMF exposure and cancer or other disease.

If the "exposure assessment" is not an assessment of health risks, why is it found under the heading of "Health and Safety" in the SDEIS? In the context within which it appears, the "exposure assessment" is likely to mislead the public by engendering a false sense of concern (or comfort) without a scientific basis to draw any conclusions as to risk (or lack thereof). BPA is not a health agency and should not substitute its judgment for the judgment of qualified public health agencies and professionals that are disinclined to associate ELF/EMF "exposure assessments" of this type with assessments of public health and safety. Further comments prepared by William H. Bailey, Ph.D., are attached (below).

[Doug Loreen NWTP-04-019
Puget Sound Power & Light]

I have reviewed the SDEIS and the Responses to Comments on the DEIS topics relating to EMF. My comments on the DEIS focused largely on criteria for EMF impact assessment, and comparisons of alternatives based upon EMF exposure assessment.

<u>Criteria for Impact Assessment</u>

One of my major criticisms of the DEIS was that it did not derive criteria for impact assessment based upon "the findings of comprehensive scientific reviews performed by multidisciplinary panels of scientists." Several additional reviews are cited in the SDEIS, e.g., SAB 1991 and "[a] Danish blue-ribbon panel," but no more recent reviews are cited. Although the SDEIS concludes that reviews of the EMF-cancer literature

cited "generally reach a similar conclusion, i.e., existing evidence does not show that EMF cause or promote cancer" [C/4], the SDEIS as did the DEIS before, disregards this guidance. Instead, the SDEIS promotes a detailed quantitative exposure assessment to compare alternatives despite the acknowledgment that "it is not possible to identify 'unsafe' field levels"[C/5]. As I pointed out in my review of the DEIS, this kind of exposure assessment is inappropriate given the level of scientific knowledge and assessments expressed in comprehensive scientific reviews.

Comparisons of Alternatives Based on EMF

While the exposure assessment in the SDEIS does describe "the magnetic field environment and allow[s] a general comparison of project alternatives [4/130]," this could have been done without creating the impression that changes in calculated exposure of at least one or several milligauss were of known significance. For example, someone who reviewed the comparison found in Tables 13-15d and C1-C8 might want to know whether a reduction in calculated magnetic field level at three homes and commercial buildings by more than 10 mG for Option 1 (Table C-2) is preferable to increases of between 1 - 5 mB at 40 similar locations for this same option (Table C-1). Or, they might want to know what is the real difference between exposures to magnetic fields at levels of 1-5 mG and 5-10 mG. Such questions about impugned impact cannot be answered from the information available either in the SDEIS or anywhere in the scientific literature.

Also, one would want to know more clearly how these calculated magnetic field levels relate to ambient background magnetic field levels. In Section 4.D.14, the SDEIS comments on sources of magnetic fields in homes other than transmission lines, e.g., appliances, and on a nation-wide survey of magnetic field in residences (Zaffanella, 1993). However, this information should have been, but was not, integrated into the comparison of site specific impacts. One's perspective on the calculated increases and decreases in exposures for specific corridor segments (that overwhelmingly fall into the category of >1 to 5 mG) changes when one learns that the background level of magnetic field in a home (away from any appliances) ranges from 0.5 mG to 4 mG.

As I pointed out in my review of the DEIS, contribution to exposure from sources other than transmission lines cannot be ignored. The proper interpretation of the incremental exposures calculated in the SDEIS can only be made in the context of ambient exposures from all sources. For example, by focusing just on incremental magnetic field exposure from transmission lines, the SDEIS fails to take into account other important sources. For example, one of the most striking findings of the nationwide

survey of residences just mentioned (Zaffanella, 1993) is that peak magnetic field exposures in residences are more likely to be caused by currents flowing on grounding systems than from outside power lines. These data are summarized in Table 1 attached to this letter. The calculations presented in the SDEIS take no account of magnetic fields from this or other indoor sources. Such findings clearly illustrate why the approach taken by the SDEIS is incomplete.

Interpretation of Individual Scientific Studies

I had made the point in my review of the DEIS that in "characterizing the state of scientific knowledge, it is important that the whole body of relevant data be addressed, not just a few selected studies." Yet despite this caveat, the SDEIS attempts to substitute its own evaluation and characterization of individual studies for overall assessments by multidisciplinary panels of scientists convened by scientific and regulatory organizations. Moreover, the literature discussed is selective and not up-to-date. For this reason and because of the failure to incorporate all relevant and up-to-date studies, the Summary of Biological and Epidemiological Studies Relating to EMF contained in Appendix C is wanting.

For example, the meta-analysis published by Washburn et al (1994) is described, but the strengths and weaknesses of this approach are not also considered. Recently, Feychting and Ahlbom (1995), the authors of the so called "Swedish study" summarized telling criticisms of the Washburn et al. approach and concluded that:

'...not even a state of the art meta-analysis appears to provide further insights for the interpretation of the epidemiologic literature on magnetic fields and childhood cancer. Indeed, the paper...provides a clear example of the limitations of meta-analysis in observational epidemiology..."

In a response to a comment about the lack of discussion or qualification given to odds ratios in the London et. al. (1991) study in the DEIS, the SDEIS replies that "Although the odds ration was not statistically significant after adjustment, the trend for increasing leukemia risk with increasing current capacity [o]f the power lines remained statistically significant after adjustment [for other potentially confounding exposures]" (9/242). While this statement describes a finding from the report, it hardly serves as a critical assessment of the study's findings. As pointed out by Bracken et al (1992), such an interpretation of this trend is misleading and incorrect. What the trend analysis shows is that the lowest level of exposure is associated with a statistically significant reduction in estimated risk. Contrary to the interpretation suggested in the SDEIS, no

statistically increased risk is suggested at any exposure level when adjustment is made for confounding factors.

The findings of other important studies are neglected outright, such as the absence of any strong or consistent associations with brain cancer in Theriault et al (1994), and the overall lower mortality risk from cancer and other diseases among utility workers as compared to other men in the U.S. population reported by Savitz and Loomis (1995).

Still other studies that shed light upon topics addressed in Appendix C also are not addressed, e.g. the failure to find associations between estimated magnetic field exposure and adverse reproductive outcome in Savitz's retrospective study (Savitz and Ananth, 1994) or in the prospective study published by Bracken et al (1995) that included magnetic field monitoring of individual pregnant women prior to delivery. Both studies could have been discussed on pp. 9/243 and C/4. Nor does the SDEIS provide an up-to-date characterization of the position of the Swedish health and regulatory agencies. Attention is given to assessments from 1993 in the SDEIS but when updated in 1994, all that is provided is a paraphrase from a newsletter. The latest assessment, prepared by a panel of 15 experts and reviewed by 31 other scientists, that was published by the Swedish National Board of Health and Welfare and became widely available in January, 1995 is not reported in the SDEIS. It was the conclusion of the panel that:

The existing epidemiological data cannot be used to support any definite conclusions as to whether exposure to electromagnetic fields increases the cancer-risk in any organ system. Subsequent experimental studies carried out on animals and in vitro have not lent support to the suspicion of a carcinogenic effect. However, the possibility of their being a link between exposure and risk cannot be ruled out; especially with regard to child leukemia. [p.203].

For the reasons summarized above, the SDEIS and Responses to Comments have not responded to most prior criticism of the DEIS. However, I hope that these comments will be helpful in providing a scientific perspective on the issues addressed by the SDEIS.

Table 1

Percent of Residences Where Peak Magnetic Field Exceeds Reference Value from Power Line or Grounding System Sources

(Zaffanella, 1993)

Reference Value	*Power Lines*	*Grounding System*
> 1 mG	*34*	*36*
>2.5 mG	*10*	*18*
>5 mG	*2.9*	*6.8*

[Doug Loreen NWTP-04-019
Puget Sound Power and Light Co.]

Response: BPA recognizes that the public is concerned about EMF, and we recognize the science is uncertain regarding a cause-and-effect relationship between EMF and adverse health effects. However, we do not agree with Dr. Bailey's opinion that the existing scientific evidence on EMF, and reviews by scientific panels do not warrant the kind of exposure assessment conducted in this EIS. While it is true that science reviews generally conclude that EMF have not been proven to cause health effects, many acknowledge that the possibility of such effects cannot be ruled out. A good example is the last sentence of the quote from the Swedish National Board of Health included in Dr. Bailey's comments, "However, the possibility of there being a link between exposure and risk cannot be ruled out; especially with regard to child leukemia." Not mentioned by Dr. Bailey is a recent report from another Swedish agency, the Swedish National Electrical Safety Board (NESB). In its most recent annual report (1994) the NESB stated:

> During the spring of 1994 those organizations [the five Swedish agencies involved with EMF] concluded that the knowledge regarding how weak magnetic fields affect humans is currently insufficient to set limits. Suspicion of a connection is however sufficient to recommend caution. Therefore, these guidelines should be followed in housing planning and construction if they can be implemented within reasonable costs:
>
> - Strive to site power lines and electrical facilities in such a way that magnetic fields are reduced.
> - Avoid building new homes, schools, day care centers, etc., in close proximity to existing power lines which have significant magnetic fields, if alternative sites are available.

- Strive to limit significant fields in existing homes, schools and work places.

Another recent review on EMF not cited by Dr. Bailey comes from the American Medical Association (1994). The AMA stated:

> Positive [EMF] studies indicate, for the most part, that the associated relative risks are low.... Yet without stronger evidence there is no problem, it would be unwise to dismiss the possibility that electromagnetic fields have adverse health effects."

We believe that the cautions raised in these and many other reviews, and the concerns expressed by the public to BPA about EMF, justify the careful and cautious approach to addressing EMF exposures adopted in this EIS. BPA is not unique in this view. For example, in 1992, the Advance Plan 6 of the Public Service Commission of Wisconsin stated, "When a utility plans its transmission line projects, it must take into consideration the number of persons who could be exposed to EMF along the routes, the intensity of exposure and the duration of exposure."

We recognize that there are differing opinions, such as expressed by Dr. Bailey, on the best approach for dealing with EMF while scientific research is still inconclusive. Another recent review by the American Physical Society, for example, states:

> ... unsubstantiated claims, however, have generated fears of power lines in some communities, leading to expensive mitigation efforts, and in some cases, to lengthy and divisive court proceedings.... The diversion of these resources to eliminate a threat which has no persuasive scientific basis is disturbing to us.

Other comments by Dr. Bailey continue to focus on criticism of EMF studies which reported positive effects, although we believe it would be more balanced to describe, when available, the response of the original authors to comments on their study. For example, comments on the meta-analysis by Washburn et al. are stressed by Dr. Bailey, but the reply to the comments by the authors of the study are not mentioned. Many negative EMF studies have also been criticized on a variety of grounds, but Dr. Bailey is silent on this point. We believe that it is important to present a balanced assessment of EMF issues and research such as done in the EIS and in BPA publications incorporated by reference.

One of these publications has been recently updated for 1995, *Electric Power Lines Questions and Answers on Research into Health Effects.* We believe that this publication presents an objective summary of EMF issues and research from throughout the world, as of spring 1995. The recent Swedish review, and the new study by Bracken et al., cited by Dr. Bailey, were already referenced in the report, prior to our receiving comments from Dr. Bailey. Many other new EMF studies showing both positive and negative findings

which were not mentioned by Dr. Bailey are also included. As with the previous edition, this new publication is incorporated by reference into this EIS.

In summary, we believe that the EMF exposure assessment, the summary of research findings and science reviews presented in the EIS and in publications incorporated by reference, represent an appropriate and prudent approach for a public agency to take in response to an international public health issue which is of great concern to some members of the public.

Comment: Since EMF is being proven more and more as a problem source - what type of investigation and research have you done?

[Barbara Landrock NWTP-2-36/2]

Responses: BPA's Biological Studies Task Team continue to follow the research being done. Recent important findings are summarized in the Supplemental DEIS in Appendix C. Research is also discussed and summarized in our 107-page booklet entitled *Electrical and Biological Effects of Transmission Lines.* This is available from BPA free of charge.

Comment: Who is funding, preparing EMF studies?

[Cary Schmidt NWTP-2-98/1]

Response: There are hundreds of studies on EMF currently being conducted throughout the world. They are funded from a variety of sources, governments, including the Department of Energy, the utility industry and a host of private organizations.

Comment: BPA is telling us that the studies are not conclusive. That statement is not correct. Several of the studies are conclusive, some are not. We could argue this indefinitely, just as the tobacco industry argued indefinitely that cigarette smoking was not harmful.

[Sharon Hoofnagle, D.V.M NWTP-2-97/1]

Response: All studies have conclusions. Some appear to find effects, some appear to find none. There has been no conclusive body of findings within the research community that would establish a definite cause-and-effect relationship between EMF and adverse health effects (as has been established for tobacco and health effects).

Comment: Electric and Magnetic Fields ("EMF"). Similarly, the DEIS's discussion of EMFs should focus on fact, not perception. In this regard, Puget Power is guided by the consensus of the scientific community as reflected in statements published by the Environmental Protection Agency (EPA) and other credible bodies. In this regard, the

EPA states: The bottom line is that there is no established cause and effect relationship between EMF exposure and cancer or other disease. For this reason, we can't define a hazardous level of EMF exposure. Environmental Protection Agency, "Questions and Answers About Electric and Magnetic Fields (EMFs)," at page 3 (December 1992). Puget Power's comments on EMF are further elaborated in the attached letter to John Campion from Dr. William H. Bailey.

[John Campion NWTP-2-84/14]
Puget Sound Power & Light Co.

Response: The DEIS stated in Appendix C/3 that no hazardous effects of EMF have been confirmed, and it is not possible to identify unsafe field levels.

Comment: However, to the extent that the public's concerns relate to potential health impacts of exposures to EMF from the addition of proposed transmission lines or modifications to existing lines, the DEIS must: a) accurately reflect the state of scientific knowledge relevant to such concerns; and b) assess the potential significance of exposures based upon health risk assessments made by scientific regulatory agencies. In both respects the DEIS can and should be significantly improved.
[...]
The ideal approach to characterize both the state of scientific knowledge regarding epidemiological and laboratory research on EMF and its potential health significance (and so meet the requirements of the DEIS) is to summarize the findings of comprehensive scientific reviews performed by multidisciplinary panels of scientists. Yet, while mention is made of some scientific reviews (p.4/151), the DEIS makes no attempt to use the conclusions of these reviews or other performed for health agencies to either summarize or gauge potential impacts of EMF exposures.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/16
Puget Sound Power & Light Co.]

Response: The Supplemental DEIS contains additional information on scientific reviews about EMF.

Comment: Now in our capitalistic society, if we're not willing to print that or what, I don't know. Why aren't those studies [like the Swedish Study] printed in the US or in the environmental impact statement?

[Craig Langager NWTP-2-57/13]

Response: The Swedish Study has been published in the U.S. (Feychting, M., et al. 1993. *Magnetic Fields and Cancer in Children Residing Near Swedish High-voltage Power Lines.* American Journal of Epidemiology. 138(7): 467-491.) A brief summary of the findings of the study are included in Appendix C-1 of the Supplemental DEIS.

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-86

Comment: [Appendix p.C/1] The first four paragraphs summarize six studies of childhood cancer in relation to presumed exposures to magnetic fields from electrical utility facilities, but do not provide the findings of scientific reviews and assessments of these studies (see reviews previously cited). For example, the only comment that is referenced on the Swedish Studies is a press release that contains a statement as to how one agency may develop policies on EMF and the statement that "...a connection between cancer and magnetic fields has not yet been scientifically proven" (p. C/2). In fact, there are differences in the thinking of different Swedish government agencies on this issue, and none as yet have issued health-based policy recommendations.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/25
Puget Sound Power & Light Co.]

Response: Updated information on childhood cancer studies and on the Swedish governments activities regarding EMF are included in the Supplemental DEIS.

Comment: It is extremely misleading to simply characterize the assessment of the EPA's Science Advisory Board (SAB) as having "...reached a similar conclusion" as the draft EPA report of 1990. [...] From the perspective of these consensus reports of the scientific community, it would appear to be arbitrary to suggest that the "exposure assessment" contained in the DEIS in any sense identifies or quantifies risk or impacts to public health and safety.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/26
Puget Sound Power & Light Co.]

Response: More information on the EPA reports on EMF is included in the Supplemental DEIS. The exposure assessment in the DEIS was not intended to quantify health risk from exposure to EMF.

Comment: In regards to the electromagnetic health situation with electric power lines. I'd like to see the environmental impact statement contain information on the London-Peters study. And I'd like to see the environmental impact statement contain some documentation from a specific study, and that would be one to use.

[Mike Kaufman NWTP-2-57/20]

Similar comment from: *[Mike Kaufman NWTP-2-57/21*
Pat Wheat NWTP-2-57/22&23]

Response: Many studies have been done and are summarized in the DEIS. This includes the study by London et al. (1991). They can be found in the Supplemental DEIS in Appendix C-2.

Comment: [Appendix p.C/1] The odds ratio for the London et al study is given as 2.15 without qualification or discussion. When the authors adjusted this crude odds ratio for other potential confounding exposures, the odds ratio dropped to 1.73 and was not statistically significant (London et al, 1991--p.934).

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/24
Puget Sound Power & Light Co.]

Response: Although the odds ratio was not statistically significant after adjustment, the *trend* for increasing leukemia risk with increasing current capacity if the power lines remained statistically significant after adjustment. This information on the study by London et al. (1991) is included in the Supplemental DEIS.

Comment: I also have these comments: We don't like your going ahead on upgrading the lines while the results are still out on the health risks. We strongly protest this.

[Jon & Dena Fleurichamp NWTP-2-50/2]

Response: We recognize your concern. We are continuing to monitor research results as they are available.

Comment: I don't think the study is in depth enough, especially the increase of the fields really bothers me because I have two young children.

[Tom Lingbloom NWTP-2-57/17]

Response: Without more information it is difficult to respond to the first part of the comment. We believe that we have provided enough information to compare options from an EMF standpoint. Please refer to the graphs presented in Appendix C.

Comment: Is there any link to Power lines and birth defects?

[Marilyn Martich NWTP-2-98/11]

Response: Although some studies have reported associations between birth defects and power lines, no causal link has been established. A recent review of 21 studies relating to reproductive risks of EMF found that while there does not appear to be a measurable risk of reproductive failure and birth defects from EMF exposures in humans, reproductive risks from EMF cannot be summarily dismissed. The authors suggest that further epidemiological investigation is warranted. (Brent et al., 1993)

2. TECHNICAL: ELECTRICAL

Comment: Does the larger sized line cables carry an increased average load? And will this increase not cause a proportionately increased EMF?

[Sam Leathers NWTP-2-44/4]

Response: Not necessarily. Magnetic fields are a result not only of the current flow, but also of the design of the lines. For example, Options 3 and 4 of this project would switch the more heavily loaded electrical circuits in many segments of the corridor to location on transmission structures that either (a) maximize the advantages of double-circuit field cancellation and /or (b) place these circuits farther away from the public. Such techniques can help to minimize (and in some cases actually reduce) magnetic field exposures beyond the transmission line corridor.

Comment: The DEIS also does not address the cumulative impacts, as required by NEPA, on EMF when combined with the existing lines parallel to the proposal.

[Larry Kunzler NWTP-2-86/2]

Comment: Appendix C2, Tables C-1 through C-3: Were figures generated assuming one 500-kV line or two?

[Patricia Decker NWTP-2-90/12
City of Bellingham, Planning & Community Development Dept.]

Response: Actually, the concept of exposure assessment used in this Supplemental DEIS involves modeling **all** lines on the corridor (existing and new) and assessing relative impacts (in terms of possible exposure changes) resulting from the addition of the new line. Please see Appendix C-2 and C-3.

Comment: *Of the choices offered, I do not like:* The increased EMF along Pacific Street in Bellingham. The subject has not been adequately explained as to public health impact or economic impact. What does greater than 1 mG increase mean?

[Sam Leathers NWTP-2-44/1]

Response: As noted in the Supplemental DEIS, there are no standards for magnetic fields. We feel that our obligation regarding the EMF issue is to characterize how the electric and magnetic field environment might change due to the project. Thus we have analyzed these potential changes and described them in the Supplemental DEIS. We are unable to predict specific health risks related to exposure to EMF. We use the term "greater than 1 mG" (milligauss) to describe how the magnetic field environment is changing. If you wish additional background on this subject you may obtain from BPA (free of charge) *What We Know (and Don't Know) About EMF.*

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-89

Comment: The failure of the DEIS to properly take into account relevant health assessments of the EMF literature also is reflected in the method by which the DEIS compares potential impacts of EMF across project alternatives. [...]

What the DEIS does not tell the reader, however, is that there is no scientific basis to use any particular level of exposure to compare potential impacts. As pointed out by the EPA, 1992: We don't know if EMF exposure is harmful (aside from the concern for electric shocks and burns for extreme exposure). We don't know if certain levels of EMFs are safer or less safe than other levels (p.3).

Hence, although the DEIS contains the above caveat, the exposure assessment reported in the DEIS is inappropriate given the level of scientific knowledge concerning potential effects of exposures to EMF. The type and specificity of the comparisons made cannot help but to imply that exposures to magnetic fields above 1 mG are hazardous. Such unfounded implications may create public anxiety and confusion.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/17
Puget Sound Power & Light Co.]

Comment: More detailed characterizations that compare numbers of homes expected to differ in estimated annual average magnetic field levels in 1 mG increments from 1 to >6 mG are even more misleading. The problem is analogous to the problem of specifying the accuracy of measurement to the nearest 0.0001 of a unit, when the uncertainty in the units read by the measurement device itself is 10 units.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/18
Puget Sound Power & Light Co.]

Comment: The approach used in the DEIS to assess potential impact of EMF is also inconsistent with the fundamental tenant of environmental impact assessment that "...impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions..." (NEPA 1508.7, 1986) be considered. The DEIS makes no estimate or determination of the existing range of ambient exposures to magnetic fields in homes and therefore fails to relate the projected incremental exposure from the proposed project relative to existing magnetic field exposures that occur under the no build scenario. The appropriate methodology was identified in the DEIS but only was partially implemented: An EMF exposure assessment is done by first estimating what future EMF levels would be without the new project. [Emphasis in original] (p.4/151).

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/19
Puget Sound Power & Light Co.]

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-90

Response: The DEIS did not refer to magnetic fields above 1 mG. Perhaps the commenter is confused about the reference given to *increases* of more than 1 mG. As stated in the DEIS, "Many assumptions are made in the process of calculating these magnetic field levels; therefore, we cannot accurately predict changes in exposure of less than 1 milligauss." As the DEIS (and the Supplemental DEIS) explains, these estimated magnetic field levels were calculated for the purposes of doing an exposure assessment and comparing potential increases and decreases of magnetic field levels to people along the corridor for each design option. Additionally, the DEIS stated that unsafe EMF levels cannot be identified but that human exposure to magnetic fields can be estimated. Because of scientific uncertainty over this issue, and strong public concern, BPA believes that methods used in the EMF analysis are appropriate. These methods do not imply that these fields have been proven to be harmful, and they do not necessarily add to further public anxiety over this issue.
Average background magnetic field level exposures in homes are covered in the Supplemental DEIS in section 4.D.14.

Comment: Magnetic field profiles were calculated for existing transmission line corridors and then compared to Option 1, 2 and 3. However, contributions to exposures from sources other than the existing transmission facilities were completely ignored. The incremental exposure to magnetic fields from transmission facilities may be less than existing background levels, and is not necessarily additive (or subtractive) to the total exposure that members of the public receive from all existing sources (transmission lines, distribution lines, household wiring, appliances, stray currents on water pipes, cable and telephone installations) at home, work or school. One might assume that such background exposures are the same for individuals for existing and alternative Options and so can be disregarded. This is not appropriate because this approach fails to convey the point that for most of the public the incremental impact is but a fractional addition to their existing total exposure.

Hence, it is the failure of the method employed, not the goal to address EMF exposures that is of importance.

The DEIS could have compared the relative numbers of residences along each of the proposed alternatives to assess potential socioeconomic impacts, or used similar information to assess advantages of one route over another with respect to EMF in a global sense (of reducing potential exposures at no or low cost), and therefore public concerns about EMF. An exposure assessment at this level of analysis is appropriate and is not misleading. In contrast, the underlying basis for the exposure assessment performed in the DEIS is so weak that the entire attempt at quantitative comparisons between project alternatives at the level of single homes based upon magnetic field levels should be dropped.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/20&21
Puget Sound Power & Light Co.]

Response: We believe that the methods used to assess potential public exposure are adequate to allow a comparison among project alternatives.

Comment: We request that you, at your time and expense, conduct a complete EMF study, during times of the most intense EMF, on our property before you commence the Transmission Project (your representative said you would do this).

[Ray & Dolly Tompkins NWTP-2-67/2]

Comment: The EIS states in here that the milligauss is 60. This last summer I was out with BPA representatives underneath the power lines and getting readings over 80.

[Steve Wight NWTP-2-57/14]

Comment: Mr. Langager said that his group has been taking EMF readings 5 times a day and is coming up with higher readings than documented in our EIS.

[Craig Langager NWTP-2-56/4]

Comment: re. EMF calculations - [Commenter] lives on hill (about 300 feet) but are a little higher than conductor - so are wondering if calculations are correct for their house.

[Bill Carroll NWTP-2-98/6]

Comment: Height of conductors above ground (does height above ground make difference for EMF exposure?)

[Scott Terrell NWTP-2-98/5]

Response: As mentioned in the document, the milligauss levels presented in the DEIS are based on annual *average* loading data -- conditions that are likely to occur in the year 1997. However, the magnetic fields produced by transmission lines vary constantly with time (because magnetic fields are directly related to current flow on the lines, which in turn depends on our customer's constantly changing demand for electric power). As a result, it is not unexpected that, at times, field levels on the existing corridor could exceed the typical average levels reported. If spot measurements are taken on the line, they can be higher or lower on any given day than the average numbers displayed in the document. (Please note that, as reported in the Supplemental DEIS, annual *peak* levels under normal system operating conditions are estimated to be twice the typical *average* levels.)

BPA personnel made spot measurements of magnetic field levels at your [Tompkins] property on the morning of 1/27/94. However, the transmission lines were not heavily loaded at this time. Higher field levels would result during times of heavier line loading. While it is difficult to predict exactly when these heavy load conditions might exist, additional measurements can be arranged upon request.

The magnetic field at any given point in space is a function of the total distance from this point to the power-line conductors, (wires). For most locations beyond the edge of the transmission line right-of-way, the vertical distances (of either the wires or the point in space) are usually small compared to the horizontal distances and therefore have small effects on the total distance. This, in turn, results in small effects on the magnetic field level.

Comment: Chapter 4/150, Table 12. Does this analysis assume lines are the same distance above the ground and from the edge of the right-of-way?

[Patricia Decker NWTP-2-90/10
City of Bellingham, Planning & Community Development Dept.]

Response: The values for electric and magnetic fields reported in Table 12 in Chapter 4 represent typical levels that might be found system-wide. Generally, the data reflects overall mid-span conductor heights (distances above ground at mid-span) which typically are not the same for the three voltage classes (500-, 230-, and 115-kV). Right-of-way distances (from line center) vary slightly between voltage classes, ranging from 12-15 m (40-50 ft.) for 115 and 230-kV to 18-23 m (60-75 ft.) for 500-kV.

Comment: Chapter 4/177: Is this electric field value 7.6 meters from the base of the pole, or from the line approximately 16 meters above the ground?

[Patricia Decker NWTP-2-90/11
City of Bellingham, Planning & Community Development Dept.]

Response: The 7.6 meters refers to the horizontal, ground-level distance beginning directly under the line center. It does not refer to the distance from the wires themselves.

3. MITIGATION/PROCESS

Comment: 7. If this project were to be implemented, the EIS does not state what the maximum potential EMF radiation could be at the easement boundary. All EIS statements refer to some presumed load and never address the maximum load potential. The EIS must include these details.

[Martin Eifrig NWTP-04-015]
FAIR (Families Against Increased Risk)

Comment: These proposals increase your power transmission capacity. The EIS should specify the maximum current load that the new lines are capable of carrying and make an EMF comparison between this "line limit" case and the today's loadings. In addition, we believe that a mechanism should be included in your EIS that specifies how families will be informed when current loading is increased beyond what is outlined in your three options.

Property buyout offers/compensation must be offered in the event of increased EMF's over the baseline data.

[Kate & Martin Eifrig NWTP-2-62/4,6&7]

Comment: If the EMF beyond the easement is greater after the project, what recourse do we have, how will you correct it, and what compensation will you make to all of those of us along the corridor, whose health you are putting in jeopardy?

[Ray & Dolly Tompkins NWTP-2-67/3]

Similar comment from: *FAIR 94-0085/6&8*
Ed Serna NWTP-2-98/3]

Response: Electrical loads (current flow) are constantly changing--responding to demands for electrical use. It is not possible to notify people along the corridor when loadings change. As discussed above, we have estimated the annual average loads to the best of our ability to do so.

Information as to whether magnetic field exposure is increasing or decreasing for each segment of the line is provided in Appendix C-4. BPA has no plans to compensate for increased electric or magnetic field exposures.

Comment: *You could improve the choices by:* offering a choice where the lines will not present an electromagnetic field anywhere outside the power line right-of-way.

[Wayne Hoofnagle NWTP-2-79]

Response: While there are no reasonable ways to eliminate completely the magnetic fields outside the transmission line corridor, we have tried to provide alternatives which minimize impacts in terms of increasing public exposure.

Comment: *You could improve the choices by:* Holding EMF levels at present level - perhaps splitting the delivery system along impacted streets.

[Sam Leathers NWTP-2-44/2]

Response: We believe the commenter may be referring to Puget Power's portion of the project. As with BPA's part of this project, we believe that Puget Power is attempting to maximize use of the existing facilities. Please note the relatively minor change in the magnetic field environment associated with their facilities.

Comment: EMF: Is BPA going to choose the plan with the least EMF?

[Craig Langager NWTP-2-53/3]

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-94

Response: An option will be selected that is balanced with all environmental issues and other decision factors, such as reliability and cost.

Comment: *I think the analysis would be better if you:* provided statistics on present EMF levels and projected levels. Show percentage increase with graphs or charts.

[Sam Leathers NWTP-2-44/3]

Response: Present levels and expected increases and decrease after the project are shown in the Supplemental DEIS in Chapter 4 and in Appendix C.

Comment: The "industry-accepted computer modeling techniques" probably refers to computer programs developed by BPA. These should be explicitly identified, referenced, and all the assumptions used in modeling specified.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/23
Puget Sound Power & Light Co.]

Response: BPA's "Corona and Field Effects" computer program was used to calculate all magnetic field profiles. In addition to providing a reference for this program, Appendix C-3 describes the assumptions used in the analyses.

Comment: Although the term EMF is not defined in the DEIS until p.4/148, it is clear the acronym is used for both electric and magnetic fields as referred to on this page and in the BPA Interim Guidelines on Electric and Magnetic Fields. This usage leads to logical inconsistencies in that the BPA Guidelines calls for EMF exposure, i.e. electric and magnetic field exposure to be addressed, but electric field exposures are not addressed in the literature review and exposure assessment of the DEIS.

[John Campion/William H. Bailey, Ph.D. NWTP-2-84/22
Puget Sound Power & Light Co.]

Response: Thank you for noting the lack of definition for this acronym. We will correct it for the Supplemental DEIS. Electric fields are discussed in the Supplemental DEIS in section 4.D.14.

Comment: *I think the analysis would be better if you*: consider the effects of EMF on humans and wildlife, instead of increased revenue for BPA to customers outside of our county.

[Vivian S. Barnes NWTP-2-81/2]

Response: We encourage the reader to study carefully the Health and Safety sections in the Supplemental DEIS. They present information that BPA believes is objective and more complete than to be found in many other EISs. Additional general information about magnetic fields and potential impacts is also available from BPA upon request as indicated.

Comment: EMF should be mitigated based on vast response of the public.
[Cary Schmidt NWTP-2-98/2]

Response: We recognize that the public is concerned about this issue; we have therefore carried out a comprehensive exposure analysis to compare alternatives.

R. EIS: For Your Information

Comment: The draft supplemental EIS evaluates a new alternative called "Option 1" which evaluates additional information that was provided by the public during the comment period on the draft EIS.

[Joan Cabreza NWTP-04-007]

Response: Option 1 was discussed in the Draft EIS. It is identified in the Supplemental Draft EIS as the Proposed Action. The Supplemental Draft EIS evaluates several new alternatives identified by the public and also explains how the purpose and need for the project has changed.

Comment: Need - What has changed from the earlier EIS to the present proposal?

[Jim Cumberland BOH-29]

Response: Please note the first page abstract in the EIS and the general discussion of the need for this project. The basic differences between the description of the need in the original Draft EIS and the Supplemental EIS is the decreased emphasis on the local need and the increased emphasis on transfer need. The Draft indicated there was a significant local need and a need for increasing the intertie capacity. The Supplement reverses the proportion, with a greater need to upgrade the Intertie capacity, and adminished need to improve local reliability. Given the construction of generation facilities in local Whatcom County area and Puget Power's upgrade of its local transmission system, the local reliability is no longer as much of a problem. However, the intertie capacity increase is even more important, due to greater need to be able to buy and exchange power with Canada when it is cost-effective to do so.

Comment: BPA's danger tree crew appears to have been overzealous in marking trees that need to be cut (Segment K).

[Dennis Rittall SWOH-21]

Response: Originally, BPA had wanted to take trees based on construction clearing criteria that would have taken an additional 30-m (100-ft) width of trees. After hearing the concerns of the local landowners and others, we have decided to limit our right-of-way clearing to only those trees needed for normal maintenance purposes. The trees that are currently being cut along the transmission line right-of-way were identified using BPA's maintenance criteria. The criteria are designed to keep the corridor safe and operational, and to maintain reliability of BPA's existing transmission lines. The criteria consider a projected tree growth period to cover the next 8 years. These trees need to be cut regardless of BPA's decision on rebuilding this project. Very few additional trees would be taken for the construction of the proposed transmission line, and only in those areas

where there would be pulling and staging areas. Those areas will not be identified until the construction phase.

Comment: The entire environmental impact statement is written on an eighth grade level. There's no attention to detail in there whatsoever.

[Craig Langager NWTP-2-57/11]

Response: The DEIS and Supplemental DEIS are intended for a broad range of readers (citizens, groups, agencies, and officials); therefore, it is not only desirable, but a requirement to write it in "plain language," while striving to include enough information to discuss potential impacts. Readers are encouraged to refer to the appendices for more detailed information on some subjects.

Comment: And maybe the environmental impact statements should address some of the past promises. Interview some of the people that live along the corridor and find out what they have to say. And then see how they can respond to that.

[Mike Kaufman NWTP-2-57/18]

Response: The DEIS has been revised to better identify previous problem areas (with culverts and roads). BPA is also working with agencies/groups to minimize future impacts.

Comment: Cost: He also had trouble locating cost information in the DEIS.

[Craig Langager NWTP-2-53/6]

Response: The DEIS has been revised to present cost information more clearly. (See Sections 2.C.2 and 4.B.1.)

Comment: The following Figure and Map corrections are attached:
A-Figure 15.
B-Please update all applicable maps to show the City of Bellingham's current City Limits, as attached.
C-Please show the location of the future high school, on the northwest corner of McLeod and Magrath, east of the Mt. Baker Highway. Discuss the environmental implications of the maintenance of electrical transmission lines near such school.
D-Figure 23: Major land trades in the Lake Whatcom Watershed have added significant acreage to the Department of Natural Resources managed lands. Please show these changes in ownership.
E-Chapter 4/156: Please amend Table 14 to conform with changes to Figure 15.

[Patricia Decker NWTP-2-90/13

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-98

City of Bellingham, Planning & Community Development Dept.]

Response: The proposed map revisions have been reviewed, and the maps and table revised as needed. The proposed high school is far enough away from transmission lines involved in this proposed project that it would not be affected.

Comment: No-Action Alternative. Puget Power also suggests modification of the discussion of the no-action alternative. The discussion of the no-action alternative implies that Puget Power would not improve its transmission system if this project does not go forward. This is not the case.

In this regard the Council on Environmental Quality provides guidance: Where a choice of "no-action" by the agency would result in predictable actions by others, this consequence of the no-action alternative should be included in the analysis. Council on Environmental Quality, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, " 46 Fed. Reg. 18,026 (1981) (Response to Question 3).

As a public service corporation, Puget Power has a duty under state law to "furnish to all persons and corporations who may apply therefore and be reasonably entitled thereto, suitable facilities for furnishing and to furnish all available electricity... as demanded." RCW 80.28.110. In order to fulfill obligations to its customers, Puget Power will improve its transmission system in Whatcom and Skagit counties as necessary to address the deficiencies identified and discussed in the DEIS.

[John Campion NWTP-2-84/6
Puget Sound Power & Light Co.]

Response: The DEIS has been revised to show that under the no-action alternative, Puget Power would improve its local system as needed to meet its obligations.

Comment: Perceived Impacts. The DEIS appears, in places, to distinguish between impacts that are empirically demonstrable and impacts based solely upon public perception. Although Puget Power would certainly agree that public perception is important, it is also important that the public be presented with accurate information, so that perceptions are well informed and factually based. When perceptions are addressed, the DEIS should make it clear that notwithstanding a consideration of perceptions the identification and quantification of impacts is ultimately a question of fact.

[John Campion NWTP-2-84/12
Puget Sound Power & Light Co.]

Response: This DEIS has been revised to indicate that impact measures for slight, moderate, and considerable ratings are largely based on elements other than public perceptions.

Comment: Maps on Fact Sheets and other documents do not clearly identify location of lines. I have H-frame poles on my property (which are Puget Power's) and could not tell whether these were part of project or not.

[Carol Helgeson NWTP-2-98/36]

Response: The DEIS has been revised to better show which of BPA's lines would be affected by this project. Puget Power's lines that would be affected are wooden single-pole transmission lines.

Comment: Which side of right-of-way will new line be on?

[Robert Burnett NWTP-2-98/24]

Comment: The diagram that I saw in the environmental impact statement doesn't exactly reflect the placement of the towers in my neighborhood. It shows the smallest wooden poles to be between the two sets of steel poles, the smaller wooden poles to be between the two sets of steel poles.

[Philip Andress NWTP-2-57/4]

Response: The DEIS has been revised to more accurately show the location of existing transmission lines as well as which ones would be replaced. The position of BPA's wood pole H-frame that would be replaced depends on the segment you are referencing. The variations are shown on Figure 5.

Comment: Quantification of Impact. The environmental impact statement under preparation will, when finalized, serve as a basis for Whatcom County to exercise substantive SEPA authority. In this regard, Puget Power notes that no significant impacts are identified in the DEIS with respect to matters of Land Use, Vegetation (other than wetland vegetation), Fish and Wildlife, Agriculture, Visual Resources, Recreation, Cultural Resources, Noise/RFI, Social and Economic Considerations and matters of Health and Safety. The DEIS does identify some impacts to Soils, Wetland Vegetation, Wetlands, and Housing. However, the DEIS (and the Environmental Report submitted by Puget Power to BPA and Whatcom County) identify appropriate measures to fully mitigate these impacts. Highlighted portions of the Environmental Report which describe these mitigation measures are attached. Tabular summaries of impacts contained in the DEIS have also been revised and attached to correspond with the discussion of impacts and criteria in the DEIS.

[John Campion NWTP-2-84/15

Insert 19 - Comments and Responses
Placement: Replaces SDEIS Chapter 9-100

Puget Sound Power & Light Co.]

Response: The DEIS has been revised to incorporate the revised information.

The following are comments which pointed out needed corrections to the Draft EIS; the updates and changes have been made for the Supplemental DEIS.

Comment: Figure 20 shows protected and/or wild and scenic rivers. The only wild and scenic river in this area at present is the Skagit River above Sedro Woolley, not the Skagit below Sedro Woolley or the forks of Nooksack as shown in the figure. However, chapter 4, page 187 correctly documents this.

[Larry Wasserman NWTP-2-52/1
Skagit System Cooperative]

Comment: Figure 23, land ownership -- public and Tribal, fails to show the Upper Skagit Indian Reservation located in the NE 1/4 of Section 8. T.35N., R.5E.

[Larry Wasserman NWTP-2-52/2
Skagit System Cooperative]

Comment: Figure 21 shows resident and anadromous fish habitat. Hansen Creek (WRIA 03.0267) and its tributaries 03.0270 and 03.0271 have anadromous fish usage (both spawning and rearing) almost up to or beyond the power-line crossing. In addition, Red Creek (03.0268), the eastern tributary to Hansen Creek shown on the figure, is the water supply to the Tribal fish hatchery located on the upper Skagit Tribal Reservation. The attached map has the extended anadromous zones highlighted in green and the hatchery water supply highlighted in orange. Spawning surveys document coho salmon usage in both Thunder (03.0064) and Mills (03.0070) creeks. Coho salmon spawning has also been documented in the unnamed stream (03.0068) located between Mills and Thunder creeks. Many of the numerous wetlands along the Samish are important overwintering sites for juvenile coho salmon.

[Larry Wasserman NWTP-2-52/3
Skagit System Cooperative]

Comment: The Upper Skagit Reservation is not depicted in any of the DEIS maps. The depiction of the reservation areas (maps enclosed) would convey more accurately the land use pattern in the project area.

[Doreen Maloney NWTP-2-88/2
Upper Skagit Indian Tribe]

Comment: Figure 22 "County Zoning" has an error. The area at Southwest Quadrant of intersection of Guide Meridian and Smith Road should not be Urban Residential; instead it should be "Rural."

[Donna Nocamber NWTP-02-099A]

S. PROCESS COMMENTS

Comment: When FAIR proposed an alternative to your plan to erect a new double-circuit line on our properties, you discounted our reasoning strictly from a monetary viewpoint. Arrogance has been your strategy.

[Craig Langager NWTP-04-009
FAIR (Families Against Increased Risk)]

Response: We regret that BPA's actions have appeared to be arrogant. BPA's public involvement goals are: to make it easy for people to speak freely; to listen carefully to comments given; and to work cooperatively to achieve mutual understanding and solve problems. The concerns of FAIR and other Lake Shore Drive residents are well known to BPA. The North Shore and DNR alternatives were developed in response to comments from this group.

The added cost, increased environmental impacts of the North Shore and DNR alternatives, together with recent public support of BPA's proposed action, are reasons why BPA favors rebuilding the existing 230-kV wood pole transmission line to double-circuit.

Comment: Take into account all impacts.

[Bonnie Morehouse BOH-12]

Response: All impacts described in the EIS together with public comments will be considered in BPA's decisionmaking process.

Comment: In FAIR's past attempts to communicate with you and Whatcom County officials, you have deliberately chosen not to negotiate with our residents on North Shore Road. Your statement regarding discourse has been that you will only take comments. You will not answer any of our questions.

[Craig Langager NWTP-04-009
FAIR (Families Against Increased Risk)]

Response: BPA representatives attended a meeting of the FAIR organization on May 25, 1995. All questions asked were answered. Additionally, FAIR's comments have been carefully considered and responded to in this EIS.

BPA has for several years been engaged in the environmental review/public involvement phase of the decision making process for this project. BPA cannot make final decisions sooner than 30 days after the Final EIS is completed and mailed to the public. This ensures that all citizens have equal opportunity to have input to the decision process and ensures BPA's neutrality during predecision stages of a project.

Comment: We have no recourse if EMF increases.

[Ray Tompkins SWOH-4]

Response: BPA continues to monitor the EMF issue. But as stated on page 4/29 of the Supplemental DEIS, we believe that the state of scientific evidence has not established a cause-and-effect relationship between electric or magnetic fields and adverse health effects.

Citizens have a right to challenge the EIS if they feel that the National Environmental Policy Act has been violated. If a person desires to challenge the EIS, they must do so within 90 days of the date the Record of Decision is publicly available.

Comment: Is this a done deal? [decisions already made]

[Kathy Klemmer BOH-11]

Response: BPA has for several years been engaged in the environmental review/public involvement phase of the decision making process. BPA cannot make final sooner than 30 days after the Final EIS is completed and mailed to the public.

Comment: I would like a chance to review comments received by the June 20 close of comments, and before the Final EIS is distributed, so that I can review and comment on major issues brought up.

[Bonnie Morehouse BOH-15

Response: The Final EIS will be mailed to you. It will contain public comments on and BPA's responses to them. BPA will make a decision on the project 30 days after the Final EIS is completed and mailed to the public. Thus, you will have 30 days to review comments in the Final EIS, and, if you desire, make additional comments or decision recommendations.

Comment: BPA personnel were on his property, without letting him know ahead of time. Mr. Haner has requested that BPA contact him before entering his property on previous occasions.

[Gregory Haner NWTP-04-012]

Response: Those BPA personnel or those representing BPA have been instructed to notify those landowners who have requested to be contacted before they enter the property. We regret that events such as this occur occasionally.

Comment: The proposal violates the Eminent Domain Law and the Designated Forest Land Act of 1971.

[Charles F. Lappenbusch Sr. NWTP-04-002]

Response:

Note that this question has been answered earlier, under Section H, Permits/Laws in this insert.

Comment: We invite . . . BPA representatives to a private FAIR meeting where we can detail our concerns regarding this project. Our concerns fall into four general categories: 1. Health and environment. 2. Reduced property values. 3. Project justification. 4. Alternate alignments and configurations. I request that you ensure that staff with the proper expertise is in attendance to fully discuss each of these issues. We will be holding the FAIR meeting on Thursday, May 25, 1995 at 8:30 a.m. The meeting will be held at the Cascade Natural Gas office in Bellingham, Washington. The address is: 1600 Iowa Street, Bellingham, WA.

[Martin Eifrig NWTP-04-004
FAIR (Families Against Increased Risk)]

Response: BPA representatives attended this meeting as requested.

Comment: Some of the comments Puget Power provided on the DEIS have been addressed in the SDEIS. However, significant issues address in Puget Power's DEIS Comments remain matters of concern. Rather than restating the DEIS Comments in their entirety, Puget Power incorporates its DEIS Comments herein by this reference and resubmits its DEIS Comments as comments on the SDEIS.

[Doug Loreen NWTP-04-019
Puget Sound Power and Light Co.]

Response: BPA has again reviewed Puget Power's comments. Where comments amplify and further define Puget Power's proposed 115-kV line, and where prior comments correct matters of fact and which were not corrected in the SDEIS, these changes have been made via errata sheets. Where Puget Power's comments question environmental analysis methods or suggest a different analysis conclusion, such as for EMF, BPA chooses to disagree and no changes are made in the EIS.

Comment: Withdraw Determination of Significance. The SDEIS describes how this project has changed from its inception. The environmental record runs from Puget Power's original proposal (see "230-kV intertie with B.C. Hydro" discussed in the SDEIS on page 2/39), to the first joint BPA/Puget Power project (see "E4A Plan" discussed in

SDEIS on page 2/40), to the "Puget Power Part of the Project" described in the DEIS, to the current "Puget Power Part of the Project" described in the SDEIS on page 2/31. As the project has changed, the activities to be directly undertaken by Puget Power have diminished. Puget Power's portion of the project now involves the rebuild of an existing 115-kV line and associated work inside of substation fences.

The need to undertake detailed environmental review for purposes of both NEPA and SEPA was initially driven by the fact that both BPA and Puget Power were proposing new construction. Were Puget Power to propose its current portion of the project (without the pipeline alternative) as a project independent of BPA's system improvements, the proposal would be categorically exempt under SEPA. Wee WAC 197-11-800(3) (as to repair and maintenance of the existing line) and WAC 197-11-800(24) (as to work inside the substation fence).

Puget Power does not, however, intend to assert categorical exemptions at this juncture of the proceeding. However, Puget Power does not believe that the project, as currently proposed, requires completion of an environmental impact statement for purposes of SEPA. Rather, the rules which ought to guide Whatcom County's further involvement in environmental review are WAC 197-11-610 (use of NEPA documents) and WAC 197-11-360(4) (withdrawal of a DS). Whatcom County should adopt the SDEIS to the extent necessary to address its consideration of related BPA actions associated with decisions it may make with respect to Puget Power's portion of the project. As to Puget Power's portion of the project, Puget Power submits that for purposes of WAC 197-11-360(4), "the proposal has changed" such that there are no longer any "probable significant adverse environmental impacts." To this end, the DS should be withdrawn and an MDNS issued in its place.

[Doug Loreen NWTP-04-019
Puget Sound Power and Light Co.]

Response: BPA has requested clarification of Puget Power's intentions with respect to this comment. Their response is intended to place into the record their assertion that their 115-kV line as currently proposed no longer requires completion of an EIS under the Washington State Environmental Policy Act. They are not intending to alter the joint Federal (BPA)/State (Whatcom County) EIS approach that has been pursued from the onset.

BPA has also contacted Whatcom County regarding Puget's assertion. Whatcom County has indicated that Puget Power's assertions may be correct, but that they are not planning to withdraw from joint preparation of the EIS.

Comment: Existing Conditions, GMA and Quantification of Impacts - Assuming the SDEIS is finalized for purposes of NEPA and SEPA, and SDEIS's discussion of Puget Power's portion of the project is lacking. Specifically: Puget Power's portion of the

project utilizes existing utility facilities and corridors. These existing conditions (i.e., utility facilities and corridors) are not sufficiently recognized in Chapter 3 of the SDEIS, pages 3/55 through 3/60. Leaving this information out of the "baseline" will result in overstatement of project impacts. The concern is addressed further in Puget Power's attached mark-up of select portions of the SDEIS.

The Growth Management Act and implementing efforts underway in Whatcom County and City of Bellingham give clear preference to further development of existing utility facilities and corridors. These preferences do not appear to be reflected in the SDEIS. Puget Power has made no small effort to alter its facility plans to fit local land use plans. Puget Power would certainly hope that Whatcom County, as lead agency for purposes of SEPA, and in consultation with the City of Bellingham, will acknowledge in the FEIS that this project is the result of coordinated planning.

The SDEIS quantifies impacts of the Puget Power portion of the project in a way that is confusing for purposes of SEPA. The terms "considerable," "moderate" and "slight" are not terms used to quantify impacts for purposes of SEPA. Impacts for purposes of SEPA should be discussed in the context of their significance (or lack thereof). This concern is addressed further in Puget Power's attached mark-up of select portions of the SDEIS.

[Doug Loreen NWTP-04-019
Puget Sound Power and Light Co.]

Response: Factual corrections have been made to Chapter 3 via errata sheets.

The impact characterization terms were developed early in the environmental analysis phase of the project and were used throughout the document to express the judgments of an interdisciplinary team of environmental specialists. These terms should not be used to assess whether the impacts of Puget's 115-kV line are significant and therefore activate the EIS provisions of SEPA. The terms provide a means to compare alternatives to one another.

Whatcom County has not withdrawn from participation in the BPA/Puget Power Northwest Washington Transmission Project EIS. It is thus expected that a joint Federal/State Final EIS will address Puget's line.

Comment: Areas of General Concern. Puget Power is concerned that one or more of the following sections of the SDEIS may affect the interest of Puget Power:

Chapter 4 Section F (Consultation, Review and Permit Requirements);
Chapter 5 (List of Preparers);
Chapter 6 (List of Agencies);
Chapter 7 (References);
Chapter 8 (Glossary);
Chapter 9 (Comments and Responses);

Appendices B and D.

Puget Power does not, at this time, offer any detailed comments on these portions of the SDEIS. The information contained in these sections is, for the most part, of a technical nature and additional time would be required to verify the accuracy thereof and its relevance (if any) to the interests of Puget Power. However, for purposes of reserving its rights with respect to such information, Puget Power urges BPA to confirm the accuracy thereof and objects to any information therein that is inconsistent with or prejudicial to Puget Power's interests.

[Doug Loreen NWTP-04-019
Puget Sound Power and Light Co.]

Response: Comment noted.

Comment: You could improve the proposal by being more clear about your preferences. On first reading, neither I nor my lawyer understood that your proposal is, indeed, a statement of preference for one thing over another.

Response: We regret that you had difficulty reviewing the document. The Supplemental Draft EIS Summary was an attempt to be more concise and help reviewers quickly understand the alternative and environmental issues involved with the project. We work continually to improve our documents, and appreciate your thought and ideas on this subject.

Comment Letters

Bonneville Power Administration
Public Involvement Manager-CKP
PO Box 12999
Portland OR 97208

Dear BPA Representative,

I have several points to make in response to what you describe as your "proposal" (p.6 of your Summary of the Supplemental DEIS).

First, I believe this proposal, as outlined on p.6, is the best solution, and certainly the one that would impact my own land the least. Therefore, am in favor of it.

Second, I am definitely not in favor of what is described on pp.10-12 as the North Shore Alternative. Reasons for my objections are:

a) It would be unecessary, arbitrary, and costly to condemn additional land, log it, build more roads, and impact house and house-sites east of the already existing corridor.

b) Fragile wetlands would be additionally impacted in an adverse manner. Wetlands on my property and neighboring property south of me would be wiped out completely. Olsen Creek itself would probably receive sediments and other erosion from construction. (Incidently, nowhere in your main DEIS, 360 pages long, have I found any reference to Olsen Creek being a protected spawning stream.)

c) EMFs have not, according to studies, resulted in definitive conclusions. EMFs are a main factor cited by FAIR, but in my personal opinion this issue masks what is actually an economic and aesthetic issue: having "the wooden pole line" removed would enhance FAIR's property values.

d) The crossover described on p. 11 of the summary sounds complicated and also risky or possibly undependable. I agree with the point made on p. 105 of your DEIS: namely, that in FAIR's alternative the end result "would be visible for more people....Many would have foreground views of the line, with no screening available. Overall impacts would be high."

e) The North Shore Alternative would place lines so close to my residence near Olsen Creek that I would not be comfortable being there. The mixed forest between my house and the present corridor would have to be removed, eliminating the partial buffer from which the house benefits. This house was built where it now sits in order to minimize visual and auditory impacts from BPA lines. My personal life would be impacted adversely to the extent that I would be forced out. Moreover, I believe it would be impossible, given today's general attitudes toward power lines, to sell the house.

f) The North Shore group purchased their land with a full comprehension that power lines ran near it or across it. To move these lines from their backyards into my own and other's frontyards appears fundamentally unfair in intention.

Even separately, each of the above reasons is reason enough not to move 3.4 miles of BPA corridor to the east, at enormous expense to taxpayers. Taken together, all these reasons make the North Shore Alternative an alternative worth fighting in court, if it ever comes to that.

Sincerely,

David Davis

David Davis

BPA/Puget Power Northwest Washington Transmission Project

You may use this form to comment on the Supplemental Draft EIS or Summary, or you may comment by letter, phone, or in person at one of the open houses. Use the back of this sheet if you need more room. Your comments will be addressed in the Final EIS, scheduled for Summer 1995. Thank you.

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: VWTP-04-C03
RECEIPT DATE: 5/16/95
AREA: DISTRICT
MAY 16 1995

"I'D LIKE TO TELL YOU . . ."

1. What I think about the proposal: ① I approve of B.P.'s proposal as explained on p. 6 of your Summary of the DEIS.
② Please read and file my enclosed letter concerning your proposal and some comments on the North Shore Alternative.
2. You could improve the proposal by: Being more clear about your preferences. On first reading, neither I nor my lawyer understood that your proposal is, indeed, a statement of preference for one thing over another.
3. You could reduce impacts by: Sticking with your proposal and being more sensitive to ecological concerns in general. The fact that Olsen Creek is a protected spawning stream is not noted in your DEIS, unless I've missed something.
4. I think the analysis would be better if you: Reorganized your format so that, for example, the North Shore Alternative was discussed all together, on one or two pages, instead of on several pages all through your 360 page DEIS. (This is only one example.)
5. I didn't understand: That your proposal is actually a strong preference. You could say, "B.P. prefers doing things in this way because it has concluded that the proposal on p. 6 of the Summary is the best way", etc. Excuse me, but the writing lacks clarity because it lacks emphasis. And it jumps around, from one issue to another, so it is hard to read. But, of course, I realize the problem of putting together a large document of a scientific nature. The biggest problem is your audience: We are used to writing that communicates more effectively.
6. I also have these comments:

(My name and address are on the other side of this sheet.)

Comment Letters

BPA/Puget Power Northwest Washington Transmission Project

I spoke with Lou Driessen a couple of days ago. We discussed the issues that I've written about in my enclosed letter (the typed document attached). Therefore, I would appreciate it if Mr. Driessen got a chance to read my letter.

For the next six weeks my phone number will be a California (Forest Service) number:
(209) 795 1381
But my usual number is (206) 733 0900, and my address is always the one below.

Name David H. Davis
Address 2310 King St., Bellingham WA 98225

Please put me on your mailing list (you're on it already if you received this form in the mail).

Use the enclosed postage-paid envelope or send by June 20, 1995 to:

Bonneville Power Administration
Public Involvement Manager - CKP
P.O. Box 12999
Portland OR 97208

If you have any questions, please call toll-free: (800) 622-4519.

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG: NWTP-94-004
RECEIPT DATE: 5/9/95
AREA: DISTRICT

April 30, 1995

Mr. Lou Driessen
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208-3621

Mr. Driessen:

I am writing to you on behalf of the group FAIR. We are people who believe that we will be adversely impacted by BPA's proposed "BPA/Puget Power Northwest Washington Transmission Project" and wish to have input in the decision making process. To this end, we have and will attend public hearings on this matter.

FAIR has also retained legal counsel, David Bricklin, who in turn, has been in contact with BPA's Counsel General, Mr. Ben Underwood. Mr. Bricklin has suggested that we invite you and other appropriate BPA representatives to a private FAIR meeting where we can detail our concerns regarding this project. Our concerns fall into four general categories:

1. Health and Environment.
2. Reduced property values.
3. Project justification.
4. Alternative alignments and configurations

I request that you ensure that staff with the proper expertise is in attendance to fully discuss each of these issues.

We will be holding the FAIR meeting on Thursday, May 25'th, 1995 at 8:30 AM. The meeting will be held at the Cascade Natural Gas office in Bellingham, Washington. Their address is:
1600 Iowa St
Bellingham, WA

Please confirm your attendance, advise who on your staff will be attending, and let us know if you require additional directions. Our mailing address is:
F.A.I.R.
1333 Lincoln St. #246
Bellingham, WA 90226

Martin Eifrig
FAIR representative

cc: Mr. Ben Underwood
Office of General Counsel
Bonneville Power Administration
Mail Stop LN
P.O. Box 3621
Portland, OR 97232

Mr. David Bricklin
1424 Fourth Ave, Suite 1015
Seattle, WA 98101

Comment Letters

Lou Driessen | PAT McRAE
TELL | Co. SH
 | Phone # 5516
3984 | Fax # 3544

INFO ONLY

Info Only: A-2, CKC, E, M, S,
Marg Nelson-SD, Cindy Custer-CK

FAIR
P.O.Box 246, Postal Place
1333 Lincoln Street
Bellingham, Washington 98226
April 9, 1995

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-04-005
RECEIPT DATE: 4/24/95
AREA: DISTRICT

Pete Kremen, State Representative
308 John L. O'Brien Building, Room 308
Olympia, Washington 98504-0684

Dear Pete Kremen:

Thank you for agreeing to write a letter on our behalf in regard to the Bonneville Power Administration/Puget Power Northwest Transmission Project. As you know, our group FAIR (Families Against Increased Risks - approximately 20 families along Lake Whatcom) have adamantly opposed this project for some time. Last fall the environmental process was delayed as BPA was reevaluating the need for the project. To our dismay, we were notified on March 16th of this year that BPA/Puget Power believe the need still exists for their project. BPA has decided to issue a supplemental draft Environmental Impact Statement (EIS) which will give us all another chance to reiterate our objections. According to their March 16th letter, this supplemental EIS would be finished by late April with public meetings in May. Similar to all past public scoping sessions, BPA will, we are sure, continue to have the attitude that they are not at these public meetings to answer our questions but only to take our comments. We the tax paying citizens who will be severely impacted by this project deserve and demand a voice.

The points of concern which our group FAIR believe are valid are as listed:

A. Health Risks
1. Potential cancer risks caused by EMF radiation. Independent studies suggest possible links to: leukemia in children, tumor growths, and physiological changes.
2. Approaching and sometimes over state limits for noise pollution (60 decibels).
3. Transfer of electrical charge to ground objects, for example, vehicles and fence lines (see enclosed article on Christmas Tree Farm).

and local governments have responsibilities to their citizens to protect their health, psychological well being and personal property. Would you please contact Nate Brown of the Whatcom County Planning Department about our concerns. It obviously would be prudent to send a copy of your letter to BPA. Possibly, for the first time in three years, our legitimate concerns would be addressed.

Sincerely,

Craig Langager

Martin Ehrig
FAIR REPRESENTATIVES

cc: Nate Brown
Division of Buildings and Codes
5280 Northwest Drive
Bellingham, Washington 98226

Randy Hardy
Bonneville Power Administration
905 NE 11th Avenue
Portland, Oregon 97232

Ward Nelson, Representative
Whatcom County Council Office
Whatcom County Courthouse
Bellingham, Washington 98225

David Bricklin
Bricklin and Gendler
1424 Fourth Avenue, Suite 1015
Seattle, WA 98101

STATE REPRESENTATIVE
42nd DISTRICT
PETE KREMEN

State of Washington
House of Representatives

RULES
AGRICULTURE & ECOLOGY
ENERGY & UTILITIES
LEGISLATIVE TRANSPORTATION COMMITTEE

April 27, 1995

RECEIVED BY PA ... DEVELOPMENT
COMP-04-COC
5/1/95
AREA DISTRICT

Nate Brown
Planning & Development Services
Whatcom County Courthouse
311 Grand Avenue
Bellingham, WA 98225

Dear Mr. Brown:

I am writing in order to voice concerns about BPA's proposed Puget Power Northwest Transmission Project and additionally, to urge a closer working relationship between impacted residents and the Whatcom County Planning Department.

It is only during the past ten years that the negative health effects of power lines have come to the forefront. It is my understanding that several independent studies have shown potential links of EMF radiation to childhood leukemia, physiological changes, and tumor growths. Additionally, per an article in the Bellingham Herald on 11/30/94, a Whatcom County business, Viking Hill Christmas Tree Farm, was forced to close, due to static electricity from two BPA lines. Families who live along Lake Whatcom are also concerned that noise pollution could approach and at times, even exceed state limits.

Serious potential environmental hazards must also be addressed. Property owners near this project have expressed concerns that there will be a lack of respect for easement agreements; regarding fire danger: i.e., cut trees under power lines remaining on the ground. In the summer of 1994, Fire District #4, Agate Bay, was summoned to a fire under power lines which was caused by the arcing of electrical charges. Residents have also indicated a past lack of effort by BPA to monitor water run-off and its effects on down-slope property; another serious problem has been the overall neglect of culvert maintenance and culvert blowouts which caused the closure of North Shore Road.

Health risks, as well as perceived health risks, lower property values significantly, although I understand that the Whatcom County Assessor has not taken this into consideration with Section E. In fact, real estate earnest money agreements now include a declaration section for power lines. A more obvious detraction to homes is decreased aesthetics due to the magnitude and height of the structures and lines.

Nate Brown
April 27, 1995
Page Two

FAIR (Families Against Increased Risks) has voiced concerns to me, regarding a lack of interaction with the Whatcom County Planning Department; consequently, FAIR members feel vulnerable to BPA's proposed project. I am hopeful that your department and these impacted families can develop a meaningful, productive discussion on the concerns raised. I look forward to positive results in the future.

Thank you in advance for your attention to issues raised in this letter.

Sincerely,

Originally Signed By

Pete Kremen
State Representative
42nd District

PK:le

Comment Letters

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NCIP-04-007
RECEIPT DATE: 6/12/95
AREA: DISTRICT

June 5, 1995

Reply to: WD-126

Ken Barnhart
Environmental Coordinator
Office of Engineering
P. O. Box 3621
Portland, Oregon 97208

Re: BPA/Puget Power Northwest Washington Transmission Project

Dear Mr. Barnhart:

In accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the BPA/Puget Power Northwest Washington Transmission Project, Supplemental Draft Environmental Impact Statement (draft supplemental EIS). The draft supplemental EIS evaluates a new alternative called "Option 1" which evaluates additional information that was provided by the public during the comment period on the draft EIS.

Thank you for the opportunity to review this draft EIS. This abbreviated review revealed no new EPA concerns. Please refer to our draft EIS letter dated January 13, 1994 for EPA's comments on this project. Please contact John Bregar at (206) 553-1984 if you have any questions about our conunents.

Sincerely,

Joan Cabreza, Chief
Environmental Review Section

Printed on Re

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

RECEIVED BY EPA
PUBLIC INVOLVEMENT
LOG #: NCIP-04-008
RECEIPT DATE: 6/12/95
AREA:

Reply to: WD-126

John Taves
Environmental Coordinator
Office of Engineering
P. O. Box 3621
Portland, Oregon 97208

Re: BPA/Puget Power Northwest Washington Transmission Project

Dear Mr. Taves:

In accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the BPA/Puget Power Northwest Washington Transmission Project, Draft Environmental Impact Statement (draft EIS). The draft EIS analyzes the No Action alternative and the Construction Action Alternative options, and their effects on the environment in Whatcom and Skagit counties.

The draft EIS is an informative, well prepared and comprehensive document. It addresses the pertinent issues and potential environmental impacts of project activities very well. Although the information in the draft EIS is generally excellent, we have provided comments on some issues of concern.

Based on our review, we have rated the draft EIS EC-2 (Environmental Concerns -- Insufficient Information). Our concerns are based on the project's impact on water quality. The draft EIS was very thorough in the presentation of site-specific wetland and water quality impacts. This level of detail is very helpful and is an important component of a complete impact analysis. However, it lacks a reference to a monitoring program that will help to ensure compliance with state Water Quality Standards.

This rating and a summary of our comments will be published in the *Federal Register*. A copy of our rating system is enclosed.

Water Quality Monitoring

The EPA would like to see the EIS focus more attention on base-line monitoring measurements of water resources. These would provide a detailed description of the existing physical, chemical, and biological characteristics of streams, lakes, and other water bodies in

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chemical parameters, such as temperature, turbidity, and sediment accumulation, will be kept at levels that will protect and fully support designated uses and meet Water Quality Standards under each of the action alternatives. The state's identification of water bodies with impaired uses (found in the state 303(d) report), as well as the magnitude and sources of such impairment, should also be included.

In addition, the EIS should reveal the locations of spawning habitat with respect to stream crossings in the project area. If project activities are occurring coincident with spawning of anadromous fish, extra mitigation measures should be put in place so that the fish habitat is not disturbed.

The EIS should include a discussion of monitoring for each resource category determined to be significant through the scoping process, including fisheries and water quality. A properly designed monitoring plan will demonstrate how well the preferred alternative resolves the identified issues and concerns by measuring the effectiveness of the mitigation measures in controlling or minimizing adverse effects.

The monitoring plan should include types of surveys, location and frequency of sampling, parameters to be monitored, indicator species, budget, procedures for using data or results in project implementation, and availability of results to interested and affected groups.

The EIS should describe the feedback mechanism which can compare baseline data with monitoring results to adjust standard operating procedures, monitoring intensity, and protocol at first detection of adverse effects. Provision of such an adjustment process ensures that mitigation strategies will improve in the future and that unforeseen adverse effects are identified and minimized.

Thank you for the opportunity to review this draft EIS. Please contact John Bregar at (206) 553-1984 if you have any questions about our comments.

Sincerely,

/s/

Kathy Veit, Chief
Program Coordination Branch

Enclosure

MAY 30 1995

2331 B Hoehn Road
Sedro Woolley, WA 98284
May 22, 1995

BY BPA
...VEMENT
NWF-04-010
5/30/95
AREA DISTRICT

Bonneville Power Administration
Public Involvement Manager - CKP
P.O. Box 12999
Portland, OR 97208

RE: Summary of the Supplemental Draft Environmental Impact Statement
BPA/Puget Power Northwest Washington Transmission Project

Dear Sirs:

We are writing in response to the above-referenced document. The following are some of our thoughts and opinions:

1 - We are strongly opposed to any project that increases the EMF's to our property. Although we understand health related consequences haven't yet been determined from exposure to EMF's, we are not prepared to risk our health nor our child's health.

2 - We strongly oppose any project that raises the existing power lines higher than they currently are. For years we have grown grass hay in a field that your lines cross. The grass hay planted under the existing lines that cross our property does not grow at the same rate as that planted on the rest of the field.

3 - We strongly oppose any project that feeds a higher voltage of power through lines crossing our property.

4 - We question the right of power companies to do construction near existing eagle nests when the average person would not be allowed to do so.

Sincerely,

Jon Fleurichamp

Jon Fleurichamp

Dena Fleurichamp

Dena Fleurichamp

Comment Letters

June 15, 1995

JUN 1 9 1995

Bonneville Power Administration
Public Involvement Manager - CKP
P.O. Box 12999
Portland, OR 97208

Dear Sirs:

The following four pages contain comments are on behalf of F.A.I.R., Families Against Increased Risk, and are in response to your supplemental draft environmental impact statement for the BPA/Puget Power Northwest Washington Transmission Project. We respectfully request that each of these concerns be fully addressed in both your project evaluation as well as any subsequent environmental impact statements.

Respectfully,

Martin Eifrig

Martin Eifrig
F.A.I.R. representative

attachments
cc: David Bricklin
Bricklin & Gendler
Suite 1015
Fourth and Pike Building
1424 Fourth Avenue
Seattle, WA 98101

The following comments are on behalf of F.A.I.R., Families Against Increased Risk, and are in response to your supplemental draft environmental impact statement for the BPA/Puget Power Northwest Washington Transmission Project. We respectfully request that each of these concerns be fully addressed in both your project evaluation as well as any subsequent environmental impact statements.

1. You have admitted to the fact that you do not have a contract with Canada for the power for this project. How can you justify spending the millions of dollars this project will cost taxpayers with no binding contract?

2. In addition to the fact that no power contract with Canada exists(as noted in item #1), the regional need for access to additional power seems unfounded given that the region has excess power. BPA is having a difficult time competing with private power generation and has lost significant customers recently. This trend must be fully documented, analyzed, and addressed before this project can be seriously considered.

3. Given this intense competition with private power generation(as noted in item #2), why is BPA competing with private industry, with taxpayers' dollars, in the generation of electricity when private industry is offering competitive alternatives and employing American workers?

4. BPA is attempting to cancel a contract with a private power producer, Tenaska, yet still wishes to pursue this project. Tenaska, in turn, has filed a claim against BPA for over 1 billion dollars which is further cause for alarm of BPA's judgement. Even the Northwest Power Planning Council which sets policy for BPA has warned that BPA may not be competitive. These power plants employ american workers and can be placed adjacent to high use areas which reduces health issues, property devaluation and need for massive transmission lines in a densely populated region. BPA must re-evaluate their policy and gain public acceptance before embarking on this transmission line project.

5. Project financing. As taxpayers, we find it ludicrous that we are being asked to fund another project that allows BPA to compete with the private sector power generation when BPA has yet to repay its loans from the Federal Treasury. The project's financing and BPA current indebtedness to the Federal Treasury should be explicitly stated in both the EIS and project justification documents.

6. The EIS does not address the future problems in Canada concerning Canada's own fish enhancement problems and the concerns of Canada's First Nations Peoples about the implications of this project.

7. If this project were to be implemented, the EIS does not state what the maximum potential EMF radiation could be at the easement boundary. All EIS statements refer to some presumed load and never address the maximum load potential. The EIS must include these details.

8. Puget Power, as a joint project participant, must also state why they opposed any language concerning EMF radiation or discussion of EMF reduction in the EIS. We, as residents in the proximity of the transmission lines, view them both as a health and property value threat which is a "taking" that Initiative 164 addresses. Puget Power's position/policy on EMF radiation must be a part of the public record on this project.

9. Despite increasing the current carrying capacity of the proposed line(as noted in item #7), BPA has refused to set specific binding limits on EMF radiation at or below current levels. The EIS must note that "prudent avoidance" is recommended for EMF exposure by the Washington State Department of Health. The EIS must address why residents near the transmission lines can't be given this binding guarantee that their health will not be further jeopardized and that their property values will not be adversely impacted. The EIS must also note that standard real estate contracts now require that the presence of high voltage power lines near your property be explicitly stated.

Comment Letters

10. In light of the above concerns, it is reckless and abusive for BPA and Puget Power to proceed with this project. F.A.I.R. believes that this project should be abandoned. If BPA can properly justify the region's needs in the future, the transmission lines should go in the less populous Eastern Washington Corridor.

Respectfully,

Martin Eifrig
F.A.I.R. Representative

Craig Langager
F.A.I.R. Representative

Sharon Hoofnagle, D.V.M.
(practice limited to horses)
3024 Lake Shore Rd.
Bellingham, Wa. 98226
360 671 2100

June 14, 1995

Concerning Bonneville Power Administrations Northwest Washington Transmission Project

BPA:

I would like to comment on the draft EIS. I am adamantly opposed to this project for the following reasons:

I object to any increase in the electromagnetic field (EMF) and believe that the current EMF outside and under the power lines is too high.

Evidence is steadily mounting that the EMF has serious effects on the body including adult, and more importantly, childhood cancers. At the edge of the right-of-way the EMF readings far exceed the level that any of the studies on health risks indicate are safe.

BPA is telling us that the studies are not conclusive. That statement is not correct. Several of the studies are conclusive, some studies are not. We could argue this indefinitely, just as the tobacco industry argued indefinitely that cigarette smoking was not harmful. Since not everyone who smokes gets lung cancer it could still be argued that studies on smoking are inconclusive. That would be a ludicrous arguement today.

All industries and individuals associated with EMF's, including BPA, are recommending avoidance of the fields yet BPA is proposing this project that would increase the EMF's over family homes.

It may be argued that we knew the lines were here when we purchased our properties. That is true, but we were told by BPA that the only danger from the lines was from electrocution. We were instructed not to elevate metal poles or build brush fires under the lines. BPA gave us booklets on how to work safely under the lines. They showed picture of people driving tractors under the lines, in the same EMF's that they are now saying to avoid. This project will increase the EMF under the lines but BPA is still telling landowners that they can work their land under the lines, while at the same time recommending avoiding the EMF. It just doesn't make sense!

BPA's own book, Electrical and Biological Effects of Transmission lines, U.S. Dept of Energy 1989. documents the dangers of EMF's.

Pg 52: Three of five studies done to investigate a possible association between childhood cancer and powerline magnetic fields reported some positive results. (Showed association). About 50% of 30 reports on "electrical occupations" and cancer report significantly elevated risks.

Pg. 53: Overall, research with humans supplemented by lab animal research, suggests the possibility for adverse effects from human exposure to electric and/or magnetic fields.

Pg. 55: Table 8 lists the relative risk of childhood cancer from powerlines at 1.5-3; it lists the relative risk from environmental tobacco smoke (lung cancer) as 2-3, almost identical.(The danger to children from second-hand tobacco is high enough that parents who smoke heavily have been denied cutody of their children).

Pg.56: Powerline cancer risk is higher than the risk from home asbestos-lung cancer. (Millions of dollars are being spent to remove asbestos from schools and other public places).

All of the above, plus additional facts supporting the dangers from powerlines are in BPA's own book. Other unbiased studies are even more emphatic that the lines are dangerous.

Property values have decreased with the increased public awareness of the problems associated with powerlines. Puget Sound multiple listings real estate sales agreement contains a section on hazards such as landfills. One question in this section asks if the listed property is close to power lines.

This project will not benefit Whatcom County. These lines are not for local use. This increase is to enable BPA to shuffle power to California and other distant areas. New power sources are being developed in our county in the form of co-generation plants.

Comment Letters

The general public is aware that the future course of BPA is uncertain. Major issues are unresolved. The salmon fisherics issue, sedimentation in the slack-water versus the fast-flowing river problems, irrigation problems, none of these issues are even close to being resolved. Other forms of energy production are being developed. BPA should not be considering a project of this size at this time.

The "Fair" Group along Lake Whatcom has requested that the danger line (the line closest to our homes) be moved to the far side of the right-of-way where there are no homes. BPA has responded by stating that it would be too expensive. However there are numerous examples where the government and private businesses have spent large sums of money to protect a few homes. For example many flood control projects cost millions but only protect a few homes.

In summary, when we purchased our properties we were assured that the power lines were not a health hazard. BPA at that time was aware of the possible hazards but did not tell us. BPA now wants to increase the hazards further. BPA has no right to expose anyone, but especially children , to the possiblity of cancer or any other health hazards.

sincerely,

Sharon Hoofnagle, D.V.M.

PUGET POWER

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June 19, 1995

NWTP-04-019

Bonneville Power Administration
Public Involvement Manager-CKP
P.O. Box 12999
Portland, OR 97208

Mr. Roland Middleton
Deputy SEPA Official
Whatcom County Planning
and Development Services
5280 Northwest Road
Bellingham, WA 98226

Re: Comments on Supplemental Draft Environmental Impact Statement BPA/Puget Power Northwest Washington Transmission Project

Puget Sound Power & Light Company ("Puget Power") offers the following comments on the Supplemental Draft Environmental Impact Statement for the BPA/Puget Power Northwest Washington Transmission Project (the "SDEIS"). Puget Power's comments are comprised of this letter, attached excerpts from the SDEIS, and the attached letter from William H. Bailey, Ph.D., to Doug Loreen, dated June 12, 1995.

Some of the comments Puget Power provided on the DEIS[1] have been addressed in the SDEIS. However, significant issues addressed in Puget Power's DEIS Cominents remain matters of concern. Rather than restating the DEIS Comments in their entirety, Puget Power incorporates its DEIS Comments herein by this reference and resubmits its DEIS Comments as comments on the SDEIS.

[1]By letter dated January 13, 1994 (with attachments) Puget Power offered comment to BPA and Whatcom County on the Draft Environmental Impact Statement. This letter (with attachments) is hereinafter referred to as the "DEIS Comments."

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In addition, please note the following:

1. Project Need. The SDEIS's discussion of the need for this project may be supplemented with the following information:

A. Access to Canadian Energy Resources. The project will provide Puget Power greater flexibility to respond to a variety of needs in competitive markets. The opening of a wholesale generation market has led to increased price competition. The project will provide Puget Power with direct access to Canadian energy resources. Direct access to these resources will provide Puget Power with greater flexibility to realize competitive opportunities for the benefit of its customers. Some of these competitive opportunities are anticipated in the short term (i.e., energy acquisitions on the spot market that displace more expensive resources) while other opportunities are anticipated for long-term resource needs (i.e., firm acquisitions).

B. Local Reliability. The SDEIS states that the project will increase the capability of the local transmission system to move power through and out of the local area, and Puget Power's 115 kV system will be better protected against thermal overloads. Puget Power has, over the last few years, made improvements to the local transmission system, and during this time approximately 655 MW of new generation (cogeneration facilities) have come on line. These changes have altered the local transmission system and have, as the SDEIS notes, to some extent "diminished" the degree to which this project is needed to address local transmission deficiencies. However, the local reliability benefits afforded by the project are still important and needed.

The project will add a second 230 kV transmission line from the BPA Bellingham Substation to the Puget Power Sedro Woolley Substation. This will prevent, under certain conditions, overloading of Puget Power's 115 kV lines. Puget Power's Sedro Woolley-to-Bellingham #3 and #4 115 kV transmission lines are electrically parallel to BPA's existing Bellingham-to-Sedro Woolley 230 kV line. Loss of the existing BPA 230 kV line causes more power to flow on the Puget Power 115 kV lines, resulting in overloads and outages. A recent outage underscores that when this occurs, potentially dangerous overloads result and many Puget Power customers can be affected.

2. Withdraw Determination of Significance. The SDEIS describes how this project has changed from its inception. The environmental record runs from

'uget Power's original proposal (see "230-kV intertie with B.C. Hydro" discussed in he SDEIS at page 2/39), to the first joint BPA/Puget Power project (see "E4A Plan" liscussed in SDEIS at page 2/40), to the "Puget Power Part of the Project" described n the DEIS, to the current "Puget Power Part of the Project" described in the SDEIS it page 2/31. As the project has changed, the activities to be directly undertaken by Puget Power have diminished. Puget Power's portion of the project now involves the rebuild of an existing 115 kV line and associated work inside of substation fences.

The need to undertake detailed environmental review for purposes of both NEPA and SEPA was initially driven by the fact that both BPA and Puget Power were proposing new construction. Were Puget Power to propose its current portion of the project (without the pipeline alternative) as a project independent of BPA's system improvements, the proposal would be categorically exempt under SEPA. See WAC 197-11-800(3) (as to repair and maintenance of the existing line) and WAC 197-11-800(24) (as to work inside the substation fence).

Puget Power does not, however, intend to assert categorical exemptions at this juncture of the proceeding. However, Puget Power *does not* believe that the project--as currently proposed--requires completion of an environmental impact statement for purposes of SEPA. Rather, the rules which ought to guide Whatcom County's further involvement in environmental review are WAC 197-11-610 (use of NEPA documents) and WAC 197-11-360(4) (withdrawal of a DS). Whatcom County should adopt the SDEIS to the extent necessary to address its consideration of related BPA actions associated with decisions it may make with respect to Puget Power's portion of the project. As to Puget Power's portion of the project, Puget Power submits that for purposes of WAC 197-11 360(4), "the proposal has changed" such that there are no longer any "probable significant adverse environmental impacts." To this end, the DS should be withdrawn and an MDNS issued in its place.[2]

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[2]This project (and particularly Puget Power's portion thereof) has also received extensive analysis in the GMA process undertaken by Whatcom County and the City of Bellingham. The GMA process includes, of course, compliance with SEPA. Although Puget Power has not carefully considered the scope and extent to which the GMA process satisfies the requisites of SEPA for this project, we encourage Whatcom County to consider its GMA process as a further basis to avoid any further duplicative environmental review and issue a DNS or MDNS for this project.

3. Existing Conditions, GMA and Quantification of Impacts. Assuming the SDEIS is finalized for purposes of NEPA and SEPA, the SDEIS's discussion of Puget Power's portion of the project is lacking. Specifically:

- Puget Power's portion of the project utilizes existing utility facilities and corridors. These existing conditions (i.e., utility facilities and corridors) are not sufficiently recognized in Chapter 3 of the SDEIS, pages 3/55 through 3/60. Leaving this information out of the "baseline" will result in overstatement of project impacts. The concern is addressed further in Puget Power's attached mark-up of select portions of the SDEIS.

- The Growth Management Act and implementing efforts underway in Whatcom County and City of Bellingham give clear preference to further development of existing utility facilities and corridors. These preferences do not appear to be reflected in the SDEIS. Puget Power has made no small effort to alter its facility plans to fit local land use plans. Puget Power would certainly hope that Whatcom County, as lead agency for purposes of SEPA, and in consultation with the City of Bellingham, will acknowledge in the FEIS that this project is the result of coordinated planning.

- The SDEIS quantifies impacts of the Puget Power portion of the project in a way that is confusing for purposes of SEPA. The terms "considerable," "moderate" and "slight" are not terms used to quanitify impacts for purposes of SEPA.. Impacts for purposes of SEPA should be discussed in the context of their significance (or lack thereof). This concern is addressed further in Puget Power's attached mark-up of select portions of the SDEIS.

4. Property Value Impacts. Puget Power has previously expressed its concern as to the treatment of this issue. We again emphasize the need to:

- avoid speculative observations based on perception rather than empirical analysis;

- account for the fact that the vast majority of the project (and all of Puget Power's portion of the project) involves utilization of existing utility corridors and substation sites, such that the presence of utility facilities as a factor influencing property values (if at all) is an existing condition and not a project impact;

- acknowledge that many factors influence property values, and accepted methods for assessing property values do not support using a single factor (e.g., proximity to utility facilities) as a basis for meaningful analysis; and

- acknowledge that an assessment of property value impacts is beyond the scope of SEPA, per the SEPA Rules and judicial interpretation.

Puget Power again takes issue with the purported "methodology" to quantify these impacts found at page 4/119 of the SDEIS. The factors BPA chooses to rely upon are arbitrary and unlikely to serve as reliable predictors of increases or decreases in property values. If property values are to be addressed at all, the assessment should be based upon data gathered from the market place, and impacts (if any) should be expressed and quantified in terms of a percentage impact of existing value.

5. Extremely Low-Frequency Electric and Magnetic Fields. The SDEIS carries forward an "exposure assessment" from the DEIS, yet concedes that there is no scientific basis to draw any conclusions as to risks to public health from such assessment. This is because the consensus of the scientific community, as understood by Puget Power, is that there is no established cause-and-effect relationship between ELF/EMF exposure and cancer or other disease.

If the "exposure assessment" is not an assessment of health risks, why is it found under the heading of "Health and Safety" in the SDEIS? In the context within which it appears, the "exposure assessment" is likely to mislead the public by engendering a false sense of concern (or comfort) without a scientific basis to draw any conclusions as to risk (or lack thereof). BPA is not a health agency and should not substitute its judgment for the judgment of qualified public health agencies and professionals that are disinclined to associate ELF/EMF "exposure assessments" of this type with assessments of public health and safety. Further comments prepared by William H. Bailey, Ph.D., are attached.

6. Areas of General Concern. Puget Power is concerned that one or more of the following sections of the SDEIS may affect the interests of Puget Power:

- Chapter 4, Section F (Consultation, Review and Permit Requirements);

- Chapter 5 (List of Preparers);

Comment Letters

- Chapter 6 (List of Agencies);
- Chapter 7 (References);
- Chapter 8 (Glossary);
- Chapter 9 (Comments and Responses);
- Appendices B and D.

Puget Power does not, at this time, offer any detailed comments on these portions of the SDEIS. The information contained in these sections is, for the most part, of a technical nature and additional time would be required to verify the accuracy thereof and its relevance (if any) to the interests of Puget Power. However, for purposes of reserving its rights with respect to such information, Puget Power urges BPA to confirm the accuracy thereof and objects to any information therein that is inconsistent with or prejudicial to Puget Power's interests.

Thank you for the opportunity to offer these comments. If you have any questions concerning these comments, please contact Mr. Doug Loreen at (206) 462-3589.

Very truly yours,

Puget Sound Power & Light Company

By Doug Loreen
Doug Loreen
Project Manager

Attachments

BAILEY RESEARCH ASSOCIATES, INC.

LINDA S. ERDREICH, PH.D
DEBORAH E. WEIL, PH.D

202 MADISON AVENUE
NEW YORK, NY 10017
TELEPHONE (212) 689-1784
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June 12, 1994

Mr. Doug Loreen
Puget Sound Power & Light Co.
P.O. Box 97034
OBC-115
Bellevue, WA 98009-9734

Re: Supplemental Draft Environmental Impact Statement (SDEIS)
BPA/Puget Power Northwest Washington Transmission Project

Dear Mr. Loreen:

I have reviewed the SDEIS and the Responses to Comments on the DEIS on topics relating to EMF. My comments on the DEIS focused largely on criteria for EMF impact assessment, and comparisons of alternatives based upon EMF exposure assessment.

Criteria for Impact Assessment

One of my major criticisms of the DEIS was that it did not derive criteria for impact assessment based upon "the findings of comprehensive scientific reviews performed by multidisciplinary panels of scientists." Several additional reviews are cited in the SDEIS, e.g., SAB, 1991 and "[a] Danish blue-ribbon panel," but no more recent reviews are cited. Although the SDEIS concludes that reviews of the EMF-cancer literature cited "generally reach a similar conclusion, i.e., existing evidence does not show that EMF cause or promote cancer"[C/4], the SDEIS as did the DEIS before, disregards this guidance. Instead, the SDEIS promotes a detailed quantitative exposure assessment to compare alternatives despite the acknowledgement that "it is not possible to identify 'unsafe' field levels"[C/5]. As I pointed out in my review of the DEIS, this kind of exposure assessment is inappropriate given the level of scientific knowledge and assessments expressed in comprehensive scientific reviews.

Comparisons of Alternatives Based on EMF

While the exposure assessment in the SDEIS does describe "the magnetic field environment and allow[s] a general comparison of project alternatives[4/130]," this could have been done without creating the impression that changes in calculated exposure of at least one or several milligauss were of known significance. For example, someone who reviews the comparisons found in Tables 13-15d and C1-C8 might want to know whether a reduction in calculated magnetic field level at three homes and commercial buildings by more than 10 mG for Option 1 (Table C-2) is

preferable to increases of between 1 - 5 mG at 40 similar locations for this same option (Table C-1). Or, they might want to know what is the real difference between exposures to magnetic fields at levels of 1-5 mG and 5-10 mG. Such questions about impugned impact cannot be answered from the information available either in the SDEIS or anywhere in the scientific literature.

Also, one would want to know more clearly how these calculated magnetic field levels relate to ambient background magnetic field levels. In Section 4.D.14, the SDEIS comments on sources of magnetic fields in homes other than transmission lines, e.g., appliances, and on a nation-wide survey of magnetic fields in residences (Zaffanella, 1993). However, this information should have been, but was not, integrated into the discussion of site specific comparisons. One's perspective on the calculated increases and decreases in exposures for specific corridor segments (that overwhelmingly fall into the category of > 1 to 5 mG) changes when one learns that the background level of magnetic field in a home (away from any appliances) ranges from 0.5 mG to 4 mG[1]

As I pointed out in my review of the DEIS, contributions to exposures from sources other than transmission lines cannot be ignored. The proper interpretation of the incremental exposures calculated in the SDEIS can only be made in the context of ambient exposures from all sources. For example, by focusing just on incremental magnetic field exposure from transmission lines, the SDEIS fails to take into account other important sources. For example, one of the most striking findings of the nation-wide survey of residences just mentioned (Zaffanella, 1993)[2] is that peak magnetic field exposures in residences are more likely to be caused by currents flowing on grounding systems than from outside power lines. These data are summarized in Table 1 attached to this letter. The calculations presented in the SDEIS take no account of magnetic fields from this or other indoor sources. Such findings clearly illustrate why the approach taken by the SDEIS is incomplete.

Interpretation of Individual Scientific Studies

I had made the point in my review of the DEIS that in "characterizing the state of scientific knowledge, it is important that the whole body of relevant data be addressed, not just a few selected studies." Yet despite this caveat, the SDEIS attempts to substitute its own evaluation and characterization of individual studies for overall assessments by multidisciplinary panels of scientists convened by scientific and regulatory organizations. Moreover, the literature discussed is selective and not up-to-date. For this reason and because of the failure to incorporate all relevant and up-to-date studies, the Summary of Biological and Epidemiological Studies Relating to EMF contained in Appendix C is wanting.

[1]National Institute of Environmental Health Sciences/U.S. Department of Energy. Questions and Answers About EMF: Electric and Magnetic Fields Associated with the Use of Electric Power. January, 1995.

[2]Zaffanella, LE. Survey of Residential Magnetic Field Sources. Vols. 1 & 2. Palo Alto: Electric Power Research Institute, 1993.

For example, the meta-analysis published by Washburn et al (1994) is described, but the strengths and weaknesses of this approach are not also considered. Recently, Feychting and Ahlbom (1995)[3], the authors of the so called 'Swedish study' summarized telling criticisms of the Washburn et al. approach and concluded that:

> ". . . not even a state of the art meta-analysis appears to provide further insights for the interpretation of the epidemiologic literature on magnetic fields and childhood cancer. Indeed, the paper. . . provides a clear example of the limitations of meta-analysis in observational epidemiology. . ."

In a response to a comment about the lack of discussion or qualification given to odds ratios in the London et al (1991) study in the DEIS, the SDEIS replies that "Although the odds ratio was not statistically significant after adjustment, the *trend* for increasing leukemia risk with increasing current capacity [o]f the power lines remained statistically significant after adjustment [for other potentially confounding exposures]" (9/242). While this statement describes a finding from the report, it hardly serves as a critical assessment of the study's findings. As pointed out by Bracken et al (1992), such an interpretation of this trend is misleading and incorrect. What the trend analysis shows is that the lowest level of exposure is associated with a statistically significant reduction in estimated risk. Contrary to the interpretation suggested in the SDEIS, no statistically increased risk is suggested at any exposure level when adjustment is made for confounding factors.

The findings of other important studies are neglected outright, such as the absence of any strong or consistent associations with brain cancer in Theriault et al (1994), and the overall lower mortality risk from cancer and other diseases among utility workers as compared to other men in the U.S. population reported by Savitz and Loomis (1995).

Still other studies that shed light upon topics addressed in Appendix C also are not addressed, e.g. the failure to find associations between estimated magnetic field exposure and adverse reproductive outcome in Savitz's retrospective study (Savitz and Ananth, 1994)[4] or in the *prospective* study published by Bracken et al (1995)[5] that included magnetic field monitoring of individual pregnant women prior to delivery. Both studies could have been discussed on pp. 9/243 and C/4.

[3]Feychting, M; Ahlbom, A. Electromagnetic fields and childhood cancer: meta-analysis. Cancer Causes and Control. 6:275-279, 1995.

[4]Savitz, DA; Ananth, CV. Residential magnetic fields, wire codes, and pregnancy outcome. Bioelectromagnetics. 15:271-273, 1994.

[5]Bracken, MB; Belanger, K; Hellenbrand, K; Dlugosz, L; Holford, TR; McSharry, J-E; Addesso, K; Leaderer, B. Exposure to electromagnetic fields during pregnancy with emphasis on electrically heated beds: association with birthweight and intrauterine growth retardation. Epidemiology. 6:263-270, 1995.

Comment Letters

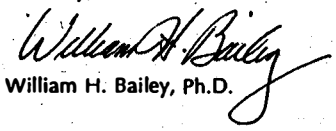
Nor does the SDEIS provide an up-to-date characterization of the position of Swedish health and regulatory agencies. Attention is given to assessments from 1993 in the SDEIS but when updated in 1994, all that is provided is a paraphrase from a newsletter. The latest assessment, prepared by a panel of 15 experts and reviewed by 31 other scientists, that was published by the Swedish National Board of Health and Welfare and became widely available in January, 1995 is not reported in the SDEIS. It was the conclusion of the panel that:

> "The existing epidemiological data can not be used to support any definite conclusions as to whether exposure to electromagnetic fields increases the cancer-risk in any organ system. Subsequent experimental studies carried out on animals and in vitro have not lent support to the suspicion of a carcinogenic effect. However, the possibility of their being a link between exposure and risk cannot be ruled out; especially with regard to child leukemia. [p.203][6].

For the reasons summarized above, the SDEIS and Responses to Comments have not responded to most prior criticism of the DEIS. However, I hope that these comments will be helpful in providing a scientific perspective on the issues addressed by the SDEIS.

Please let me know if I can be of further assistance.

Sincerely,



William H. Bailey, Ph.D.

[6] Evaluation of the Effects on Health of Electrical and Magnetic Fields: Report from the Board's Expert Group [Elektriska och magnetiska fält och hälsoeffekter]: Rapport från Socialstyrelsens expertgrupp. Stockholm: National Board of Health and Welfare, January, 1995.

Table 1

Percent of Residences Where Peak* Magnetic Field Exceeds Reference Value from Power Line or Grounding System Sources

(Zaffanella, 1993)

Reference Value	Power Lines	Grounding System
> 1 mG	34	36
> 2.5 mG	10	18
> 5 mG	2.9	6.8

* Highest 5 % of measured values

Comment Letters

Bonneville Power Administration
Public Involvement Office - ALP
P. O. Box 12999
Portland, OR 97208

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Lou Driessen	From Megan Morehouse
Co. BPA	Co.
Dept. Building 905 3rd flr	Phone # (360) 739-1519
Fax # (503) 230-3984	Fax # Please confirm

To Whom it may concern:

I am writing to you in response to the North Shore alternate proposal. I understand that this proposal was brought to you by a group called "FAIR". It seems that the term "FAIR" should be just that, FAIR, but in this case it reflects the opposite. Nobody wants powerlines in their backyard. I would make the powerlines disappear if I could, but I would certainly, by no means move them into my neighbor's backyard.

I am asking you to *refuse* this proposal. If you move the corridor east, my home will be affected. I see deer, rabbits, and grouse on our property on a daily basis. If you move the corridor, hundreds of acres of trees will be cut down and you will be taking the homes of these animals. I do not want to see these animals, or any other animals die due to needless acts.

I represent the future of America and I'm amazed at the lesson I am learning from this project. It seems unjust to take from your neighbor to better yourself. I've been brought up to "love thy neighbor".

I know we use more power everyday so it's only a matter of time before the power lines need to be upgraded, but I ask you to please use the corridor you already have.

Destroying this vital land and causing eminent death to thousands of animals is too high a price to pay for such a senseless act. There are less harmful alternatives.

Thank you for your time.

Sincerely,

Megan Morehouse

Megan Morehouse
3210 "Y" Road
Bellingham, WA 98226
1997 Graduate

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: LOWTP-04-020
RECEIPT DATE: 6/20/95
AREA: DISTR

JUN 2 1 1995

June 18, 1995

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: LOWTP-04
RECEIPT DATE: 6/20/95
AREA: DISTR

Bonneville Power Administration
Public Involvement Office - ALP
P. O. Box 12999
Portland, OR 97208

RE: BPA/Puget Power NW Washington Transmission Project

To Whom it may Concern:

We are writing in regards to the North Shore alternate proposal offered by "FAIR" which would move the power lines to the east. In moving these lines we would feel a tremendous impact to our woodlands, streams, animals and neighborhood as well as the additional cost of $2,000,000.00 in public funds.

In order to move the power lines to the east there are many aspects that need to be realized:

1. The new roads that would be built will increase sediment and silting, which can reduce light penetration of the stream and reduce plant growth. It can also damage fish gills, suffocate fish eggs and larvae of other species, and effect plant densities.

2. There will be additional erosion and runoff of silt and increased sediments, caused by clearing of vegetation from the area of the affected streams. Trout have historic habitat in the affected streams and are especially vulnerable to increased sediments.

3. The counties which border the Puget Sound Basin, and land clearing developments within their boundaries, must comply with the management practices as outlined in the Puget Sound Stormwater Control Manual.

4. This project may be built close to possible unstable soils which are in slumps and flow slides.

5. Clearing a new corridor, which falls in the Lake Whatcom Watershed ,will cause the loss of our forest, leaving the possibility of extreme windfall.

6. Lost forest habitat may affect many species in and near the project area, including the black tail deer, an economically important big game animal in this region. These deer

Comment Letters

frequent the area near the project as part of their winter range and may be adversely affected by depletion of forests in the corridors which will reduce their range.

7. With the alternate proposal families and homes will be displaced.

The power lines were in existence when the current homeowners purchased their property and homes. It seams selfish to move the lines for financial gain at someone else's expense.

We do not have a position on whether the power lines need to be up graded, but if they are upgraded we believe they should be held within the existing corridor. The right thing to do is leave the lines where they are currently. It is environmentally right, financially right and morally right.

Sincerely,

Concerned Citizens in and around the Lake Whatcom Watershed.

Name	Address	Phone
Paul M Graf	3355 "Y" Rd Bellingham	734-9615
Margo Graf	3355 Y Rd. Bellingham	734-9615
Bonnie J Montrose	3210 "Y" Rd Bellingham	733-3572
Ken Montrose	3210 Y Rd B'ham	"
Tracey Westberry	3635 Y Rd B'ham	738-7159
Karen Kramer	3611 Y Rd B'ham	734-0528
Virgil Kramer	" " "	"
David Fitzgerald	3266 Y Rd B'ham	733-8139
Donnie M. Fitzgerald	3266 Y Rd. B'ham	733-8134
Deborah C. Wilson	3710 "Y" Rd. B'ham	676-5028
Suzanne Swan	3570 Agate Bay Dr. Bell. Wa	734-5827
Jerry Lee	" " "	"

Insert 20 - Chapter 10/17

Patty Nelson
Clarence H Lee 3685 Y Rd Bellingham WA 98226
Kathy Sorrell

Name	Address	Phone
Michael Westberry	3635 Yrd	738-7159
Jan Lee	3685 Y Rd	676-4616

Comment Letters

June 18, 1995

JUN 2 3 1995

BPA Public Involvement Mgr.
C.K.P. P.O. Box 12999
Portland, OR 97208

RE: Comments on Supplemental Draft EIS for BPA proposed Northwest Washington Transmission Project.

Dear Manager,

I have reviewed the above mentioned document and it has also been reviewed by several consultants for me. With regard to wildlife and particularly to federally protected species the document is flawed and does not adequately address the impacts to these species. My specific comments follow.

1. There is no verification given that the conclusions presented in this document have been reviewed by the US Fish & Wildlife Service (FWS) and if that agency concurs with the analysis.

2. The Spotted Owl is a federally listed species that has not been addressed in the document. There have been several reports of Spotted Owls on the north side of Lake Whatcom.

3. The data and correspondence used in this document appears to be from 1992 and has not been updated to reflect the current situation in 1995. An example of this is statements that the closest Marbled Murrelet nesting area is Verlot when in fact murrelets have been encountered in tributaries to the Middle & South Forks of the Nooksack River. There is suitable habitat for murrelet nesting in the Lake Whatcom watershed that has not been addressed in this document.

4. Other federal, State and private projects with much less potential impacts have conducted thorough field surveys that have verified the presence of protected species. This project has done no field surveys to document the presence or use of the project vicinity by federally protected species.

The minimum requirement to address this issue adequately is to conduct two seasons of field surveys to determine the presence of these species. The next step is to clearly determine the potential impacts on these species including use of helicopters in the area, heavy machinery, etc. and how to avoid impacts to the target species. Any less effort than stated here would be a violation of the Endangered Species Act and intentional disregard of the protocol for a project of this magnitude. Please inform me directly of any response you have to these questions.

Steve Wight
2730 Northshore Rd.
Bellingham WA 98226

Steven J. Wight

cc: USFWS, Olympia
FAIR

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-04-02
RECEIPT DATE: 6/23/95
AREA: DISTRICT

TO: Department of Energy, Bonneville Power Administration
ATTENTION: Lou Driessen
FAX: (503) 230-3984

FROM: Milton & Suzanne Jenkins
FAX: (360) 428-1926

JUN 1 9 1995

After reading the DEIS and doing some research on our own, we feel that the proposed new transmission line should not be built at this time.

With the budget crunch going on and considering the financial instability of the Bonneville Power Administration, it seems to us it would be better to wait, especially when you don't even have a contract with Canada yet to buy the power. We think the present lines are adequate.

We also don't understand why the BPA is doing the leg work for Puget Power. Is Puget Power trying to use BPA's muscle?

Also, the EMF danger hasn't been adequately addressed in your DEIS.

We're in the process of building a new home at 56-B Highway 9, property that will be affected by this project. There isn't any doubt that this new power line will further devalue our property. Are you prepared to compensate accordingly? If for some reason this project must be done, wouldn't it make sense to locate the lines in BPA's Eastern Washington corridor where there is much less population?

In light of these several objections, I repeat...PLEASE DON'T DO IT!

Sincerely,

Milton & Suzanne Jenkins
112 No. 39th Place
Mt. Vernon, WA 98273
(360) 424-0286

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-04-018
AREA: DISTRICT

Insert 20 - Chapter 10/18

Comment Letters

BONNEVILLE POWER ADMINISTRATION
PUBLIC INVOLVEMENT MANAGER - CKP
P.O. BOX 12999
PORTLAND OR. 97208

JUNE 14, 1995

RE: NORTH SHORE ROAD ALTERNATIVE.,

JUN 19 1995

DEAR SIRS,

ATTACHED ARE COPIES OF THE ASSESSORS MAP WHICH SHOWS OUR 20 ACRE PARCEL ALONG WITH OUR PROPOSED SHORT PLAT THAT HAS BEEN SUBMITTED TO THE COUNTY FOR APPROVAL.

UNLESS BPA BUYS LOT 4 OF OUR SHORT PLAT OR PAYS US A VERY SUBSTANTIAL AMOUNT OF MONEY TO ACQUIRE AN ADDITIONAL EASEMENT, WE STRONGLY OBJECT TO THIS PROPOSED ALTERNATIVE.

MOVING OUT OF THE EXISTING POWER CORRIDOR FURTHER ONTO OUR PROPERTY WOULD RESULT IN A HUGE MONETARY LOSS TO US AND MAKE THE SELLING OF LOT 4 EXTREMELY DIFFICULT.

CONCERNED PROPERTY OWNERS,
STEVE AND JUDY POTTER

Stu T. Potter
Judy D. Potter

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-
RECEIPT DATE:
6/14/95
AREA: DISTRICT

3355 "Y" Rd.
Bellingham, WA
June 19, 1995

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-
RECEIPT DATE:
6/28/95
AREA: DI

Bonneville Power Administration
Public Involvement Office
P.O. Box 12999
Portland, OR 97208

RE: BPA/Puget Power NW Washington Transmission Project

Dear Sirs:

An alternative plan to upgrade the BPA power lines has been proposed that would expand the BPA powerline right-of-way 250 ft. to the East. This strikes me as a near ultimate example of the "Not in my back yard" syndrome.

We are talking about the destruction of hundreds of acres of forest. This forest is both a substantial habitat as well as a major element contributing to the water quality of the Lake Whatcom Water Shed. Furthermore these power lines, visible from a large part of the County, are already less than attractive without adding another 250 feet to the scar. There already has been substantial litigation because of instability of slopes caused by logging in the Smith Creek and Olsen Creek drainages. This will cut straight across both of these. How much siltation will be generated by construction through freshly logged mountain terrain.

While compared to the shore of Lake Whatcom, there are relatively few property owners, they exist and unlike their shore-side neighbors they stand loose a lot. These folks have moved here, just as the lake shore owners, because of important lifestyle choices. This option will destroy part or all of the reasons for their choices by making substantial changes to the appearance of their home environment and/or taking property from a number of them.

Is all this damage to be wrought on the citizens of the County just to satisfy an unsubstantiated claim by some that electromagnetic effects from the power lines might cause cancer or some other problems. There is no good scientific evidence that power lines pose a health hazard. Any evidence that exists is circumstantial and vague. This proposal makes no sense at all!

There has been a huge amount of concern and activity regarding environmental health of the Lake Whatcom Water Shed and water supply. There have been generated a large number of regulations and ordinances whose intent is to prevent just the kind of impacts that this proposal would generate. It is hard to see how this proposal can be taken seriously.

On the other hand it might not be hard. After all, it is a lot of people on the lake shore who happen to have a lot of money who are making this proposal. It seems an effort to wield political clout rather than doing what is right. Well the vast majority of these people moved here after the BPA power lines were in existence and that didn't deter them from moving here to begin with. What gives them the right, now, to push the lines away from themselves and into someone else?

Too often money drives decisions in our society, this is contrary to the basic principles of our government. I urge you to make the option choice best for all. A choice based on known scientific facts and not on the basis of whimsy or legal threats by well funded individuals who would rather not have the power lines near them, now that they're here. I do not see how a good choice could include expanding the width of the right-of-way.

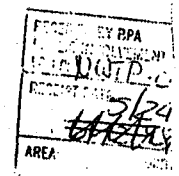
Sincerely yours,

Paul N. Graf

Paul N. Graf

Comment Letters

MAY 2 4 1995



FAMILIES AGAINST INCREASED RISKS (FAIR)

RESPONSE TO SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT

BPA/PUGET POWER NORTHWEST TRANSMISSION PROJECT

FAIR (Families Against Increased Risks) are adamantly opposed to the Bonneville Power Administration/Puget Power Northwest Transmission Project.

(1) In FAIR's past attempts to communicate with you and Whatcom County officials, you have deliberately chosen not to negotiate with our residents on North Shore Road. Your statement regarding discourse has been that you will only take our comments. You will not answer any of our questions.

(2) When FAIR proposed an alternative to your plan to erect a new double circuit line on our properties, you discounted our reasoning strictly from a monetary viewpoint. Arrogance has been your strategy.

(3) Given that the local power demand is no longer the justification for this project, why are you routing the line through our densely populated Western Washington region instead of the Eastern Washington Bonneville Power grid? If power is coming from Canada, why can't it be routed through Eastern Washington?

(4) You have proven to FAIR through your approach that you will compromise our welfare and health. Although the Washington State Department of Health has issued a statement of prudent avoidance of power lines, you have ignored their call for safety.

Due to the carrying capacity of the proposed line, you have not given us a guarantee that you will not exceed the current radiation levels. You have refused to set specific limits on the radiation at the easement boundaries.

(5) We are aware of the pros and cons of Initiative 164. Some ask for a less ambiguous and more effective law. No matter how the proposed law is written, your "taking" of our property, health and welfare is a classic case for this law. Yours is a first class "takings" without proper justification or showing of real cause.

(6) The whole premise for the BPA/Puget Power Northwest Transmission Project is dubious at best. Why are you building a "line for the region" when you are cancelling an energy agreement with Canada? The Associated Press recently reported: "In a sign of its diminished status in the Northwest electricity marketplace, BPA has backed away from a major generation project in Washington and an energy agreement with Canada." The press report goes on to say that the gas-fired power plant in Tacoma has filed a breach of contract for $1.055 billion. You essentially have eliminated a source of power in the Seattle-Tacoma area which may be safer than your present project and in an area of high use. In addition, by

Comment Letters

cancelling the Tacoma project, you are exporting jobs to Canada.

In another recent Associated Press article of May 11th, you were warned by the Northwest Power Planning Council that "you should be accountable for a return on your investments" ... and that "you must resist new costs that aren't market driven." There are new turbine plants running on cheap natural gas which can easily replace hydroelectricity. In this article, aluminum company representatives stated that "scores of private energy companies with new turbine plants that run on cheap natural gas are knocking down the doors of aluminum companies, seeking to replace some or all of the electricity BPA has traditionally provided..."

SUMMARY

In summary, FAMILIES AGAINST INCREASED RISKS would like to reiterate the following:

Several recent studies by independent organizations have proven that extreme health hazards exist from EMF radiation. There are possible links to leukemia in children, tumor growths and physiological changes. Why is it that when utility companies have paid for studies on radiation effects, the results have been inconclusive?

It is disturbing to us that your BPA project is in partnership with Puget Power, a privately owned company. Why should we citizens support Puget Power's stock and private dividends for the stock holders of Puget Power at the tax payer's expense and at our own personal property devaluation?

With the current discussions taking place about the elimination of the Department of Energy, of which you are a part, and about the current huge debt load of BPA, which has yet to pay its loans from the Federal Treasury that were generated years ago, we feel that this proposed project is an excellent example of government waste.

FAMILIES AGAINST INCREASED RISKS (FAIR)
5/24/95

FAIR
P.O. Box 246, Postal Place
1333 Lincoln Street
Bellingham, Washington 98226

Comment Letters

Barbara Dutro
319 Minnesota Avenue
Libby, Montana 59923

August 25, 1992

Jerry Mixon
Deputy SEPA Official
Division of Buidings and Code
284-D Kellogg Road
Bellingham, Washington 98226

Bonneville Power Administration
P. O. Box 3621
Portland, Oregon 97208-3621

Re: BPA/Puget Power NW Washington Transmission Project.

The enclosed letter dated March 6, 1992 was intended to help you formulate a feasibility study for the reconductoring of lines underground along existing highways for the purpose of greater safety and reliability. I do not see this data factored in your analysis and I would like to see it there. Thank you for your attention.

Sincerely,

Barbara Dutro

Barbara Dutro

Skagit System Cooperative
P.O. Box 368 LaConner, WA 98257-0368 Ph. (206) 466-3450
Fax: Management & Enforcement (206) 466-3610
Fisheries/Biology/Environmental Svcs.: (206) 466-3047

US Department of Energy
Bonneville Power Administration
John Taves, Environmental Coordinator for the Office of Engineering
P.O. Box 3621
Portland, OR 97208

RE:BPA/Puget Power Northwest Washington Transmission Project

December 8, 1993

Dear Mr. Taves:

The Skagit System Cooperative is the fisheries management organization that represents the Upper Skagit Indian Tribe, the Swinomish Indian Tribal Community, and the Sauk-Suiattle Indian Tribe. We would like to provide the following comments regarding the BPA/Puget Power Northwest Washington Transmission Project.

It has been our unfortunate experience that BPA has been extremely remiss in its obligation to protect fisheries resources within Skagit County. We have had a longstanding, and as of yet unresolved, dialogue with your local maintenance personnel regarding culverts and road surfaces that are blocking fish access and impairing water quality. It is ironic that while you are spending millions of dollars in the Columbia Basin for fisheries mitigation, your actions in the Skagit Basin show an utter disregard for fisheries resources and their importance to Indian people. BPA is a Federal Agency that has a trust responsibility to the Skagit River Indian Tribes as set forth in our Treaty, and which has been repeatedly reaffirmed by Federal Courts. Enclosed are documentation and memos that substantiate our claims regarding previous BPA actions. It is in this light that we have prepared our comments.

1. Inaccuracies within the Document The data shown in several of the figures are in error, are incomplete, or both. Figure 20 shows protected and/or wild and scenic rivers. The only wild and scenic river in this area at present is the Skagit River above Sedro Woolley,not the Skagit below Sedro Woolley or the forks of Nooksack as shown in the figure. However, chapter 4, page 187 correctly documents this. Figure 23, land ownership -- public and Tribal, fails to show the Upper Skagit Indian Reservation located in the NE 1/4 of Section 8. T.35N., R.5E.

Comment Letters

Figure 21 shows resident and anadromous fish habitat. Hansen Creek (WRIA 03.0267) and its tributaries 03.0270 and 03.0271 have anadromous fish usage (both spawning and rearing) almost up to or beyond the powerline crossing. In addition, Red Creek (03.0268), the eastern tributary to Hansen Creek shown on the figure, is the water supply to the Tribal fish hatchery located on the Upper Skagit Tribal Reservation. The attached map has the extended anadromous zones highlighted in green and the hatchery water supply highlighted in orange. Spawning surveys document coho salmon usage in both Thunder (03.0064) and Mills (03.0070) creeks. Coho salmon spawning has also been documented in the unnamed stream (03.0068) located between Mills and Thunder creeks. Many of the numerous wetlands along the Samish are important overwintering sites for juvenile coho salmon.

2.Mitigation measures: Proposed mitigation for soils/geology is listed in chapter 4, page 86. "Impacts would be reduced and the present environment upgraded by improving existing roads and by using vegetative and mechanical measures to control erosion and stabilize disturbed slopes. Redesign and replacement of failed and inadequate culverts and surface drainage structures on the existing BPA access system .... would control run-off and reduce erosion and sedimentation where the present road system is deeply rutted and culverts are plugged."This indicates that BPA knows that its present crossings and drainage structures are adversely impacting resources, but has neglected to correct the problems. We are unclear as to why BPA has to wait until major project is implemented before existing substandard and/or failed structures or crossings will be corrected. Our experience with a variety of BPA personnel over the past three years has resulted in almost no correction in either structures or maintenance practices which violate state law with regard to water quality and have resulted in damage to anadromous fish habitat. It does not appear that the section of powerline to the east of segments L, M, and N is going to be involved with this project. Does this mean that the problems resulting from very poor maintenance and installation practices will continue until a major revision of this section of the powerline is scheduled? We hope this is not the case, and would like to know what your schedule is for repair of these segments.

Chapter 4, page 83 states: "Impacts would primarily be caused by construction, and would be short-term with successful erosion control and other mitigative measures. However, with ineffective mitigation, impacts would be long-term and consequences of erosion, sedimentation, and soil compaction could affect other resources". As has been stated above, our experience has been that BPA's record of performance in the past has been one of "ineffective mitigation", which has effected other resources. What assurances do we have that your future actions will be any more responsible than those demonstrated in the past. Is the BPA ready to demonstrate

that mitigation will be effective by correcting the significant problems with the present system, or are your mitigation plans merely claims which will allow this proposal to go forward?

Chapter 4, page 113, discussing fish and wildlife [BPA] mitigation states: "Culverts, arch bridges, or other stream crossing structures should be installed at all permanent crossings of flowing or dry water courses where fill is likely to wash out during the life of the road. Bridges and arch-bridges are preferred to culverts. However, where appropriate, culverts should be big enough to handle approximately 25-year floods, and designed to allow for fish passage." Why, if you are designing "permanent crossings" are you using the 25-year flood sizing? Even logging roads in this state are required to design for the 50-year event. It is unacceptable for Indian Tribes to sustain losses to Federally protected resources because of design standards below even those required at the local level. If "bridges and arch-bridges are preferred to culverts", why have they been avoided in this local area? We do not know of a single installation of this type in either the Samish or Skagit drainage BPA right of ways. We are also unclear as to what you mean by "allow for fish passage". What species and what life history stages are you allowing to pass and how do you establish whether or not your design works?

As stated above, our main concerns regarding this proposal stem from our past experience with BPA. It has been one of the least responsive organizations of any we have worked with in terms of correcting on going damages to water quality and fish habitat. The incomplete, and in some cases erroneous nature of the data coupled with inadequate mitigation detail and previous experience with BPA performance lead us to the conclusion that(1) until errors in the document are corrected, (2) mitigation measures are adequately detailed and modified to provide for fisheries protection and (3) an adequate work plan is developed for correcting existing road related problems adversely effecting fisheries as a result of previous BPA problems, we are opposed to the upgrade of the transmission system as proposed. We believe that implementation of this project as proposed will adversely impact fisheries resources upon which the Skagit River Indian Tribes depend.

Sincerely,

Larry Wasserman
Environmental Services Director
Skagit System Cooperative

cc Tom Clune
Doreen Maloney

Comment Letters

Skagit System Cooperative
P.O. Box 368 LaConner, WA 98257-0368 Ph. (206) 466-3450

April 22, 1991

Richard A. Albrecht - EFDJ
Civil Engineering Technician
Bonneville Power Administration
P.O. Box 3261
Portland, Ore 97208

Dear Mr. Albrecht;

The Skagit System Cooperative (SSC) is the fishery management agency for three federally recognized tribes -- Swinomish, Upper Skagit, and Sauk-Suiattle. SSC is a co-manager of the fisheries resource with the Washington Departments of Fisheries and Wildlife. The management of habitat in addition to the management of harvest results from the recognition that in order for the exercising of the fishing right, there must be fish. Judge Orrick, Civil No. 9213 - Phase II Opinion, stated that "... specific environmental conditions must be present. A fisheries study prepared jointly by the State and the federal government identifies at least five such conditions: (1) access to and from the sea; (2) adequate supply of good quality water; (3) a sufficient amount of suitable gravel for spawning and egg incubation; (4) an ample supply of food; and (5) sufficient shelter. It is undisputed that alteration of even on of these essential, finely-balanced requirements will affect the production potential." Therefore, one of the long range goals of SSC is the correction of all road related anadromous fish problems -- access and/or sediment problems.

SSC is involve in several programs whose partial work product is the identification of fisheries habitat problems and opportunities for restoration and enhancement. These programs are the following:

1. Participation in Washington State's Timber, Fish, and Wildlife Agreement involves the review of forest practices in the Skagit and Samish drainage basins. An inventory of stream channel destabilization sites and barriers to anadromous fish migration is a coincidental product of this process.

2. SSC is participating with Skagit County in preparing a watershed management plan to protect the benifical water uses. This effort is currently focused in the Nookachamps drainage, however it will extend to the rest of the basin over time. One of the products of this plan is an inventory of adajacent land uses and their impact (potential or actual) on water quality.

3. As part of a coho salmon population research contract under the U.S. - Canada Pacific Salmon Treaty, SSC fisheries technicians have identified barriers to salmon migration while performing spawning surveys. Some of the barriers could be removed or made passable, restoring salmon and trout access to once productive habitat.

The road related problems looked at in the Cokedale Lane area on March 20, 1991 by the Washington State Department of Fisheries, SSC, and BPA affect a significant number of wild coho salmon. The 1988 total wild coho spawner escapement in the Skagit basin was estimated to be 63349 fish and the Hansen creek portion was estimated to be 1389 fish. The two tributaries affected by the road system under consideration represent 39% of the spawning miles in the Hansen creek watershed which results in an estimate of 541 adult fish potentially affected by these roads. The 1986 spawner estimate for the Hansen creek watershed was 2400 fish -- or roughly twice as many.

Because of their relatively poor stock status, Skagit natural coho have constrained fisheries throughout the Pacific Northwest, from Canada to Oregon, and inside Puget Sound. The constraints put on these fisheries in order to protect Skagit coho has been a topic of frequent discussion in the Pacific Salmon Commission, as well as in the Pacific Fisheries Management Council, because these constraints frequently have the effect of preventing fishermen from catching large numbers of other harvestable stocks with which they are intermixed. For example, the production of one additional harvestable Skagit coho allows the ocean fisheries to catch about 50 additional coho (those not returning to the Skagit), and allows Puget Sound fisheries to catch about 100 additional sockeye or pink salmon.

The information above should be sufficient to establish the significance of the stocks under discussion to the Skagit River wild coho salmon run and additionally, the importance of the Skagit stocks to the west coast fisheries. The passage and sediment problems on the Cokedale Lane road system need to be corrected.

Please contact Keith Wyman at (206) 466-7282 if you need any of the above information expanded.

Sincerely,

Doreen Maloney, Fisheries Manager, Skagit System Cooperative

Comment Letters

March 17, 1993

Mr. Gerald A. Stackpole. Superintendent
Puget Sound Area Line Construction and Maintenance
Bonneville Power Admin.
201 Queen Anne Ave. N.
Seattle, WA 98109

Dear Jerry;

I appreciated the opportunity to meet with you and Scott Bettin on March 8, 1993 to go over some of the problems and solutions for the BPA power line road right of way. I thought I'd better send you a note with my understanding of what was going to be done.

The major issues in the Walker Valley area were problems with old road maintenance practices. Future road work in the vicinity of streams will not have any sidecast of spoils if there is any chance of them going into running water; instead they will be endhauled to areas where runnoff and sediment will not reach flowing water. Water-barring, relief culvert installation, upstream and downstream armoring of fills, extension of culvert inlets and outlets, and the use of better road surfacing materials were all proposed in order to reduce or eliminate road associated runoff impacts to salmon habitat. Jute or straw mat with seeding was also proposed for the worst of the sidecast raw slopes where there was direct access to the streams.

The bulk of the work to be done in the Hansen Creek/Cokedale Lane area consists of the replacement of inadequate culvert crossings with either larger culverts and rock fill or by construction of a wet ford. I'm in the process of trying to contact the right people in DNR to find out about a possibility for coordination of some of the proposed work out at the west end of the road. You should also contact Steve Bratz at Crown Pacific, Ltd. (206 826-3951) if you want to try to coordinate the work where the wet ford is proposed.

Implementation of these measures will have major effects in reducing the unacceptable amounts of fine sediment presently generated by the BPA road system. Adoption of some of these practices as standards for future maintenance procedures is highly desirable and should result in a more efficient process from both the environmental and the maintenance perspectives.

I would appreciate receiving copies of proposals and/or timetables for the work under consideration and I would also like to be kept informed about any changes regarding BPA construction and maintenance practices that involve moving water.

Thank you again for your time and cooperation.

Sincerely,

Keith Wyman, TFW Coordinator

c: Robert Penhale, DOE
Kurt Buchanan, WDF
Scott Bettin, BPA

Comment Letters

Skagit System Cooperative
P.O. Box 368 LaConner, WA 98257-0368 Ph. (206) 466-3450
Fax: Management & Enforcement (206) 466-3610
Fisheries/Biology/Environmental Svcs.: (206) 466-4047

May 12, 1993

Mr. Gerald A. Stackpole, Superintendent
Puget Sound Area Line Construction and Maintenance
Bonneville power Admin.
201 Queen Anne Ave. N.
Seattle, WA 98109

Dear Jerry;

I recently spoke with Alison Hitchcock, unit forester for the Department of Natural Resources, and she said that the work planned for the west end of the Hansen Creek/Cokedale Lane road system consists of armoring the upper and lower ends of the culverts. I would suggest that you contact her at (206) 856-3500 and maybe work out some sort of agreement where BPA is providing for the installation of a larger pipe and DNR makes arrangements for the armored fill.

I would appreciate an update about the road maintenance and culvert work we discussed on March 8, 1993.

Thank you.

Sincerely,

Keith Wyman

Keith Wyman, TFW Coordinator

c: Robert Penhale, DOE
Kurt Buchanan, WDF
Scott Bettin, BPA
Alison Hitchcock, DNR

Skagit System Cooperative
P.O. Box 368 LaConner, WA 98257-0368 Ph. (206) 466-3450

June 15, 1992

Mr. Jerry Stackpole
BPA Administration, TDT
P.O. Box C-19030
Seattle, WA 98109-1030

Dear Mr. Stackpole:

This note is to confirm our meeting scheduled for June 23, 1992. Kurt Buchanan, WDF; Dave Parks and/or Robert Penhale, DOE; and I will meet you at 9 a.m. at the Mount Vernon Department of Fisheries office (map enclosed).

The specific subjects we want to cover and resolve are as follows:

1. The blocking (to anadromous fish) culvert located in section 26, T35N, R5E.
2. Stream sedimentation resulting from road maintenance practices along the BPA right-of-way, especially in the Nookachamps Creek drainage. Both time of year and the way work has been done are of concern.
3. The culverts in the Hansen Creek drainage (Cokedale Road) right-of-way which have been and continue to be problems.

I am looking forward to meeting you. If you have any questions, I can be reached at (206) 466-7282.

Sincerely;

Keith Wyman

KEITH WYMAN,
TFW Coordinator

cc: Kurt Buchanan, WDF
Robert Penhale, WDOE

Comment Letters

July 8, 1993

Dave Parks
Department of Ecology
3190 160th SE
Bellevue, WA 98008-5452

Dear Dave;

Enclosed are copies of the maps and correspondence you requested during our visit to the Bonneville Power Administration right-of-way. The 1992 letter was the one I sent out prior to our visit last year. The 1993 letter was a follow up to an on-site meeting held earlier this year when all of the problems with BPA road maintenance practices were solved.

I've sent you the video out in a different package. It should be ready to view. The activities this summer actually seem to be worse than those of last year. It's rather discouraging to be headed in a backwards direction.

Sincerely,

Keith Wyman
TFW Coordinator

cc: Kurt Buchanan, WDF
Butch Huhn, DNR
Gerald Stackpole, BPA

WASHINGTON STATE DEPARTMENT OF
Natural Resources

JENNIFER M. BELCHER
Commissioner of Public Lands

KALEEN COTTINGHAM
Supervisor

December 17, 1993

RECEIVED BY BPA
PUBL. INVOLVEMENT
LOG #: AWTP-295
RECEIPT DATE:
12/23/93
AREA: DISTRICT

Mr. Lou Driessen
Project Manager
Bonneville Power Administration
Public Involvement Office ALP
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Driessen:

This letter is to formally comment on Bonneville Power Administration's proposed Northwest Washington Transmission project as outlined in the Draft Environmental Impact Statement. The Department of Natural Resources is concerned with project impacts in corridor segments A, E, F, G and H1.

Corridor Segment A

This segment links the Custer substation with the main transmission line. It crosses State land in the SW1/4 of Section 36, T.40N., R.1E. The DEIS (pages 4.133 and 4.134) says that the existing transmission line has already imposed land use limitations along the right-of-way. The DNR is aware of the existing limitations. The DEIS further states that the project is not expected to "alter significantly" the impacts on land use and resources on or off the right-of-way. Regardless of significance, the DNR needs to know specifically the alteration to current land use limitations that this project would cause.

Corridor Segments E, F and G

These segments cross State land in T.37N., R.4E. and R.5E. They lie almost entirely in the Lake Whatcom watershed. The DNR has two mainline forest management roads which provide access to the existing transmission line corridor. The ML-1000 road is in the Mirror Lake block (south of Park road) and the H-3300 road is in the Haner Mountain block (north of Park road). Numerous transmission line access spur roads (built by BPA) intersect the DNR forest management roads. These BPA spurs are poorly constructed and minimally maintained. Drainage is inadequate and in some cases the spurs have regressed into nothing more than gullies. The physical, environmental and economic impact to the DNR road system is severe. For example, in December of 1992 heavy rains falling on the BPA spurs resulted in the H-3300 road ditch being clogged with silt and debris which washed down from the BPA spurs. When the ditch was plugged, water came onto the H-3300 road causing further erosion and scouring. The DNR spent $5000 to fix the road after the storm.

Comment Letters

The DEIS lists several mitigation ideas (page 4.86) to control erosion and run-off such as revegetation, culvert installation and water bars. In addition to these items, the DNR would like to see a more aggressive approach in solving the problem:

1. Inventory the existing BPA access road network. Decide which spurs are needed to provide minimum functional access to transmission line structures. Then decide which spurs are no longer needed.

2. Reconstruct spurs that are needed so that they have adequate drainage and road prism characteristics.

3. Abandon spurs that are not needed by removing culverts, constructing waterbars, trenching, contour excavating and revegetating.

The DNR engineers have experience and expertise in road design, construction, maintenance and abandonment. They would be available as consultants to assist BPA in site specific evaluations of access spur impacts. Ideally, the reconstruction and abandonment work could be incorporated into the transmission line construction contract.

Corridor Segment H1

This segment is an alternative route which lies east of an existing route on segments H, I and J. It crosses State land in Sections 7 and 18, T.36N., R.5E. The DEIS (page 2.31) says this segment would require a new 112 foot wide right-of-way with associated access spurs. This would involve clearing approximately 20 acres of timber on State land, as well as building numerous access roads in the Thunder creek and Mills creek drainages. Since BPA has an existing right-of-way corridor on segments H, I and J, the DNR is not interested in granting an additional right-of-way for purposes of this project. The DEIS makes it clear that BPA favors using segments H, I and J rather than H1.

The DNR would appreciate a response from BPA regarding the above issues. Please mail your response to:

Department of Natural Resources
Northwest Region Headquarters
919 North Township Street
Sedro Woolley, Washington 98284
Attn: Brian Davis

Thank you for soliciting these comments.

Sincerely,

Brian Davis

Brian Davis
Baker District Engineer

December 29, 1993

INFO ONLY

FAIR
Families Against Increased Fields
1333 Lincoln Street
Bellingham, WA

LOG: NWTP-2-1
RECEIPT: 1 11 94
AREA:

Bobbie Berkowitz, Deputy Secretary
State of Washington
Department of Health
Communicable Disease Epidemiology
1610 NE 150th St.
Seattle, Washington 98155-9701

Dear Deputy Secretary Berkowitz:

We are writing this letter after a telephone discussion one member of our group had with you on Wednesday, December 23rd. We are a group of extremely concerned families who live adjacent to the Bonneville Power Administration/Puget Power Northwest Washington Transmission Project. Our homes are located along Lake Whatcom in Section E of the proposed project. BPA has publicized a date of January 14th as the last day for comments on the EIS draft.

BPA's current plans are to upgrade an existing 230-kV H-frame wood tower by replacing it with a 500-kV double circuit (1 million volts) line on lattice steel towers. Numerous families would receive heavy doses of radiation from the new lines as well as adding to the already existing noise pollution.

We are petitioning BPA to further study the impact of the project and requesting that (1) BPA build the new power lines far back from the present easements and on government owned lands or land zoned for forestry; (2) or bury the new lines using the latest EMF reduction technology.

There is no doubt that enough studies have been done to give us legitimate concerns on health risks with this proposed project. There has been early work by two epidemiologists, Nancy Wertheimer and Ed Leeper in Denver where they found a link between childhood cancer and homes near electrical substations and transformers. Recently, the Swedish studies (a) National Institute of Occupation Health (b) Institute of Environmental Medicine indicate strong evidence that people exposed to EMF's from power lines of two milligauss or greater have a higher incidence of leukemia and brain tumors. Studies show that the stronger the magnetic field exposure, the greater the association with cancer. Households with long term exposures or two milligauss have triple the risk of leukemia. At three milligauss the rate quadrupled. Children who supposedly lived within 160 feet of high tension wires had three times the rate. Many of our own homes would be within the danger zones. We do not need these studies to come from within the United States to consider them

Comment Letters

valid. It seems that most of the studies that call for "further investigation" are sponsored by the utility companies.

Your referral of our situation to State Epidemiologist Patty Waller is helpful. However, at this time, we citizens of Washington State need quick and decisive action concerning BPA's proposal. We did receive your generalized information sheet that calls for "prudent avoidance." But, we would hope that our state health agency would protect us from obvious health situations of high risk and would ask BPA to delay their project until alternative solutions can be found.

The power provided by the new lines will be sold out of state. In fact, currently there is a surplus power situation in Whatcom County due to several brand new co-generation plants. Georgia Pacific, Inc.'s new Bellingham plant provides enough power to cover 119,000 new homes alone!

It is enough of a travesty that the Washington State Utilities Commission lets Puget Power stockholders get 10% risk free returns on their money at the citizens' expense. We request you, our State Department of Health, to relate to our concerns and to delay the permit process for this project. Why should 30 to 40 families suffer psychological and physiological risks when good alternatives exist. In the future we do not want to have to refer to this project along with other deceptive projects, such as Hanford Downwind or Agent Orange. We, citizens of Washington State, request that your office officially respond to this letter within BPA's comment response time (January 14th). Please send written response to:

FAIR
Families Against Increased ...
1333 Lincoln Street, #2...
Bellingham, WA 98226

Sincerely,

Craig T. Langager 2970 N. Shore Rd. Bellingham, WA. 98226
... Wright 2730 N. Shore Rd. Bellingham, Wash. 98226
... Efing 2726 N. Shore Rd Bellingham, WA 98226
Kate Efing 2726 N. Shore Rd. Bellingham, Wa. 98226
Lonnie A. Brennan 2722 N. Shore Rd Bellingham Wa. 98226
Kathy Lowell 2976 N. Shore Rd. Bellingham WA 98226

December 29, 1993

Bobbie Berkowitz, Deputy Secretary
State of Washington
Department of Health
Communicable Disease Epidemiology
1600 NE 150th St.
Seattle, Washington 98155-9701

FAIR
Families Against Increased ...
1333 Lincoln Street, #2...
Bellingham, WA 98226

Signatures of Petitioners

(Sandy Farringer) 2958 N. Shore Rd Bellingham, WA 98226
Judith D. Andrews 2990 N. Shore Rd. Bellingham WA 98226
Michael Kaufman 4020 Huntley Rd.
Scott Walker 2836 N. Shore Dr. Bellingham
Tom Livingston 2734 N. SHORE RD
Guillermo Powell 3307 ... Bellingham, WA 98226
Elizabeth Vedmer 2716 N Shore Rd Bellingham, WA 98226
Fred Tanner 1211 Franklin Bellingham WA 98225
John ... 2728 North Shore Rd Bellingham WA 98226
John Sutley 3006 N. SHORE RD. Bellingham, WA 98226
Irene Insulock 3044 North Shore RD. Bellingham WA 98226
Ron Clagg 2904 North Shore Rd. B'ham, WA.
Penelope P. Walker 2836 North Shore Rd, Bellingham, Wa.
Sarah Clark-Langager 2970 North Shore Rd Bellingham
Susan McClain 2964 N. Shore Rd. B'ham WA 98226
Caroline C. Chamblin 2964 N. Shore Rd. B'ham WA 98226
Ronald J. Lowell 2976 N Shore rd B'ham WA 98226

Comment Letters

P.M. Andress, Jr. D.O.
2790 N. Shore Rd
Bellingham, Wa 98226

John T. Andress
2790 N. Shore Rd
Bellingham WA 98226

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

December 29, 1993

John Thielemann
State of Washington
Department of Health, Northwest Drinking Water
1511 Third Avenue, Suite 719
Seattle, Washington 98101-1632

Dear Mr. Thielemann:

We are writing this letter after a telephone conversation one member of our group had with you on Wednesday, December 23rd. We are a group of concerned families who live in Section E of Bonneville Power Administration's new proposed power lines. Section E is the area that runs along the shoreline of Lake Whatcom, Bellingham's municipal water supply.

We have concerns due to BPA's lack of study in this environmentally sensitive area. This area is known for its unstable slopes and heavy run-off from Stewart Mountain into the east side of the lake. Several homes were washed out into the lake in 1983 and we had severe erosion and sedimentation problems during the storms of November 1989 and 1990. Some of this erosion and sedimentation was caused by BPA's lack of suitable construction techniques when placing culverts and when building the road under the existing power line corridor. In their proposal to upgrade the power lines by installing new lattice steel towers and by building a new road, our anxiety centers around the fact that BPA has not monitored this water run-off and soil de-stabilization. There are no specific facts or documentation in the EIS draft on these sensitive existing conditions.

To defend our lake water along with our wells and septics we feel that: (1) your office should demand that BPA monitor the run-off in peak winter months (historically November) to determine proper procedures for road building; (2) your office should continue to examine this situation so that protective measures are taken during and after construction. We citizens who drink Northwest water would hope that BPA's proposed project would be delayed until this accurate field work is done.

Sincerely,

Comment Letters

December 29, 1993

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

John Thielemann
State of Washington
Department of Health, Northwest Drinking Water
1511 Third Avenue, Suite 719
Seattle, Washington 98101-1632

Signatures of Petitioners

[signature]	2730 N. Shore Rd Bellingham, Wash. 98226
[signature]	2726 N. Shore Rd Bellingham, WA 98226
[signature]	2726 N. Shore Rd. Bellingham, Wa 98226
[signature]	2970 N. Shore Rd. 98226
[signature]	2722 N. Shore Rd Bellingham Wa. 98226
[signature]	2956 N. Shore RD Bellingham, Wash 98226
[signature]	1620 Hemlock Rd. Bellingham WA 98226
[signature]	2836 N. Shore Dr. Bellingham
[signature]	2728 N Shore Rd Bellingham
[signature]	3004 N. SHORE RD. Bellin[illegible]
[signature]	Guillermo Powell 3307 AGATE BAY LN. Bellingham,
[signature]	2716 N Shore Rd Bellingham
[signature]	3044 North Shore Rd Bham
[signature]	2904 North Shore Rd Bham.
[signature]	2836 North Shore Rd. Bham
[signature]	2970 North Shore Rd.,
[signature]	2976 N. Shore Rd Bellingham, WA 98226

COPIES HAVE BEEN SENT TO:

Lou Driessen, Project Manager, BPA, Bellingham
Marion Wolcott, Permit Dept., BPA, Portland
Randy Hardy, BPA, Portland
Ron Middleton, Deputy, SEPA Official, Bellingham
John Campion, Project Manager, Puget Sound Power and Light Co., Bellingham
Al Swift, US Congressman, Bellingham
Pete Kremen, State Representative, Olympia
Ward Nelson, Whatcom County Council Representative, Bellingham
Christine O. Gregoire, Attorney General, Seattle
Army Corp of Engineers
Art Stendahl, Dept. Wildlife, Mill Creek
Dr. Sam Milham, Olympia
Bobbie Berkowitz, Deputy Secretary, Dept. Health, Olympia
John Kobayashi, Acting Chief of Epidemiology, Dept. Health, Seattle
Dr. Juliet Van Eenwyk, Dept. Health, Epidemiology, Seattle
Patti Waller, Epidemiology, Dept. Health, Seattle
Frank James, Whatcom Co. Public Health, Bellingham
John Thielemann, Dept. Health, Northwest Drinking Water, Seattle
Ed Good, Whatcom County Hearing Examiner, Bellingham
Prof. Donald J. Easterbrook, College of Environmental Studies, WWU, Bellingham
Editor in Chief, The Bellingham Herald

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

Comment Letters

December 29, 1993

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

John Thielemann
State of Washington
Department of Health, Northwest Drinking Water
1511 Third Avenue, Suite 719
Seattle, Washington 98101-1632

Signatures of Petitioners

Carolyn W. Carl 2964 N. Shore Rd. Bham WA 98226
Caroline C. Chamblin 2964 N. Shore Rd. Bham WA 98226
Ronald J. Lovell 2976 N Shore rd. Bham WA 98226
Judith D. Andress 2790 North Shore Road Bellingh
2790 N. SHORE Rd
BELLINGHAM, WA.
P.M. ANDRESS, R.D.O.
2790 N. Shore
Bellingham Wa
John T. Andress

page 1 of 3

January 3, 1994

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG: NWTP-2-162
RECEIVED
1 11 94
AREA: DISTRICT

Public Involvement Office - ALP
Bonneville Power Administration
P.O. Box 12999
Portland, OR 97212

Gentlemen:

We are writing this letter in response to the options for the BPA/ Puget Power Northwest Washington Transmission Project. We have the following comments on your draft EIS proposal. Our comments pertain to section "E" of the project as depicted on figure 23 of the Draft Environmental Impact Statement.

1. Of the choices offered, We prefer none although, Option 1, as specified in your August 1993 "Fact Sheet No. 7", could be made acceptable if it were to be located on the other side of the easement in Section "E" to further minimize the EMF & visual impact on residents.

2. Of the choices offered, we do not like any. We live in one of the most beautiful and environmentally sensitive areas of Whatcom County. Naturally,we are intensely concerned that additional/larger transmission line structures along the corridor will have a negative scenic and environmental impact on our area. We do not feel that you have fully explored other options that would mitigate the impact to the residents along section E. Of paramount concern is the fact that your proposals are designed to increase power transmission yet you are intent on locating the new lines in close proximity to existing residences. The families of these residences will be subjected to increased health risks when the lines are operated at their maximum current capacity. At the very least, you need to explore locating the new lines on the back side of your easement which is farther away from residences. Many families along this sensitive section of the corridor have young children whom, studies suggest, are more susceptible to EMF induced health risks than adults.

Comment Letters

3. You could improve all of the choices by:

(1). Moving the new line well away from the residences, particularly in section E where the lines run close to homes. In particular, consider relocating the new line to the other side of the easement or rerouting the easement through undeveloped lands(mostly DNR lands) well beyond any residences.

(2). Performing EMF monitoring at the easement boundary to generate legal baseline exposure data so that residents may be able to determine whether their EMF exposure has been increased once any new lines have been added(with the attendant health risks). Property buyout offers/compensation must be offered in the event of increased EMF's over the baseline data.

4. We think the analysis would be better if you:

(1). Discuss in greater detail the plans for maintaining the water quality(i.e. streams & creeks that feed lake Whatcom). This is of particular concern in view of the fact that many families along Lake Whatcom pull their drinking water directly from the lake. Additionally, as you know, Lake Whatcom is the drinking water source for approx. half of the county.

(2). These proposals increase your power transmission capacity. The EIS should specify the maximum current load that the new lines are capable of carrying and make an EMF comparison between this "line limit" case and the today's loadings. In addition, we believe that a mechanism should be included in your EIS that specifies how families will be informed when current loading is increased beyond what is outlined in your three options.

(3). A more thorough analysis of Whatcom county's power requirements should be made in light of the start-up of new cogeneration power plants in both Whatcom & Skagit counties. These new "cogen" plants would appear to alleviate the local need for increased power transmission capacity. More detailed comment on why this proposal has significant value to local residents should be made in the EIS.

5. We also have these comments:

(1). The Bellingham School District has plans to build a new high school in the Dewey Road area. We would like to know how this project will affect those plans. Has the School District been contacted regarding your proposal? Include their plans in your EIS.

(2). The families in section "E" have formed a group, F.A.I.R.(Families Against Increased Risks), which is opposed to your proposals in their current form. Unless our concerns are addressed, you can expect increased public, political, and legal opposition to this project as well as increased media scrutiny.

Respectfully,

Kate Eifrig

Kate Eifrig

Martin Eifrig

Martin Eifrig
2726 North Shore Rd.
Bellingham, WA 98226
(206)671-7246

Comment Letters

Ray & Dolly Tompkins
2223 Mosier Rd.
Sedro Woolley, WA 98284

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-2-6
RECEIPT DATE:
1/13/94
AREA: DISTRICT

January 6, 1994

Bonneville Power Administration
Public Involvement Office - ALP
P.O. Box 3621
Portland, OR 97208

Dear Sir:

We have attended the open houses you have sponsored at Sedro Woolley, and have provided input as opportunity has been given to do so. Because your Transmission Project has the potential of seriously impacting our land, our health, and our view, we are again expressing our concerns and preferences.

At the last open house one of your representatives told us that BPA tries to make changes in such way as to impact the fewest number of people, avoiding populated areas. We therefore request that the Transmission Project not affect the L, M, and N corridor segments and that the changes all be routed through the eastern corridor with a new short tie-line to the Sedro Woolley substation. This would very obviously affect the least number of people.

Your "Draft Environmental Impact Statement" provides data that shows there will be either very little EMF change, or perhaps even a decrease in the EMF, depending on the option exercised. We request that you, at your time and expense, conduct a complete EMF study, during times of the most intense EMF, on our property before you commence the Transmission Project (your representative said you would do this), and at annual intervals through the year 2001. If the EMF beyond the easement is greater after the project, what recourse do we have, how will you correct it, and what compensation will you make to all of those of us along the corridor, whose health you are putting in jeopardy?

Another of our major concerns is the visual impact of taller towers. We request that the tower height be no greater than the existing towers along the L, M, N corridor segments, if you chose to implement the project along that corridor. If higher towers are to be installed, we request that they be the least increase in height of the options you show. We further request that you redesign the towers. Current tinkertoy design is not only ugly to an extreme, it is labor intensive to construct. Please have one of our university engineering schools accept the challenge to redesign towers for both beauty, function and cost effectiveness; or, install only the improved appearance transmission line towers.

We have discovered, as you are well aware, that conservation of electricity has increased our rates. What will the impact of your new project be upon our rates? Even the electric company has been encouraging customers to convert to gas wherever possible. Conversion to gas appears to be happening on a large scale. Given the success of the "convert to gas program", are you sure this project is needed?

Thank you for the opportunity to provide input. We trust that you are sincere in requesting our input, and therefore trust that you will do all you can to implement our recommendations. We look forward to your response.

Respectfully,

Dolly L Tompkins

Page 2 [illegible] Transmission Lines.

earthquakes, or [illegible].
4. No effect on safety or danger to human lives.
5. [illegible] benefits [illegible] due to reliability, and ease of maintenance.

If the [illegible] benefits [illegible] new building of transmission lines should be underground in the future and [illegible] could be put underground.

I would like to see a through discussion of the issue in the Environmental Assessment.

Thank you for your [illegible]

Sincerely,

Barbara Dutro

These comments were written in response to your scoping effort in March of 1992. You wrote your E.A. ignoring them completely. I find no mention of any of these factors in your document and I expected you to discuss these relevant issues, visual disturbance, effects on wildlife, reliability, safety and cost for high tension lines strung across the land.

The positive aspects of underground reconductoring would more than offset and discrepancies in cost giving a positive cost/benefit ratio if these (over)

factors of reliability and ease of maintenance were considered and properly quantified. I expected you to lead. You did not. You are pursuing over development.

I am the inventor of a wind energy device that leads the way into a solar/wind energy conversion future that will allow free-enterprise to meet our energy needs without government interference and pork-barrel largess. You were supposed to be facilitating this kind of "Laise Faire" business, and you led that you would be there. You have tied up all the capital with your schemes for more central station facilities and you are blocking my free enterprise. I do not want you there. I want to quote Adam Smith in the "Wealth of Nations".

> "Man is generally considered by statesmen and projectors as the materials of a sort of political mechanics. Projectors disturb nature in the course of her operations in human affairs; and it requires no more than to let her alone, and give her fair play in the pursuit of her ends that she may establish her own designs." "Little Else is requisite to carry a state to the highest degree of opulence from the lowest barbarism, but peace, easy taxes, and a tolerable administration of justice; all the rest being brought about by the natural course of things. All governments which thwart this natural course which force things into another channel or which endeavor to arrest the progress of society at a particular point, are unnatural, and to support themselves are obliged to be oppressive and tyrannical."

These power lines are just that, and any further investment in their impingement on our sensibilities is wrong.

I want to pursue my own happiness and you are obstructing me with this unnatural development.

Comment Letters

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

December 29, 1993

The following is a summary of Bonneville Power Administration's inability pertaining to proper maintenance and repair of their access road along the power transmission line corridor.

An area of B. P. A.'s transmission corridor is adjacent to the north side of my property. A maintenance/access road runs along this corridor crossing numerous seasonal creeks, drainages, etc. which run into nearby Lake Whatcom. After crossing the access road, one of these creeks runs along my western property line until reaching North Shore Road. It is then forced to make a 90 degree turn to the east and run approximately 200 feet where it joins another creek, then both run through a culvert under North Shore Road and into Lake Whatcom.

Beginning in the fall of 1988, during a period of typical heavy rainfall, the culvert was too small to handle the creek volume. Water backed up behind the culvert resulting in partial roadbank erosion sliding into the creek. This debris continued downstream until encountering the 90 degree turn. Rock, mud, gravel and subsequent water filled the ditch, spilling out onto the roadway with all this material flowing directly across North Shore Road, whereas it then flooded onto my waterfront property and spilled into Lake Whatcom. The County Road Department had to come out and clear the road and drainage ditches. I, myself, had to hand shovel the 60 to 70 wheelbarrel loads of mud and gravel off my lawn. After notifying B. P. A. of the occurrence and the erosion problem at the culvert road bank, no action was taken by B. P. A.

Throughout the fall and winters of 1988 and 1989 during higher runoff volumes, additional roadbank material continued to sluff off into this creek causing the similar problems to a lesser degree. Again B .P. A. was informed of this occurrence and again no action was taken on the part.

In the fall of 1990 during yet another period of heavy rains the whole road, including the culvert, washed completely out once again sending a large amount debris downstream, blocking North Shore Road. And once again it spilled onto my waterfront property and into the lake. Again the county had to come out and clear the road and drainage ditches and again I had to hand shovel this mess off my lawn.

As always B. P. A. was notified. Finally, in the summer of 1991 B. P. A. came out and put in a new culvert. To my astonishment, they put in the exact same size as the one that washed out! Also, the old culvert was left lying on the ground adjacent to my property line. I called B. P. A. and told them that the new culvert was entirely too small for heavy winter runoff, but no further action on Bonneville's part was taken at that time.

In the winter of 1992 I attended the scoping meeting which took place at Blodel Donovan Park concerning input for the Environmental Impact Study on Bonneville's proposed Transmission line expansion. I stood up and voiced my concerns including the culvert washout problems. Now that this was made public and down on record, B. P. A. contacted me personally within a week and in the summer of 1992 the newer culvert was dug up and replaced with a somewhat larger one. The old culverts were then taken away.

I still have some concerns pertaining to the roadbank. Around the new culvert it was bermed with the roundish Nooksack Riverbed rock which slides very easily and is not the proper type rock to hold up a steep bank for erosion prevention, though it is inexpensive. And what about all the hundreds of other culverts throughout the corridor? If the expansion project goes through as planned, major road work is going to occur along the corridor.

Bonneville's track record makes me very skeptical that any of this will be handled properly. The road work is scheduled to take place during the summer months. I have never seen anyone from B. P. A. come out here during heavy winter rain runoffs and properly access the situation. I've been informed that culvert size should be at least three times the size of what's in place now. Proper type berm rock for the road banks should also be used.

Given Bonneville's track record, from others as well, I have grave concerns over their transmission powerline expansion project.

Todd Crossman
2958 North Shore Road
Bellingham, WA 98226
(206) 671-2225

Comment Letters

To whom it may concern

In April 1993 we sold our house at 3020 St Clair Street. One main reason for doing this was the proposed higher voltage power that is to be constructed with a portion of the completed new lines on our tract. From my research on EMFs I feel there was too great a risk for our daughter, my daycare children and ourselves. I filed two petitions in behalf of neighbors and parents of the children in my daycare. But there seemed to be no stopping this project. Myself and everyone who signed those petitions are still in total agreement. The risk is too great to take. There are children's lives at risk. The project needs to be stopped, rerouted or the lines buried.

Teri & Jon MacDonald
250 E Elizabeth St.
Bellingham 98225

D.C. Line Maintenance History: A Landowner's Personal Viewpoint

NWTP-2-75 (1)

I purchased land under the B.P. lines in 1969, so my experience with B.P. management style & maintenance procedures goes back almost 25 years. I disliked the B.P. lines from the start but reasoned that (in 1969) that B.P. impinged upon only a few acres. But by 1971 I was in for real trouble: a third line went through, thus widening the B.P. swath to a distance wider than the length of a softball field.

The construction of the third line caused havoc. B.P. contractors continually ran up & down my road, dropped in at odd times, requested the use of my phone, burned papers in my fireplace, etc. Workers plowed across Olsen Creek, a spawning stream & drinking water supply, in huge trucks & tractors. The mini level was horrendous much of the time, & construction workers were crossing the stream & charging up its eroding banks for months. There was no forewarning of when they might arrive or of what might happen next. In essence, my land became an industrial zone over which I, the landowner, had no control whatever.

In subsequent years the basic pattern has been the same. I have asked for advance notice as to when line maintenance would be performed. It always has seemed reasonable that if spraying or tree cutting was to be done, the landowner should be told ahead of time. Sometimes B.P. officials agreed & tried to accomodate me, but most of the time contractors would barge in unannounced, spray trees they decided they would cut (usually in large, bright orange letters) & continue down the line. Many of

Comment Letters

(4)

the spray-painted trees were never cut because other B.P. employees decided (apparently) that they were not, in fact, a threat. But the giant orange letters remained until finally, frustrated by the ugliness of orange paint in my woods, I wire brushed them as clean as I could.

In the early days, B.P. sprayed herbicides along their lines. First, until public sentiment was outraged, they did this by helicopter. The smell lingered on for days. Then, after this was prevented, they drove along the lines in trucks with huge tanks. On my property, they took water for their herbicide mixture from Olsen Creek. One night they parked their tank-truck along the creek itself. It was disheartening when I arrived in the morning to find it sitting there with the herbicide mixture dripping steadily into Olsen Creek.

After herbicides were forbidden, no maintenance in the form of brush-cutting was ever done on my property, effectively making it impossible for me. Berry bushes took over where forest had grown. At one point in the mid 1970s I planted some apple trees under the lines in a few locations, in an attempt to make at least some use of my land. But a Bonneville cat razed over them. Compensation was simply for the price of the small trees, with no compensation for the time & care put into them. The Christmas trees I planted were cut mostly cut by overzealous workers, probably contracted by B.P. without knowing a landowner was allowed to plant Christmas trees. At about this point I gave up trying to use the part of my land crossed by power lines. Although I own it legally, ~~occupation of~~ it is occupied by B. P.

(5)

I would be best if they owned it outright because none of the parts crossed by the B.P. corridor are of any use to me. The corridor is a liability, from my standpoint. I do not feel comfortable anywhere ~~under~~ under these high tension cables. The zapping noise alone would be enough to drive me away, but the possible danger to my health is the final argument, or the largest reason (along with visual ugliness) why I stay away from those acres of my property that essentially belong to B.P., even if I pay taxes on them.

For me, the greatest heartbreaker was in 1983 when, while I was away, B.P. cut over 20 large firs & cedars, most of which constituted a ~~grove~~ very healthy grove that grew on a ridge in front of their a B.P. tower. None of the trees threatened the tower, & many had been topped so ~~that~~ they could not get within 50 feet of the conductor. I had personally skinnied up each of them & cut them off from time to time, after B.P. had originally topped them. I think there were 26 in all, ranging in diameter from 12" to about 24" in diameter at their bases. They were nice trees & helped hide the tower structure from view. When I returned after a trip, ~~with~~ they were all on the ground, a huge scattered heap of dead trees. B. P. officials ~~apologized~~ apologized. In essence, they explained that they hadn't realized the trees had recently been topped. They yarded the logs out to the road for me, but that was my total compensation for wrecking this grove.

In the early 1970s, I was compensated about $3000 for the last line built. Then, as today, I could care less about that minimal compensation for making much of my land unusable to me, while making the rest

of it a less than ideal place to be, in consequence of constant static from the middle line & the ever present ugliness of the power lines themselves. (1)

Even if adjusted, for inflation, to make the original $3000 into $9000 in today's value, I would happily return B.P.'s money if they would remove their line. Certainly its presence makes my land value drop much more than $9000 in the real estate market. But the "real" in real estate is not something B.P. wants to confront. The real American public is not interested in land under power lines, especially land that is not maintained by brush cutting & other necessary attention, such as cleaning up land after use.

If we conceive of the landowner – B.P. arrangement as a host-guest relationship, B.P. is not a good guest, according to my personal estimation. Contractors who pass through invariably leave their sandwich wrappers & pop cans along the stream bank. They drive through the stream, which is illegal, &, when gates get broken, they have to be told again & again before they get fixed. This is an exploitive relationship in which an insensitive guest exploits an unwilling host. I would gladly end it & have them move right out of the space they have occupied by means of eminent domain. Property is considered the sacred or protected domain of the landowner, according to our constitution. I would like to have my property, or the use of my property, back, so that I could feel it was mine again.

David Davis

2310 King St., 98225
(206) 731 0900

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-2-75
RECEIPT DATE: 1/13/94
AREA: DISTRICT

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

January 3, 1994

Public Involvement Office - ALP
Bonneville Power Administration
P.O. Box 12999
Portland, OR 97212

Gentlemen:

We are writing this letter in response to the options for the BPA/ Puget Power Northwest Washington Transmission Project. We have the following comments on your draft EIS proposal. Our comments pertain to section "E" of the project as depicted on figure 23 of the Draft Environmental Impact Statement.

1. Of the choices offered, We prefer none although, Option 1, as specified in your August 1993 "Fact Sheet No. 7", could be made acceptable if it were to be located on the other side of the easement in Section "E" to further minimize the EMF & visual impact on residents.

2. Of the choices offered, we do not like any. We live in one of the most beautiful and environmentally sensitive areas of Whatcom County. Naturally, we are intensely concerned that additional/larger transmission line structures along the corridor will have a negative scenic and environmental impact on our area. We do not feel that you have fully explored other options that would mitigate the impact to the residents along section E. Of paramount concern is the fact that your proposals are designed to increase power transmission yet you are intent on locating the new lines in close proximity to existing residences. The families of these residences will be subjected to increased health risks when the lines are operated at their maximum current capacity. At the very least, you need to explore locating the new lines on the back side of your easement which is farther away from residences. Many families along this sensitive section of the corridor have young children whom, studies suggest, are more susceptible to EMF induced health risks than adults.

Comment Letters

FAIR
Families Against Increased Risks
1333 Lincoln Street #246
Bellingham, WA 98226

3. You could improve all of the choices by:

(1). Moving the new line well away from the residences, particularly in section E where the lines run close to homes. In particular, consider relocating the new line to the other side of the easement or rerouting the easement through undeveloped lands(mostly DNR lands) well beyond any residences.

(2). Performing EMF monitoring at the easement boundary to generate legal baseline exposure data so that residents may be able to determine whether their EMF exposure has been increased once any new lines have been added(with the attendant health risks). Property buyout offers/compensation must be offered in the event of increased EMF's over the baseline data.

4. We think the analysis would be better if you:

(1). Discuss in greater detail the plans for maintaining the water quality(i.e. streams & creeks that feed lake Whatcom). This is of particular concern in view of the fact that many families along Lake Whatcom pull their drinking water directly from the lake. Additionally, as you know, Lake Whatcom is the drinking water source for approx. half of the county.

(2). These proposals increase your power transmission capacity. The EIS should specify the maximum current load that the new lines are capable of carrying and make an EMF comparison between this "line limit" case and the today's loadings. In addition, we believe that a mechanism should be included in your EIS that specifies how families will be informed when current loading is increased beyond what is outlined in your three options.

(3). A more thorough analysis of Whatcom county's power requirements should be made in light of the start-up of new cogeneration power plants in both Whatcom & Skagit counties. These new "cogen" plants would appear to alleviate the local need for increased power transmission capecity. More detailed comment on why this proposal has significant value to local residents should be made in the EIS.

FAIR
Families Against Increased Risks
1333 Lincoln Street #246
Bellingham, WA 98226

5. We also have these comments:

(1). The Bellingham School District has plans to build a new high school in the Dewey Road area. We would like to know how this project will affect those plans. Has the School District been contacted regarding your proposal? Include their plans in your EIS.

(2). The families in section "E" have formed a group, F.A.I.R.(Families Against Increased Risks), which is opposed to your proposals in their current form. Unless our concerns are addressed, you can expect increased public, political, and legal opposition to this project as well as increased media scrutiny.

Respectfully,

Kate Eifrig

Martin Eifrig
2726 North Shore Rd.
Bellingham, WA 98226
(206)671-7246

Comment Letters

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

To all concerned

This is our second letter addressing the BPA project concerning the power line construction in which part will be going down St. Clair Street in Bellingham, Wash.

We do appreciate you sending Steve Seiler to talk with me and try to clarify the purpose of the line and the power that it will carry in the lines. We do understand that there is no conclusive proof of EMFs and their effects on health but there is also no conclusive proof that it doesn't. When we are dealing with the lives of children we feel those risks aren't worth taking.

We strongly oppose a power line carrying stronger currents running down St. Clair Street. There are many young children in our neighborhood not to mention the presence of my Day care and my own 4 year old daughter. The quality of their lives should come first.

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

Teri MacDonald
Little Creatures Day Care

1. Jon: Teri MacDonald
Quinn 4 yrs old
3020 St. Clair Bellingham 98226

2. [illegible]
[illegible] 3 yrs old
[illegible] 1½ yrs old

3. Jane Blume — Alison 3½
2630 Vining Pl. — Cameron 8
Bellingham, WA 98226

4. Carol [illegible] — Seth 3
3660 Haggin St — Mackenzie 4 mo
Bellingham WA 98226

5. Cynthia Ahren — Caitlin 2½
3022 St Clair St
Bhm

Comment Letters

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

(6) Stephanie McCabe ... Sydney McCabe 9
601 Sudden Valley B-ham WA 98226

(7) Cheryl Macpherson — Scott: Age 4
3223 Eagleridge Way
Bellingham, WA 98226

(8) Adam Thomsen — Justin Thomsen 2
2818 Humboldt St.
Bellingham WA 98225

(9) Charlotte Hart — Shelby 2 1/2
822 Larson Rd
Bellingham, WA 98226

(10) [illegible] — Mejia: 5
1517 Fairview St.
Bellingham WA 98226

(11) Debbie [illegible] — Kayla (1), Brianna (4), Timothy (8), Mariah (11), Dustin (13), Deidre (15)
2604 St Clair
Bellingham 98226

(12) Robin Bernier — Ryan 4
3100 1/2 St. Clair
Bellingham WA 98226

(13) Steve Cochrane
3024 St. Clair
B-ham WA 98226

14. Traci Simpson — Tiffanee 11, Sean 9 — Jordan 9m, Kylee 6m
3018 St. Clair
Bham, WA. 98226

15. Michelle McCandless-Cappell
3010 St. Clair
Bham, WA. 98226

16.

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

copys sent to

BPA Headquarters
905 NE. 11st P.O. Box 3621
Portland, Or 97208

Puget Sound Area Office
201 Queene Anne Ave. N. Suite 400
Seattle, WA 98109-1030

Bonneville Power Administration
Attn: Bob Eddy
1333 King Street
Bellingham, WA 98225

Jerry Nixon
Deputy SEPA Official
Division of Buildings and Code
284-D Kellogg Rd.
Bellingham, WA 98226

Comment Letters

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

PUBLIC INVOLVEMENT
LOG #: NWTP
RECEIPT DATE: 1/13/9
AREA:

December 29, 1993

The following is a summary of Bonneville Power Administration's inability pertaining to proper maintenance and repair of their access road along the power transmission line corridor.

An area of B. P. A. 's transmission corridor is adjacent to the north side of my property. A maintenance/access road runs along this corridor crossing numerous seasonal creeks, drainages, etc. which run into nearby Lake Whatcom. After crossing the access road, one of these creeks runs along my western property line until reaching North Shore Road. It is then forced to make a 90 degree turn to the east and run approximately 200 feet where it joins another creek, then both run through a culvert under North Shore Road and into Lake Whatcom.

Beginning in the fall of 1988, during a period of typical heavy rainfall, the culvert was too small to handle the creek volume. Water backed up behind the culvert resulting in partial roadbank erosion sliding into the creek. This debris continued downstream until encountering the 90 degree turn. Rock, mud, gravel and subsequent water filled the ditch, spilling out onto the roadway with all this material flowing directly across North Shore Road, whereas it then flooded onto my waterfront property and spilled into Lake Whatcom. The County Road Department had to come out and clear the road and drainage ditches. I, myself, had to hand shovel the 60 to 70 wheelbarrel loads of mud and gravel off my lawn. After notifying B. P. A. of the occurrence and the erosion problem at the culvert road bank, no action was taken by B. P. A.

Throughout the fall and winters of 1988 and 1989 during higher runoff volumes, additional roadbank material continued to sluff off into this creek causing the similar problems to a lesser degree. Again B .P. A. was informed of this occurrence and again no action was taken on the part.

In the fall of 1990 during yet another period of heavy rains the whole road, including the culvert, washed completely out once again sending a large amount debris downstream, blocking North Shore Road. And once again it spilled onto my waterfront property and into the lake. Again the county had to come out and clear the road and drainage ditches and again I had to hand shovel this mess off my lawn.

As always B. P. A. was notified. Finally, in the summer of 1991 B. P. A. came out and put in a new culvert. To my astonishment, they put in the exact same size as the one that washed out! Also, the old culvert was left lying on the ground adjacent to my property line. I called B. P. A. and told them that the new culvert was entirely too small for heavy winter runoff, but no further action on Bonneville's part was taken at that time.

In the winter of 1992 I attended the scoping meeting which took place at Blodel Donovan Park concerning input for the Environmental Impact Study on Bonneville's proposed Transmission line expansion. I stood up and voiced my concerns including the culvert washout problems. Now that this was made public and down on record, B. P. A. contacted me personally within a week and in the summer of 1992 the newer culvert was dug up and replaced with a somewhat larger one. The old culverts were then taken away.

I still have some concerns pertaining to the roadbank. Around the new culvert it was bermed with the roundish Nooksack Riverbed rock which slides very easily and is not the proper type rock to hold up a steep bank for erosion prevention, though it is inexpensive. And what about all the hundreds of other culverts throughout the corridor? If the expansion project goes through as planned, major road work is going to occur along the corridor.

Bonneville's track record makes me very skeptical that any of this will be handled properly. The road work is scheduled to take place during the summer months. I have never seen anyone from B. P. A. come out here during heavy winter rain runoffs and properly access the situation. I've been informed that culvert size should be at least three times the size of what's in place now. Proper type berm rock for the road banks should also be used.

Given Bonneville's track record, from others as well, I have grave concerns over their transmission powerline expansion project.

Todd Crossman
2958 North Shore Road
Bellingham, WA 98226
(206) 671-2225

Comment Letters

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
Communicable Disease Epidemiology
1610 N.E. 150th Street • Seattle, Washington 98155-9701

FAIR
Families Against Increased
1333 Lincoln Street, #2
Bellingham, WA 9822

December 30, 1993

TO: Dr. Juliet Van Eenwyk

FROM: Patti Waller

SUBJECT: Draft Environmental Impact Statement, Bonneville Power Administration (BPA)/Puget Power & Light Northwest Washington Transmission Project

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As per your request on December 1, I have reviewed the Draft Environmental Impact Statement (DEIS) prepared by Bonneville Power Administration (BPA) and Whatcom County dated November 1993. The DEIS describes a proposal put forth by the BPA and Puget Sound Power & Light (Puget Power) to upgrade an existing high-voltage transmission system in the Whatcom and Skagit county area.

I am commenting solely on the impact the proposed activity would have on exposure to electric and magnetic fields (EMF). I do not feel that I can evaluate what is written about other issues such as land use, property values and soil erosion. Presumably other state and local agencies are reviewing those portions of the DEIS. My evaluation of the EMF impact for the various components of the DEIS follows.

The Bonneville Power Administration proposes to rebuild its existing single-circuit, wood-pole H-frame 230-kV transmission line between its Custer Substation and Puget Power's Sedro Woolley Substation, a distance of about 38 miles. The DEIS describes three design alternatives and estimates the number of homes that will experience an increase in EMF levels relative to what EMF levels will be at the homes in the year 2000 if no construction takes place.

BPA Option 1 - It is estimated that magnetic fields at 49 homes will increase by more than 1 milligauss (mG). Levels at approximately fifty percent of these homes (25) will increase by more than 2 mG with an increase of greater than 6 mG at one home.

BPA Option 2 - It is estimated that magnetic fields at 50 homes will increase by more than 1 (mG). Levels at approximately fifty percent of these homes (24) will increase by more than 2 mG with an increase of greater than 6 mG at one home.

BPA Option 3 - It is estimated that magnetic fields at 3 homes will increase by more than 1 mG. Levels at two of the three homes will increase by more than 2 mG with a maximum increase 3 mG at both homes.

Puget Power proposes to replace poles, conductors and insulators of an existing 115-kV transmission line between the BPA Bellingham substation and the Puget Power Bellingham substation, a distance of 4.3 miles. The line would still be energized at 115-kV.

Puget Power proposes two options for the 115-kV rebuild. The first follows the existing 115-kV transmission line location; the second alternative, the "pipeline alternative" deviates from the current line location for the first 1 mile.

Puget Power Option 1 - Ninety-three homes and 5 businesses would experience magnetic field level increases between 1 mG to 3 mG.

Puget Power Pipeline Alternative - Eighty homes and 5 businesses would experience magnetic field level increases between 1 mG to 3 mG.

In addition, Puget Power proposes to loop its existing Bellingham-Kendall line into the BPA Bellingham substation which would mean new construction of two sections (a total of 1.3 miles) of 115-kV line. None of the four loop line alternatives are estimated to produce magnetic fields at levels signficantly above existing magnetic field levels.

Comments

In the "Electromagnetic Fields - Information Sheet" (attached) written and appfoved by staff at the DOH, the State Energy Office and the Utilities and Transportation Commission in March 1991, we say that we recognize that exposure to EMF is an issue of concern. In my opinion, results of studies reported after the information sheet was prepared, especially the London study[1] and Swedish study[2], lend support to this belief. However, a number of challenges and questions to the research persists, such as weaknesses in exposure assessment and the lack of biological plausibility. Thus, I do not think one can say definitely what is or is not a "safe" level of exposure. Until something more definitive is known, I believe that all we can recommend is that utility companies develop strategies that reduce exposure, or limit increases in exposure, to the consuming public.

Comment Letters

Much of the proposed activity follows existing powerline corridors. BPA Option 3 results in the fewest number of houses experiencing an increase in magnetic field exposure. For that reason if EMF were the sole consideration in selecting design options, BPA Option 3 would be the option of choice. In regards to the proposed Puget Power changes, the option of choice based solely on EMF consideration would be the "pipeline alternative." However, I understand that in the final selection of options, many factors must be considered.

If you have any questions, please call me at 361-2836.

(1) London SJ, Thomas DC, Bowman DJD et al. Exposure to residential electric and magnetic fields and risk of childhood leukemia. AJE. 1991; 134:923-937.

(2) Feychting M, Ahlbom A. Magnetic fields and cancer in children residing near Swedish high-voltage power lines. AJE. 1993; 138:467-481.

cc: John Kobayashi, Acting Chief of Epidemiology

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
Communicable Disease Epidemiology
1610 N.E. 150th Street • Seattle, Washington 98155-9701

December 30, 1993

Mr. Craig Langager
2970 North Shore Road
Bellingham, Washington 98226

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

Dear Mr. Langager:

This letter is in response to your telephone call on December 22 regarding Department of Health (DOH) review of the Draft Environmental Impact Statement (DEIS) of the Bonneville Power Administration (BPA)/Puget Power & Light (Puget Power) Northwest Washington Transmission Project. I maintain the state clearinghouse of information on electromagnetic fields (EMF) and health effects for the Department. An important part of that activity is to stay current on the epidemiologic research regarding this issue. Consequently, I am frequently asked to provide technical expertise on matters related to possible health effects associated with exposure to EMF.

I am attaching a copy of the comments I have sent to Dr. Juliet Van Eenwyk, an epidemiologist in the Environmental Health section. Dr. Van Eenwyk had asked me to review the EMF portion of the DEIS. My comments are confined to my evaluation of the options presented in terms of the EMF impact on the population. Specific recommendations about system engineering other than to encourage utilities to utilize line configurations that minimize exposure to EMF, are outside the realm of my expertise.

While the DOH believes that exposure to EMF is an issue of concern, it has no regulatory authority in regards to the siting of powerlines. Also, the state has no electric and magnetic field standards at this time. If you feel Washington State should assume a more active role on this issue, I encourage you to contact your legislators.

Sincerely,

Patti Waller

Patti Waller, M.S.
Epidemiologist

cc: John Kobayashi, M.D. M.P.H.
Juliet Van Eenwyk, Ph.D.
Bobbie Berkowitz, Ph.D.

Comment Letters

FAIR
Families Against Increased Risks
1333 Lincoln Street, #246
Bellingham, WA 98226

December 29, 1993

John Thielemann
State of Washington
Department of Health, Northwest Drinking Water
1511 Third Avenue, Suite 719
Seattle, Washington 98101-1632

Dear Mr. Thielemann:

We are writing this letter after a telephone conversation one member of our group had with you on Wednesday, December 23rd. We are a group of concerned families who live in Section E of Bonneville Power Administration's new proposed power lines. Section E is the area that runs along the shoreline of Lake Whatcom, Bellingham's municipal water supply.

We have concerns due to BPA's lack of study in this environmentally sensitive area. This area is known for its unstable slopes and heavy run-off from Stewart Mountain into the east side of the lake. Several homes were washed out into the lake in 1983 and we had severe erosion and sedimentation problems during the storms of November 1989 and 1990. Some of this erosion and sedimentation was caused by BPA's' lack of suitable construction techniques when placing culverts and when building the road under the existing power line corridor. In their proposal to upgrade the power lines by installing new lattice steel towers and by building a new road, our anxiety centers around the fact that BPA has not monitored this water run-off and soil de-stabilization. There are no specific facts or documentation in the EIS draft on these sensitive existing conditions.

To defend our lake water along with our wells and septics we feel that: (1) your office should demand that BPA monitor the run-off in peak winter months (historically November) to determine proper procedures for road building; (2) your office should continue to examine this situation so that protective measures are taken during and after construction. We citizens who drink Northwest water would hope that BPA's proposed project would be delayed until this accurate field work is done.

Sincerely,

10 January 1994

RECEIPT DATE
1/14/94
AREA: DISTRICT

Bonneville Power Administration
Public Involvement Office
P. O. Box 3621
Portland, Oregon 97208

Reference: BPA/Puget Power Northwest Washington Transmission Project

My wife and I own 20 acres in Section 30, Township 38 North, Range 4 East, with our northeast corner on the southern border of the BPA power line corridor. We first purchased our property in 1968, were fully aware of the corridor's existence, and anticipated its maintenance requirements and an eventual need for expansion. We are not opposed to the proposed Northwest Washington Transmission Project.

We are aware of efforts being made by some of our neighbors along North Shore Road in the Lake Whatcom watershed to oppose the project. We disagree with their reasons. The corridor predated the arrival of all these people who were knowledgable of the corridor's existence and purpose.

Objection to the visual effect of taller towers is both unreasonable and unmeasurable. Nothing in the Lake Whatcom Subarea zoning regulations prohibits an increase in voltage nor tower size. Some of our neighbors use this argument to oppose anything they dislike.

The hum emanating from the power lines has always existed and can be expected to continue. If property owners accepted the noise and located their homes immediately adjacent, they can hardly complain about an increase if one should measurably occur.

Equally, an increased noise level would not lower property values any more than the existing noise prevented neighbors from building their homes where they could hear the existing hum in the first place.

The concerns about health being affected by EMF are the same concerns that people have about all sorts of imagined dangers that cannot be disproved but also cannot be proved. Many of our neighbors are hypocritically using this argument.

A final argument that the purpose of increasing power transmission capability here is to provide power elsewhere, rather than this immediate area, is terribly short sighted. It fails to recognize that we are the ultimate beneficiaries of a

Comment Letters

power grid that permits power transmission in all directions which will become ever more important as this area also increases in population.

We think our neighbors who oppose the project do so, not so much out of ignorance, but for small minded, short term, self serving purposes. They truly represent the "me" generation. Instead of being given an audience, they should be taken out to the woodshed.

Robert W. Moore

Elizabeth A. Moore

2694 North Shore Road
Bellingham, WA 98226
(206) 733-1276

PUGET POWER

January 13, 1994

Bonneville Power Administration
Public Involvement Office-ALP
P.O. Box 3621
Portland, OR 97208

NWTP-2-84
1/14/94
AREA:

Mr. Roland Middleton
Deputy SEPA Official
Whatcom County Planning and
Development Services
5280 Northwest Road
Bellingham, WA 98226

Re: Comments On Draft Environmental Impact Statement BPA/Puget Power Northwest Washington Transmission Project

Puget Sound Power & Light Company ("Puget Power") offers comment on the Draft Environmental Impact Statement for the Bonneville Power Administration ("BPA")/Puget Power Northwest Washington Transmission Project (the "DEIS"). Our comments are comprised of this letter, attached excerpts from the DEIS and the attached letter from Dr. William H. Bailey to John Campion, dated January 11, 1994.

A. DEIS Chapter 1 (Purpose & Need)

1. **Deficiencies in Existing Transmission System.** This project is needed to eliminate deficiencies in BPA's and Puget Power's existing transmission systems. The DEIS discusses inadequacies in transmission system reliability and capacity. These deficiencies were also the subject of extensive joint study by the utilities. In discussing these deficiencies in the context of the "local system" Puget Power understands the "local system" referenced in the DEIS to include BPA's 230 kV electrical systems in Whatcom and Skagit counties.

2. **Existing Transfer Capacity.** There are references throughout the DEIS to the existing transfer capacity of the Northern Intertie, stated in most cases as 2,000 MW rated transfer capacity ("RTC") westside, north to south. The DEIS also states that the single contingency rating ("SCR") of the Northern Intertie is 230 MW on the westside, north to south. This discussion of existing transfer capacity in terms of the

Puget Sound Power & Light Company P.O. Box 97034 Bellevue, WA 98009-9734 (206) 454-6363

SCR is important. It underscores the need to improve *existing* firm transfer capacity on the Northern Intertie (i.e., to increase the 230 MW single contingency rating of the existing system).

3. **Co-generation Facilities.** The DEIS discusses co-generation facilities recently located in Skagit and Whatcom counties. These facilities provide, as the DEIS observes, a resource of independent value to the region and the existence of this resource does not diminish the need for additional transmission capacity to be provided by this project. On the contrary, this additional generation will, in some cases, exacerbate existing transmission system capacity problems. Co-generation facilities add load to the local system which can result in system overloads under certain outage conditions. Moreover, generation added by these facilities does not diminish the need for firm and non-firm acquisitions of power from Canada. Puget Power must also provide electrical service to its customers when these resources are not available and therefore must make the improvements needed to increase the reliability of the transmission system.

4. **Washington State Energy Facilities Siting Evaluation Council ("EFSEC").** Puget Power questions the reference to EFSEC at page 1/12 of the DEIS. Is this a reference to a memorandum of understanding between BPA and EFSEC? Puget Power is not aware of any EFSEC jurisdiction over its portion of the project.

B. DEIS Chapter 2 (Alternatives)

1. **Intertie Use Alternatives.** The electrical system improvements jointly proposed by Puget Power and BPA are clearly articulated in the DEIS. BPA and Puget Power are proposing to upgrade their respective transmission systems in Whatcom and Skagit counties. The objective of the action is to address reliability and capacity needs for both BPA's and Puget Power's transmission systems. Both utilities would have responsibilities in implementing this objective.

However, the DEIS discusses use "alternatives" reserving, in one case, "the entire estimated 850 MW increase of transfer capacity exclusively for BPA use," and in another case, reserving the increased transmission capacity to an unspecified consortium of nonfederal users. These may be

appropriate goals in some other context. They are not, however, alternative means of achieving the proposal under environmental review. As such, they are not "alternatives" for purposes of NEPA and add nothing to the analysis of the document.

Under NEPA, the goal of the action in question limits the universe of alternatives to be considered. Citizens Against Burlington v. Busey 938 F.2d 190, 195 (D.C. Cir.), cert. denied, 112 S.Ct. 616 (1991). It is not an alternative, reasonable or otherwise, to assess a course of action that achieves a goal *other than* the agency's proposed goal. Moreover, agencies should not use the alternatives section of an EIS to "engage in the empty exercise of generating and 'considering' countless alternatives, even alternatives known to be unacceptable at the outset." Idaho Conservation League v. Mumma, 956 F.2d 1508, 1522 (9th Cir. 1992) (citations omitted).[1] The "use alternatives" included in the DEIS are clearly "unacceptable at the outset" because they do not achieve, or even approximate, the proposed action's clear objective. The DEIS otherwise assesses a more than ample range of reasonable alternatives. Accordingly, Puget Power suggests that the discussion of use alternatives be eliminated or revised for relevancy to the stated goal proposed for environmental analysis.

2. **No-Action Alternative.** Puget Power also suggests modification of the discussion of the no-action alternative. The discussion of the no-action alternative implies that Puget Power would not improve its transmission system if this project does not go forward. This is not the case.

In this regard the Council on Environmental Quality provides guidance:

[1]Not only are the "use alternatives" unrelated to the stated proposal, the consequences of the "use alternatives" would appear to be financial consequences to the utilities which share (or do not share) in the benefits of the proposed action. A comparative analysis of who gets the financial benefits is irrelevant to the environmental consequences of the proposed action.

> Where a choice of "no-action" by the agency would result in predictable actions by others, this consequence of the no-action alternative should be included in the analysis.

Council on Environmental Quality, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 Fed. Reg. 18,026 (1981) (Response to Question 3).

As a public service corporation, Puget Power has a duty under state law to "furnish to all persons and corporations who may apply therefore and be reasonably entitled thereto, suitable facilities for furnishing and to furnish all available electricity . . . as demanded." RCW 80.28.110. In order to fulfill obligations to its customers, Puget Power will improve its transmission system in Whatcom and Skagit counties as necessary to address the deficiencies identified and discussed in the DEIS.

3. **Whatcom County Initiative.** Some alternatives were characterized in the DEIS as being "unreasonable" because they were determined to be inconsistent with Whatcom County's current zoning code. Puget Power does not take issue with the decision to exclude these alternatives from detailed analysis; NEPA requires only a reasonable--not an endless--range of alternatives to be so assessed. However, the conclusion that these alternatives are "unreasonable" may reflect a misunderstanding of the zoning code. In order to construct 230 kV facilities in portions of Whatcom County, Puget Power theoretically could apply to have such areas rezoned as suitable for industrial development. Alternatively, appropriate utility corridors could be designated under soon-to-be-adopted comprehensive plans, with appropriate implementing development regulations. Clearly, Puget Power is not proposing any such actions in the context of the project in question. But the mere fact that such actions are not proposed does not render them infeasible, nor does it render alternatives dependent upon such actions "unreasonable" for purposes of NEPA.

C. **DEIS Chapter 3 (Affected Environment)**

1. **Growth Management Act.** The DEIS should be updated to address efforts underway by local jurisdictions to comply

with the Growth Management Act ("GMA"). Puget Power has submitted detailed plans to each jurisdiction planning under the GMA which reflect its proposed improvements. These submittals will assist local jurisdictions in formulating "utilities elements" for their comprehensive plans which must, as a matter of law, designate the general location of existing and proposed utility facilities. By submitting these plans, Puget Power has ensured the consistency of its portion of this project with new comprehensive plans and development regulations. The consistency of BPA's proposed improvements with new GMA plans is not discussed in the document.

2. **Whatcom County Critical Areas Ordinance.** In November of 1993, the voters of Whatcom County amended and repealed portions of the Whatcom County Critical Areas Ordinance ("CAO"). References in the DEIS to portions of the CAO that are no longer in effect should be deleted.

D. **DEIS Chapter 4 (Environmental Consequences)**

1. **Air Quality.** The DEIS understates a significant environmental benefit of this project. Improved access to Canadian hydropower reduces reliance on energy produced from fossil fuels. In President Clinton's "Climate Change Action Plan" (October 1993), the President encourages utilities to reduce greenhouse gases by a variety of measures. These include increasing the efficiency of transmission and making better use of available hydroelectric resources. The merits of the project, in this regard, should be discussed in the DEIS.

2. **Social and Economic Consequences.** The DEIS fails to address important benefits provided by this project in its discussion of social and economic consequences. The project will increase the reliability of the local electric system. As a consequence, it is anticipated that there will be fewer (and shorter) interruptions of service. The DEIS should quantify this benefit. Moreover, improving access to existing generation (e.g., Canadian hydropower) will facilitate Puget Power's ability to purchase power at a reasonable cost. Keeping power costs low is a benefit to our ratepayers, particularly to those of moderate means or on fixed incomes. This benefit should be discussed in the DEIS.

3. **Perceived Impacts.** The DEIS appears, in places, to distinguish between impacts that are empirically demonstrable and impacts based solely upon public perception. Although Puget Power would certainly agree that public perception is important, it is also important that the public be presented with accurate information, so that perceptions are well informed and factually based. When perceptions are addressed, the DEIS should make it clear that notwithstanding a consideration of perceptions the identification and quantification of impacts is ultimately a question of fact.

4. **Property Values.** The discussion of impacts on property values appears to be a discussion of perception, not fact.[2] Apart from any specific influences of this project, it is generally recognized that the availability of electricity to real property enhances its value. This can be seen by comparing the market value of real property served by utilities to the market value of real property that is not served by utilities. Further, when a utility acquires real property for utility facility development, it occasionally must acquire private property rights. When it does so, it pays fair market value for the property acquired.[3]

There have been studies performed around the nation which examine the nature and extent of property value impacts associated with siting electrical facilities. These studies show that there are many factors that affect property values. In most cases, it is not meaningful to only address a single factor, such as proximity to electrical facilities, in determining the value of a particular piece of property. On the other hand, it typically is meaningful to consider all factors influencing property values in a particular area, such

[2]SEPA does not require a discussion of impacts on property values in an EIS. SEAPC v. Cammack II Orchards, 49 Wn. App. 609, 616 (1987) ("adverse impacts on surrounding property values are more related to 'profits and personal income and wages' expressly exempted from the EIS discussion by WAC 197-11-448(3)").

[3]The law does not require, nor does Puget Power pay, compensation to private property owners in the general vicinity of electrical facilities. In this respect, Puget Power is no different than any other public or private provider of utilities or infrastructure.

as the location of the property, its relationship to other amenities, views and other attributes.

For this project, Puget Power is proposing to rebuild existing lines and to build a new line within an existing utility corridor. To the extent the presence of utility facilities is a factor affecting property values in these areas, it is a factor that is already present and has been for many years. The project will not change the nature and extent of these facilities, and it is therefore unlikely that there will be any change to surrounding property values.

5. **Electric and Magnetic Fields ("EMFs").** Similarly, the DEIS's discussion of EMFs should focus on fact, not perception. In this regard, Puget Power is guided by the consensus of the scientific community as reflected in statements published by the Environmental Protection Agency ("EPA") and other credible bodies. In this regard, the EPA states:

> The bottom line is that there is no established cause and effect relationship between EMF exposure and cancer or other disease. For this reason, we can't define a hazardous level of EMF exposure.

Environmental Protection Agency, "Questions And Answers About Electric And Magnetic Fields (EMFs)," at page 3 (December 1992). Puget Power's comments on EMFs are further elaborated in the attached letter to John Campion from Dr. William H. Bailey.

6. **Quantification of Impact.** The environmental impact statement under preparation will, when finalized, serve as a basis for Whatcom County to exercise substantive SEPA authority.[4] In this regard, Puget Power notes that no

[4]RCW 43.21C.060 states, inter alia, that mitigation measures shall be related to specific adverse environmental impacts clearly identified in an environmental document on the proposal. See Levine v. Jefferson County, 116 W.2d 575 (1991) (governmental action under SEPA may be conditioned or denied only on the basis of specific, proven significant impacts.) And for purposes of SEPA, the scope of an EIS should be limited to "probable

Comment Letters

significant impacts are identified in the DEIS with respect to matters of Land Use, Vegetation (other than wetland vegetation), Fish and Wildlife, Agriculture, Visual Resources, Recreation, Cultural Resources, Noise/RFI, Social and Economic considerations and matters of Health and Safety. The DEIS does identify some impacts to Soils, Wetland Vegetation, Wetlands, and Housing. However, the DEIS (and the Environmental Report submitted by Puget Power to BPA and Whatcom County) identify appropriate measures to fully mitigate these impacts. Highlighted portions of the Environmental Report which describe these mitigation measures are attached. Tabular summaries of impacts contained in the DEIS have also been revised and attached to correspond with the discussion of impacts and criteria in the DEIS.

Very truly yours,

John C. Campion

John C. Campion

Attachments

---

significant adverse environmental impacts." WAC 197-11-408. The DEIS discusses a variety of impacts in the context of Puget Power's portion of the project which fall below the threshold of "probable significant adverse environmental impacts" and therefore would not support imposition of mitigation.

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January 11, 1994

Mr. John Campion
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Re: Draft Environmental Impact Statement (DEIS)
BPA/Puget Power Northwest Washington Transmission Project

Dear Mr. Campion:

You requested that I provide review and comment on the DEIS prepared by the Bonneville Power Administration (BPA) and Whatcom County. I have organized my comments as follows: Section I. General Methodological Comments; and Section II. Detailed Comments.

SECTION I. COMMENTS ON GENERAL METHODOLOGY

Criteria for EMF Impact Assessment

For most issues addressed in the DEIS such as air, water, etc. the assessment of possible impacts and distinctions between adverse and insignificant impacts is guided by Federal and Washington state regulations (i.e., CEQ AND BPA regulations implementing NEPA; Chapter 197-11 WAC implementing SEPA). The DEIS references these regulations in **Section 4. F. Consultation, Review, and Permit Requirements.** As regards EMF, the DEIS correctly notes that there are no federal standards or Washington state standards or guidelines (p. 4/149).

Internal guidelines for electric fields developed by BPA to guide design and siting of transmission lines are referenced in the DEIS (p. 4/149) as are BPA's 1992 "Interim Guidelines on Electric and Magnetic Fields" (Appendix C-4). Also, reference is made to regulations or guidelines developed in other states to limit emissions of electric fields or magnetic fields (p. 4/149). As to an assessment of health and safety impacts, these regulations and guidelines are not directly relevant because they have not been developed based upon scientific or health assessments to provide a distinction between safe or unsafe exposures.

However, to the extent that the public's concerns relate to potential health impacts of exposures to EMF from the addition of proposed transmission lines or modifications to existing lines, the DEIS must: a) accurately reflect the state of scientific knowledge relevant to such concerns; and b) assess the potential significance of exposures based upon health risk assessments made by scientific or regulatory agencies. In both respects the DEIS can and should be significantly improved.

With regard to characterizing the state of scientific knowledge, it is important that the whole body of relevant data be addressed, not just a few selected studies. The importance of this principle becomes evident in assessing epidemiology studies which, because of their observational nature, are inherently susceptible to problems in exposure assessment, biases, and confounding factors. That is why judgements regarding studies of this type should not be drawn from individual studies as might be inferred from the discussion in the DEIS. Among the criteria used to evaluate epidemiology studies is the consistency of the association between exposure and a specific disease. An exclusive focus on epidemiological data is likewise inappropriate because the data from laboratory studies are obtained under controlled conditions that minimize such difficulties and therefore can be more definitive in drawing conclusions about cause-and-effect relationships. Hence, the assessment of the EMF literature must consider all the relevant data from these complementary approaches to reach valid conclusions.

The ideal approach to characterize both the state of scientific knowledge regarding epidemiologic and laboratory research on EMF and its potential health significance (and so meet the requirements of the DEIS) is to summarize the findings of comprehensive scientific reviews performed by multidisciplinary panels of scientists. Yet, while mention is made of some scientific reviews (p. 4/151), the DEIS makes no attempt to use the conclusions of these reviews or others performed for health agencies to either summarize or gauge potential impacts of EMF exposures.

There is no lack of such knowledgeable reviews; for example, in just 1992-1993 eleven scientific assessments of the EMF research literature were completed. Those performed by the Advisory Group to the National Radiological Protection Board of Great Britain, Expert Advisory Group on Non-Ionising Radiation to the Danish National Board of Health, Oak Ridge Associated Universities, and the EPA are particularly noteworthy for their breadth and depth of analysis. The conclusions of these reviews are summarized briefly below.

National Radiological Protection Board [Great Britain]

In 1992, the Advisory Group to the National Radiological Protection Board (NRPB) of Great Britain published their review of all the epidemiologic and laboratory studies relevant to a possible carcinogenic effect of electromagnetic fields and evaluated and interpreted these data. The Group is headed by the noted epidemiologist Sir Richard Doll, who is best known for his work in establishing that smoking causes lung cancer. The conclusion of the Advisory Group was:

> *In summary, the epidemiological findings that have been reviewed provide no firm evidence of the existence of a carcinogenic hazard from exposure of paternal gonads, the fetus, children, or adults to the extremely low frequency electromagnetic fields that might be associated with residence near major sources of electricity supply, the use of electrical appliances, or work in the electrical, electronic, and telecommunications industries . . . .*
>
> *In the absence of any unambiguous experimental evidence to suggest that exposure to these electromagnetic fields is likely to be carcinogenic,*

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[redacted]

in the broadest sense of the term, the findings to date can be regarded only as sufficient to justify formulating a hypothesis for testing by further investigation (p. 132).

After the publication of the NRPB report in 1992, epidemiologic studies from Sweden and Denmark were reported. The Advisory Group met again in March of 1993, to review these papers. An official statement issued after the meeting summarized their updated assessment of the literature:

They [the Swedish and Danish studies] do not establish that exposure to EMF is a cause of cancer, although they provide weak evidence to suggest the possibility exists. The risks, if any, however, would be very small.

The statement also noted:

. . . at present epidemiological studies do not provide an effective basis for quantitative restrictions on exposure to electromagnetic fields.

Oak Ridge Associated Universities Panel

The Committee on Interagency Radiation Research and Policy Coordination (CIRRPC) asked Oak Ridge Associated Universities (ORAU) to establish a panel and conduct an independent scientific review and evaluation of the potential health effects from exposure to electric and magnetic fields. The report was prepared by a panel of eleven scientists who evaluated about 1,000 scientific journal articles published within the last 15 years focusing on human epidemiology and cell studies as well as reproductive and behavioral effects (ORAU, 1992). They concluded:

This review indicates that there is no convincing evidence in the published literature to support the contention that exposures to extremely low-frequency electric and magnetic fields (ELF-EMF) generated by sources such as household appliances, video display terminals, and local power lines are demonstrable health hazards (p. ES-11).

After review of the Scandinavian epidemiological studies, the panel updated their assessment with the conclusion:

[redacted]

[I]n our opinion, the evidence presented in these studies is not sufficiently compelling to alter the conclusions of the ORAU report (ORAU, 1993).

Expert Group on Non-Ionising Radiation, Danish Ministry of Health

A review prepared of the Swedish (Feychting and Ahlbom, 1992) and Danish (Olsen et al, 1992) studies by an Expert Group on Non-Ionising Radiation for the Danish Ministry of Health concluded:

The opinion of the group is that both the Danish and the Swedish study support the hypothesis of previous studies that children living near high-current plants have an increased frequency of cancer, but the results do not exclude the possibility that the association might be due to chance. If the increased cancer risk is due to 50 Hz magnetic fields, the uncertainty in the evaluation of exposures to magnetic fields would indicate too weak a correlation and thus result in a possible under-estimation of potential risk.

The expert group believed that neither the earlier nor the latest studies offers sufficient documentation to characterize 50 Hz magnetic fields in homes adjacent to high-current electricity supply plants as a cancer-inducing factor among children. The studies described do not, however, allow this assumption to be dismissed.

The group, therefore, finds no scientific reason for establishing standards with respect to high-current plants. New research results must be followed closely in the future (p. 70).

U.S. Environmental Protection Agency

The most recent guidance from the United States Environmental Protection Agency ("EPA") is a document designed "to help EPA staff better understand and respond to questions from the public about electric and magnetic fields." EPA. Questions and Answers About Electric and Magnetic Fields (EMFs). U.S. Environmental Protection Agency, Radiation and Indoor Air Radiation Studies Division. December, 1992. Among the answers to commonly asked questions are statements that summarize the EPA's position. These include:

While the possibility of a public health concern has been raised in some epidemiological studies, we do not yet have enough information to say whether EMFs pose a health risk or not (p. 12).

The bottom line is that there is no established cause and effect relationship between EMF exposure and cancer or other disease. For this reason, we can't define a hazardous level of EMF exposure (p. 9).

In any event, the data on health effects from exposure to EMF is insufficient to establish responsible health-based standards (p. 21).

Given the availability of such comprehensive reviews performed by interdisciplinary panels of scientists, BPA and Whatcom County should look to these organizations, particularly to the EPA, for guidance in the interpretation of the scientific research.

It is generally regarded that the perspective provided by relevant scientific and government agencies should be followed in the DEIS process. As recommended in a standard reference work for the preparation of environmental impact statements:

> Task 5 Assessment of Potential Environmental Impacts. The potential impacts of each proposed project alternative are assessed . . . Identification is made of the potential short- and long-term impacts associated with the project . . . Long-term, post-construction impacts . . . are further characterized as 'avoidable,' 'unavoidable,' and 'capable of being mitigated.'
>
> In doing assessments, one should follow standards and utilize analytical procedures established and approved by EPA and other Federal agencies having applicable legal jurisdiction. [emphasis added] (J.L. Bregman and K.M. Mackenthun. Environmental Impact Statements. Chelsea, MI: Lewis Publishers, 1992. p. 32).

The relevant analytical procedures for performing health risk assessments are well-known and have been published for use by Federal agencies in performing assessments of both chemical and physical agents (e.g., National Academy of Sciences. Risk Assessment in the Federal Government: Managing the Process. Washington, D.C: National Academy Press, 1983; Environmental Protection Agency (EPA). Guidelines for Carcinogen Risk Assessment. Federal Register. 51: 3392-34003, 1986; EPA. Guidelines for Developmental Toxicity Risk Assessment. Federal Register. 56: 63798-63826, 1991). These procedures were not followed in the review of the EMF research summarized in Appendix C-1; however, it is not necessary that another comprehensive assessment of EMF research be prepared for this DEIS.

Given the availability of comprehensive reviews and assessments, including those offered by the EPA (a federal health agency), BPA and Whatcom County can and should rely upon health assessments of these organizations in determining the significance of exposures to EMF. This is appropriate given that neither of the agencies preparing the DEIS has attempted, nor has the capability to perform health risk assessments. In addition, the DEIS should discuss those guidelines provided by scientific advisory organizations that are explicitly based upon the review and assessment of biological and health research, e.g., NRPB (1993), IRPA/INIRC (1990), ACGIH (1992), and ICNIRP (1993). Hence, the emphasis in Appendix C-1 should be on describing some of the research studies in sufficient detail so that the conclusions and assessments of major scientific and regulatory bodies on EMF can be summarized and made understandable to the reader.

Comparisons of Alternatives based Upon EMF Exposure Assessment

The failure of the DEIS to properly take into account relevant health assessments of the EMF literature also is reflected in the method by which the DEIS compares potential impacts of EMF across project alternatives. Having stated that ". . . specific health risks or specific potential level of disease cannot be predicted in relation to EMF exposure." (p.2/30), the DEIS then states "[h]owever, exposure assessments of magnetic fields from transmission lines can be carried out in order to provide some comparison of alternatives . . ." and proposes to use "[t]he number of buildings expected to experience an increase in magnetic field levels of more than 1 mG (based on estimated annual average loading information) . . ." as the metric for comparison.[1] What the DEIS does not tell the reader, however, is that there is no scientific basis to use any

[1] The exposure assessment method proposed in the DEIS is not consistent with, or recommended by the EPA, for use in risk assessment as described in its Guidelines for Exposure Assessment (EPA, 1992).

particular level of exposure to compare potential impacts. As pointed out by the EPA, 1992:

> *We don't know if EMF exposure is harmful (aside from the concern for electric shocks and burns for extreme exposure). We don't know if certain levels of EMFs are safer or less safe than other levels (p. 3).*

Hence, although the DEIS contains the above caveat, the exposure assessment reported in the DEIS is inappropriate given the level of scientific knowledge concerning potential effects of exposures to EMF. The type and specificity of the comparisons made cannot help but to imply that exposures to magnetic fields above 1 mG are hazardous. Such unfounded implications may create public anxiety and confusion. More detailed characterizations that compare numbers of homes expected to differ in estimated annual average magnetic field levels in 1 mG increments from 1 to >6 mG are even more misleading. The problem is analogous to the problem of specifying the accuracy of measurement to the nearest 0.0001 of a unit, when the uncertainty in the units read by the measurement device itself is 10 units.

The approach used in the DEIS to assess potential impact of EMF is also inconsistent with the fundamental tenant of environmental impact assessment that ". . . impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . ." (NEPA 1508.7, 1986) be considered. The DEIS makes no estimate or determination of the existing range of ambient exposures to magnetic fields in homes and therefore fails to relate the projected incremental exposure from the proposed project relative to existing magnetic field exposures that occur under the no build scenario. The appropriate methodology was identified in the DEIS but only was partially implemented:

> An EMF *exposure assessment* is done by first estimating what future EMF levels would be without the new project. [Emphasis in original] (p. 4/151).

Magnetic field profiles were calculated for existing transmission line corridors and then compared to Options 1, 2 and 3. However, contributions to exposures from sources other than the existing transmission facilities were completely ignored. The incremental exposure to magnetic fields from transmission facilities may be less than existing background levels, and is not necessarily additive (or subtractive)[2] to the total exposure that members of the public receive from all existing sources (transmission lines, distribution lines, household wiring, appliances, stray currents on water pipes, cable and telephone installations) at home, work or school. One might assume that such background exposures are the same for individuals for existing and alternative Options and so can be disregarded. This is not appropriate because this approach fails to convey the point that for most of the public the incremental impact is but a fractional addition to their existing total exposure.

Hence, it is the failure of the method employed, not the goal to address EMF exposures that is of importance. The problem as noted by the EPA in its Guidelines for Exposure Assessment (EPA, 1992) is that:

> *It is a mistake to simply consider risk communication to be an add-on activity for either scientific or public affairs staffs; both elements should be involved. There are clear dangers if risk messages are formulated ad hoc by public relations personnel in isolation from available technical expertise; neither can they be prepared by risk analysts as a casual extension of their analytic duties (p. 22931).*

The DEIS could have compared the relative numbers of residences along each of the proposed alternatives to assess potential socioeconomic impacts, or used similar information to assess advantages of one route over another with respect to EMF in a global sense (of reducing potential exposures at no or low cost), and therefore public concerns about EMF. An exposure assessment at this level of analysis is appropriate and is not misleading. In contrast, the underlying basis for the exposure assessment performed in the DEIS is so weak that the entire attempt at quantitative comparisons between project alternatives at the level of single homes based upon magnetic field levels should be dropped.

[2] Since a magnetic field is a vector quantity with both a magnitude and direction, magnetic fields from different sources may add together to increase or decrease the magnetic field at a particular location. Hence, the magnetic field from a power line outside the home may add to, or reduce, the strength of magnetic fields within a home depending upon the direction and alignment of the fields.

SECTION II: SPECIFIC COMMENTS

p. 17/Summary Although the term EMF is not defined in the DEIS until p. 4/148, it is clear the acronym is used for both electric and magnetic fields as referred to on this page and in the BPA Interim Guidelines on Electric and Magnetic Fields (following p. C/11). This usage leads to logical inconsistencies in that the BPA Guidelines calls for EMF exposure, i.e. electric and magnetic field exposure to be addressed, but electric field exposures are not addressed in the literature review and exposure assessment of the DEIS.

p. 4/151 The "industry-accepted computer modeling techniques" probably refers to computer programs developed by BPA. These should be explicitly identified, referenced, and all the assumptions used in modeling specified.

p. C/1 The odds ratio for the London et al study is given as 2.15 without qualification or discussion. When the authors adjusted this crude odds ratio for other potential confounding exposures, the odds ratio dropped to 1.73 and was not statistically significant (London et al, 1991–p. 934).

p. C/1 The first four paragraphs summarize six studies of childhood cancer in relation to presumed exposures to magnetic fields from electrical utility facilities, but do not provide the findings of scientific reviews and assessments of these studies (see reviews previously cited). For example, the only comment that is referenced on the Swedish Studies is a press release that contains a statement as to how one agency may develop policies on EMF and the statement that ". . . a connection between cancer and magnetic fields has not yet been scientifically proven" (p. C/2). In fact, there are differences in the thinking of different Swedish government agencies on this issue, and none as yet have issued health-based policy recommendations.

p. C/2 It is extremely misleading to simply characterize the assessment of the EPA's Science Advisory Board (SAB) as having ". . . reached a similar conclusion" as the draft EPA report of 1990. The SAB concludest hat:

The manner in which [epidemiologic] studies are reviewed [in the Draft Report] is uneven . . . Discussion of findings includes too much unwarranted speculation about causal interpretation. Often such speculation appears unbalanced, giving emphasis to positive findings while de-emphasizing negative ones (p. 16).

The assessment offered in the research literature by the NIEMFS subcommittee itself was that:

Currently available information is insufficient to conclude that the electric and magnetic fields are carcinogenic. Some human epidemiologic data report an association between surrogates for electric and magnetic field exposure ['wiring configurations'] and an increased incidence of some types of cancer, but the conclusion of causality is currently inappropriate because of limited evidence of an exposure-response relationship and the lack of a clear understanding of biologic plausibility (p. 3).

From the perspective of these consensus reports of the scientific community, it would appear to be arbitrary to suggest that the "exposure assessment" contained in the DEIS in any sense identifies or quantifies risks or impacts to public health and safety.

I hope my comments will be helpful in providing a scientific perspective on EMF issues addressed in the DEIS.

Sincerely,

William H. Bailey

William H. Bailey, Ph.D.

Comment Letters

[redacted]

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BIOGRAPHY OF WILLIAM H. BAILEY, PH.D.

Dr. Bailey is a research scientist and consultant, and a visiting scientist at the Cornell University Medical School in New York City. For the past four years he has directed a group of scientists specializing in assessments and reviews of scientific research on electromagnetic fields and other environmental health issues. His past research and teaching affiliations include the N.Y. State Institute for Basic Research, The Rockefeller University, and the City University of New York.

Dr. Bailey has conducted fundamental research and studied the biological effects of electromagnetic fields over the past nine years, and has served as an advisor to various state and federal agencies on health and safety issues concerning high voltage transmission lines and research programs including the National Institutes of Health and the National Science Foundation. He also has served as a consultant to U.S. and Canadian regulatory commissions, utilities, manufacturers of electrical appliances, and housing developers.

Comment Letters

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January 12, 1994

Lou Dreissen, Project Manager
BPA Public Involvement Office
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BPA Public Involvement Office
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Re: Northwest Washington Transmission Project For Section E
Public Comment On Proposes Final EIS
Proposal Of A Fourth Alternative

Gentlemen:

Our firm represents Steve Wight, 2730 North Shore Road, Bellingham, Washington 98226. I am writing in response to the solicitation for public comment on the proposed final EIS for the above-referenced transmission project.

The Wight family owns property along the north shore of Lake Whatcom in Whatcom County, which is traversed by a power line easement which would be affected by the transmission project being proposed. The project would increase the carrying capacity of the transmission lines which cross the Wight property from 230,000 kv to 1,000,000 kv. Even at the present carrying level, a florescent bulb held by a person standing under the lines lights up. The Wights are very concerned about the potential effect on them and their property from a more than four-fold increase in the transmission capacity of the line.

None of the three alternatives mentioned in the draft EIS is acceptable at this time. Research on the effects of EMF on people is at a preliminary stage, with studies currently underway which will potentially provide a great deal of useful information in the foreseeable future. In the absence of this information, the development should not proceed. It would be foolish to proceed with the project at this time, when information which may severely impact the useability of the project as designed will be available in the foreseeable future. It makes sense to wait until more is known about the associated risks to humans.

There is a substantial impact on property values by such projects at the present time. The diminution in property values is due in part to public perception of the danger of EMF exposure, and partly to the admittedly unknown nature and severity of the danger. Property buyers are increasingly concerned and wary of these developments. Again, further information would be helpful in alleviating the problem, or in answering the public's questions.

There is another alternative to the project as proposed, which would solve all of these problems and yet allow the project to be developed. This "fourth alternative" has been discussed at public meetings, but apparently was never seriously considered, as it should have been. The entire project could be located on undeveloped DNR land, approximately 1/2 mile from the location of the present transmission easements. Human habitation and private land ownership impacts would be avoided by locating the project on publicly owned property in the immediate vicinity of the proposal. Certainly in the long run, and perhaps even in the short run, this would prove to be a cheaper and more practical alternative, because it avoids the potential future problems to humans and private property occasioned by the other three alternatives.

I urge you to give the "fourth alternative" due consideration, including developing such an alternative and circulating it for comment. I believe you would find that the public would be very supportive of the idea, and that the current opponents of the three alternatives contained in the draft final EIS would be the strongest supporters of the fourth alternative.

Thank you for your consideration.

Sincerely,

Jeffrey T. Broihier

JTB:lkb

cc: S. Wight

Comment Letters

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January 10, 1994

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RE: Comments on DEIS BPA/Puget Power Northwest Washington Transmission Project

Dear Project Manager:

Please accept this letter as my comments on the above referenced DEIS. My family resides at 624B Highway 9, Sedro Woolley. The transmission lines addressed in the DEIS run directly through my 7 acre farm. The legal right to do so was obtained by BPA through an easement that was recorded on May 15, 1946 and recorded at the Skagit County Auditors Office under Auditors No. 391872. Said easement was for a strip of land 125 feet in width.

An additional easement was granted to BPA on October 24, 1963, recorded under Skagit County Auditors No. 642377 which included an additional 137.5 feet of land running parallel and adjacent to the first easement for a combined easement totalling 262.5 feet. Said easement is shown on the attached short plat map.

My understanding of the easement is that it grants to BPA the right to construct and maintain electrical transmission lines within the easement. There is no mention of any electrical magnetic fields ("EMF") being emanated from the lines outside the easement. Therefore, for the record, I must state that I feel that any emanation of EMF's onto any other part of my property by Puget Power or BPA constitutes an act of criminal trespass. No easement has granted you the right to produce EMF's off said easement and I do not do so now.

The DEIS does not show whether or not my house was considered as one that would suffer an increase of EMF's from the construction of your project. The DEIS also does not address the cumulative impacts, as required by NEPA, on EMF when combined with the existing lines parallel to the proposal. Therefore, I am requesting BPA and Puget Power officials visit my farm and determine how far outside the current easement EMF's are being emanated under current conditions and determine what if any increase in EMF's will be imposed on my family. Please call before visiting the site and I will arrange to meet with you.

I would also like to state for the record that I am not in any way trying to stop your project. However, I, like many of my neighbors, am concerned that Puget Power and BPA has made a conscious decision to proceed with the project although in your own words *"The state of scientific evidence relating to EMF has not yet established a cause-and-effect relationship between electric or magnetic fields and adverse health effects."* This of course raises the question of what happens if such *"cause-and-effect"* can at some time in the future be shown, will the BPA or Puget Power accept the liability for their decision. Puget Power has a terrible record in Skagit County for past management decisions that were based on best management practices. They built the dams on Baker River which has had terrible consequences on the King Salmon runs almost to the point of extinction of the species. They were the major proponents of a nuclear power plant in the County based on best management practices which as we all know now are an environmental and health disaster. I for one will go on public record as stating that I will hold Puget Power and BPA legally responsible for any and all adverse health effects on my family for each occurrence including but not limited to attorneys fees, health and emotional suffering. Again, I am not trying to stop your project, I simply want reassurance from BPA and Puget Power that they fully realize the consequences of their decision to proceed and most importantly accept the responsibility for those consequences.

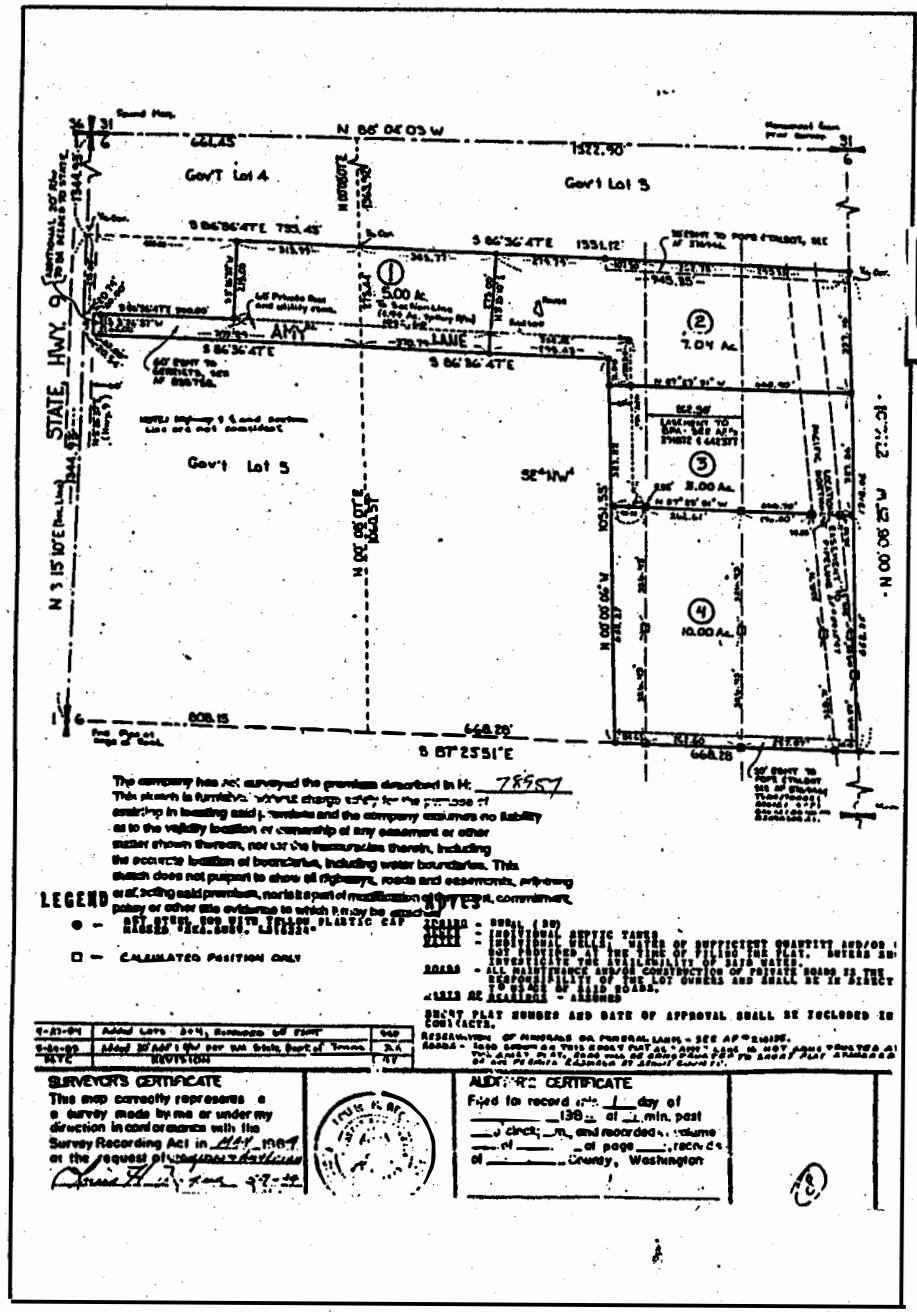
To the issue of property values I would like to request that if alternative numbers 2 or 3 are pursued, that the placement of the new towers be alternated with the existing towers. That is to say that if a property is already encumbered with the existence of a tower, that the new tower be placed on alternating parcels of property. Clearly one property with two towers is more encumbered than one property with no towers.

Having stated all the above, based on my interpretation of the limited information available in the DEIS, I feel that so long as BPA and Puget Power accept the legal consequences to proceed then alternative number 3 would be in the best interest of my family. If I can be of any assistance to you in whatever capacity you might feel appropriate, please do not hesitate to contact me at the above phone number or address.

Sincerely,

Larry J. Kunzler

Comment Letters



UPPER SKAGIT INDIAN TRIBE

2284 Community Plaza Way • Sedro Woolley, Washington 98284
Phone (206) 856-5501 • SCAN 542-3171 • FAX (206) 856-3175

RECEIVED BY BPA
NWTP-2-88
1/14/94
AREA: DISTRICT

January 6, 1994

Bonneville Power Administration
Public Involvement Office - ALP
P.O. Box 3621
Portland, OR 97208

ATTN: John M. Taves, NEPA Compliance Officer

RE: BPA/Puget Power Northwest Washington Transmission Project
Draft Environmental Impact Statement (DEIS)

Dear Mr. Taves:

The Natural Resources Department of the Tribe has a few comments regarding the above referenced project.

The project area appears to pass through the Tribe's recently delineated wellhead protection area (WHPA) for its Helmick Road Reservation Area (map enclosed). The risk of contamination of the aquifer for this project appears to be low; however, the plans should depict the information regarding the WHPA in case of a construction related incident that could lead to the potential contamination of the aquifer.

The Upper Skagit Reservation is not depicted in any of the DEIS maps. The depiction of the reservation areas (maps enclosed) would convey more accurately the land use pattern in the project area.

Please contact Daniel Jones, Environmental Planner, at (206) 856-5501, if you have any questions or comments regarding this matter.

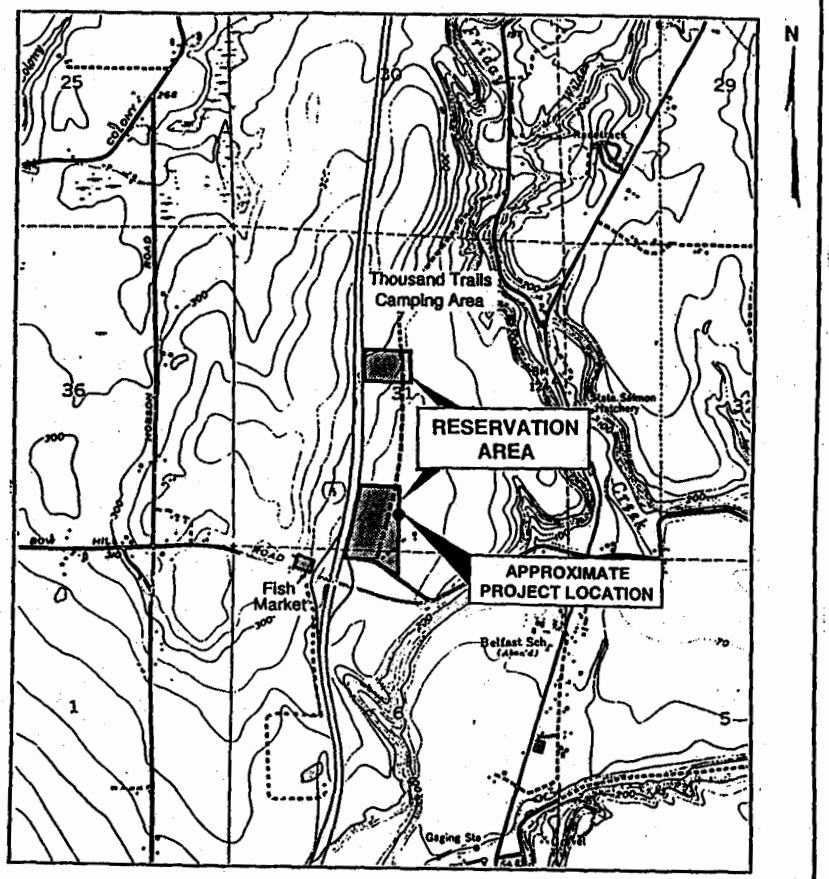
Sincerely,

Doreen M. Maloney
Natural Resources Director

Enclosures

cc: Skagit Systems Cooperative

Comment Letters



0 1000 2000 4000

Approximate Scale in Feet

NOTES

1. Map adapted from USGS 7.5 minute topographic map of Alger, WA quadrangle, dated 1952.
2. Well and boundary locations are approximate.

Upper Skagit Indian Tribe Bow Hill Groundwater Supply Investigation	
VICINITY MAP December 1993 T-1463-01	
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG. 1

WASHINGTON STATE DEPARTMENT OF
Natural Resources

December 17, 1993

Mr. Lou Driessen
Project Manager
Bonneville Power Administration
Public Involvement Office ALP
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Driessen:

This letter is to formally comment on Bonneville Power Administration's proposed Northwest Washington Transmission project as outlined in the Draft Environmental Impact Statement. The Department of Natural Resources is concerned with project impacts in corridor segments A, E, F, G and H1.

Corridor Segment A

This segment links the Custer substation with the main transmission line. It crosses State land in the SW1/4 of Section 36, T.40N., R.1E. The DEIS (pages 4.133 and 4.134) says that the existing transmission line has already imposed land use limitations along the right-of-way. The DNR is aware of the existing limitations. The DEIS further states that the project is not expected to "alter significantly" the impacts on land use and resources on or off the right-of-way. Regardless of significance, the DNR needs to know specifically the alteration to current land use limitations that this project would cause.

Corridor Segments E, F and G

These segments cross State land in T.37N., R.4E. and R.5E. They lie almost entirely in the Lake Whatcom watershed. The DNR has two mainline forest management roads which provide access to the existing transmission line corridor. The ML-1000 road is in the Mirror Lake block (south of Park road) and the H-3300 road is in the Haner Mountain block (north of Park road). Numerous transmission line access spur roads (built by BPA) intersect the DNR forest management roads. These BPA spurs are poorly constructed and minimally maintained. Drainage is inadequate and in some cases the spurs have regressed into nothing more than gullies. The physical, environmental and economic impact to the DNR road system is severe. For example, in December of 1992 heavy rains falling on the BPA spurs resulted in the H-3300 road ditch being clogged with silt and debris which washed down from the BPA spurs. When the ditch was plugged, water came onto the H-3300 road causing further erosion and scouring. The DNR spent $5000 to fix the road after the storm.

Comment Letters

The DEIS lists several mitigation ideas (page 4.86) to control erosion and run-off such as revegetation, culvert installation and water bars. In addition to these items, the DNR would like to see a more aggressive approach in solving the problem:

1. Inventory tne existing BPA access road network. Decide which spurs are needed to provide minimum functional access to transmission line structures. Then decide which spurs are no longer needed.

2. Reconstruct spurs that are needed so that they have adequate drainage and road prism characteristics.

3. Abandon spurs that are not needed by removing culverts, constructing waterbars, trenching, contour excavating and revegetating.

The DNR engineers have experience and expertise in road design, construction, maintenance and abandonment. They would be available as consultants to assist BPA in site specific evaluations of access spur impacts. Ideally, the reconstruction and abandonment work could be incorporated into the transmission line construction contract.

Corridor Segment H1

This segment is an alternative route which lies east of an existing route on segments H, I and J. It crosses State land in Sections 7 and 18, T.36N., R.5E. The DEIS (page 2.31) says this segment would require a new 112 foot wide right-of-way with associated access spurs. This would involve clearing approximately 20 acres of timber on State land, as well as building numerous access roads in the Thunder creek and Mills creek drainages. Since BPA has an existing right-of-way corridor on segments H, I and J, the DNR is not interested in granting an additional right-of-way for purposes of this project. The DEIS makes it clear that BPA favors using segments H, I and J rather than H1.

The DNR would appreciate a response from BPA regarding the above issues. Please mail your response to:

Department of Natural Resources
Northwest Region Headquarters
919 North Township Street
Sedro Woolley, Washington 98284
Attn: Brian Davis

Thank you for soliciting these comments.

Sincerely,

Brian Davis
Baker District Engineer

bc: Osborn, Olsen, Mickel, Hitchcock, Stratton, Blazek, Kelley, Allen Fiksdal (EFSEC)

STATE OF WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

PO Box 43172 • Olympia, Washington 98504-3172

January 12, 1994

RECEIVED BY CPA
PUBLIC INVOLVEMENT
LOG #: NWTP-2-87
RECEIPT DATE:
1/14/94
AREA: DISTRICT:

Mr. Norm Andreson, EFBG
Environmental Specialist
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208-3621

Subject: Northwest Washington Transmission Project Draft EIS

Dear Norm:

Enclosed are two comment letters from the Washington State Departments of Wildlife and Natrual Resources regarding the Northwest Washington Transmission Project Draft Environmental Impact Statement. These are the only comments which have been received by EFSEC. The letter from the Department of Natrual Resources was sent directly to BPA but I am enclosing it for continuity.

We have not yet reviewed the draft EIS for consistancy with state guidelines. We will be conducting that review shortly. If you have any questions please call me at (206) 956-2152.

Sincerely,

Allen J. Fiksdal
EFS Specialist

Enclosures

Comment Letters

TO:

STATE OF WASHINGTON
DEPARTMENT OF WILDLIFE

JAN 10

January 7, 1993

Allan Fiksdal
EFSEC Project Manager
P.O. Box 43172
Olympia, WA. 98504-3172

Re: DEIS BPA/Puget Power NW. Washington Transmission Project Comments:

Dear Mr. Fiksdal:

The Washington Department of Wildlife has reviewed the DEIS prepared by the Bonneville Power Administration and Whatcom County. We offer the following comments regarding areas of interest and concern regarding the fish and wildlife resources associated with this project.

One of the primary concerns related to the project as proposed will be the numerous stream crossings associated with the construction and maintenance of the powerline. Past history has shown that the existing powerline has had problems with culvert failures associated with right-of-way roads. Some of these culverts were surface water drainage facilities, other associated with small untyped seasonal streams.

Two areas of primary concern are the portions of right-of-way associated with Squalicum/Stewart Mountains and the segment from Wickersham south to Highway 20. These areas are associated with steeper and unstable ground. These areas have demonstrated the tendency to slope failure and debris torrents during past storm events. Several catastrophic failures over recent history have resulted in severe damage to downslope habitats and impacted water quality in receiving waters such as Lake Whatcom and the Samish River.

Inadequate culverts fail during such events resulting in additional impacts to stream courses and receiving waters as silt and debris from road and culvert failures are added to existing bedload movement.

The DEIS does recognize that permanent stream crossing utilizing a bridge is the preferred alternative over a culvert. It also recognizes the need for a crossing facility. It should be noted that some existing crossings make use of simply fording equipment through the stream. Olson Creek, a Lake Whatcom tributary is an example. This type of use can be detrimental to downstream fish habitats, particularly during spawning and incubation periods.

Several of the streams located along the right-of-way corridor are important spawning streams for resident cutthroat and kokanee from Lake Whatcom. These include Olson, Carpenter, and Smith Creeks. Resident cutthroat spawn in the spring and kokanee spawn in the lower reaches of the stream during the fall.

Since the preferred window of construction has potential to encompass both time periods, special effort should be made to address the potential impacts that can result from activities associated with the stream crossings.

This is also true the segment of right-of-way between Wickersham and Highway 20 where the Samish River and tributaries may be impacted by similar activities. Fisheries resources at risk here also include anadromous species such as coho, steelhead, and searun cutthroat.

It was noted in the review of the DEIS that Bonneville Power is proposing that culvert installations be sized to handle a 25 year storm event. It should be pointed out that the standard to which Department of Wildlife conditions a Hydraulic Project Approval require a facility to sized to pass a 50 year storm event.

Wildlife resources are somewhat less subject to impact resulting from this proposal. However, the DEIS did mention the presence of eagle nesting territories along the north shore of Lake Whatcom. The closest nest is approximately 1/2 mile from the powerline. While the document states that none of the nests will be impacted as a result of construction activities, there seems to remain one possibility which is mentioned in the construction methods. This would be the assembly of structures off-site and using a helicopter to fly them into place. Use of a helicopter within 1/2 mile of an active nest during the critical portion of the nesting season could have impacts to birds which would be more significant than ground based equipment on the right-of-way. Should this alternative of construction be used, extreme care should be taken to assure that no flight paths closer that 1/2 mile are used, and at no time should a flight path over the nest sites be taken.

The Department of Wildlife has participated in consultation with BPA during the preparation of this document. The agency anticipates continued consultation during the permitting and construction phase. It is understood that both Departments of Wildlife and Fisheries will be involved with the Hydraulic Project Approvals associated with activities involving stream crossings and installation of culverts and bridges along various segments of the powerline route.

Comment Letters

We hope that these comments are useful in the development of this project. If you have further questions please feel free to contact me at (206) 424-1260.

Sincerely,

Arthur G. Stendal
Area Habitat Biologist
Region 4

cc. Zillges, Division
Muller, Region 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

REPLY TO ATTN OF: WD-126

JAN 13 1994

John Taves
Environmental Coordinator
Office of Engineering
P. O. Box 3621
Portland, Oregon 97208

Re: BPA/Puget Power Northwest Washington Transmission Project

Dear Mr. Taves:

In accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the **BPA/Puget Power Northwest Washington Transmission Project**, Draft Environmental Impact Statement (draft EIS). The draft EIS analyzes the No Action alternative and the Construction Action Alternative options, and their effects on the environment in Whatcom and Skagit counties.

The draft EIS is an informative, well prepared and comprehensive document. It addresses the pertinent issues and potential environmental impacts of project activities very well. Although the information in the draft EIS is generally excellent, we have provided comments on some issues of concern.

Based on our review, we have rated the draft EIS EC-2 (Environmental Concerns -- Insufficient Information). Our concerns are based on the project's impact on water quality. The draft EIS was very thorough in the presentation of site-specific wetland and water quality impacts. This level of detail is very helpful and is an important component of a complete impact analysis. However, it lacks a reference to a monitoring program that will help to ensure compliance with state Water Quality Standards.

This rating and a summary of our comments will be published in the *Federal Register*. A copy of our rating system is enclosed.

Water Quality Monitoring

The EPA would like to see the EIS focus more attention on base-line monitoring measurements of water resources. These would provide a detailed description of the existing physical, chemical, and biological characteristics of streams, lakes, and other water bodies in the planning area. The EIS should provide a quantitative basis to judge whether physical and chemical parameters, such as temperature, turbidity, and sediment

Comment Letters

accumulation, will be kept at levels that will protect and fully support designated uses and meet Water Quality Standards under each of the action alternatives. The state's identification of water bodies with impaired uses (found in the state 303(d) report), as well as the magnitude and sources of such impairment, should also be included.

In addition, the EIS should reveal the locations of spawning habitat with respect to stream crossings in the project area. If project activities are occurring coincident with spawning of anadromous fish, extra mitigation measures should be put in place so that the fish habitat is not disturbed.

The EIS should include a discussion of monitoring for each resource category determined to be significant through the scoping process, including fisheries and water quality. A properly designed monitoring plan will demonstrate how well the preferred alternative resolves the identified issues and concerns by measuring the effectiveness of the mitigation measures in controlling or minimizing adverse effects.

The monitoring plan should include types of surveys, location and frequency of sampling, parameters to be monitored, indicator species, budget, procedures for using data or results in project implementation, and availability of results to interested and affected groups.

The EIS should describe the feedback mechanism which can compare baseline data with monitoring results to adjust standard operating procedures, monitoring intensity, and protocol at first detection of adverse effects. Provision of such an adjustment process ensures that mitigation strategies will improve in the future and that unforeseen adverse effects are identified and minimized.

Thank you for the opportunity to review this draft EIS. Please contact John Bregar at (206) 553-1984 if you have any questions about our comments.

Sincerely,

Kathy Veit, Chief
Program Coordination Branch

SUMMARY OF THE EPA RATING SYSTEM FOR DRAFT ENVIRONMENTAL IMPACT STATEMENTS: DEFINITIONS AND FOLLOW-UP ACTION *

Environmental Impact of the Action

LO–Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplish with no more than minor changes to the proposal.

EC–Environmental Concerns

The EPA review has identified environmental impacts that should be avoid in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO–Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU–Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEO.

Adequacy of the Impact Statement

Category 1–Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2–Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoid in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3–Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussion are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEO.

Comment Letters

CITY OF BELLINGHAM • WASHINGTON •

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
Planning Division
City Hall, 210 Lottie Street, Bellingham, Washington 98225
Telephone: (206) 676-6982 FAX (206) 676-7833

RECEIVED BY BPA PUBLIC INVOLVEMENT
LOG #: NWTP
RECEIPT DATE: 1/18
AREA:

January 14, 1994

Bonneville Power Administration
Public Involvement Office - ALP
P.O. Box 3621
Portland, OR 97208

RE: BPA/Puget Power Draft Environmental Impact Statement Comments

The City of Bellingham has reviewed this DEIS and has the following comments:

BPA Construction Alternative

The City favors an alternative which reduces potential EMF/EMR impacts and is least disruptive to the utility corridor. The City requests additional analysis of the taller towers along the Lake Whatcom hillside. This analysis should discuss landscaping alternatives such as taller trees outside of the danger zone which screen the base of the towers and selective planting of lower growing trees and larger shrubs within the right of way.

Puget Power/ Alternative Routes North of Mt. Baker Highway

The pipeline alternative may be desirable because it moves the 115 Kilovolt line away from denser development. However, the City will have to receive more analysis of impacts to wetlands, the Bay to Baker Trail, pedestrian access, EMF/EMR impacts, and the proposed high school at Mcgrath Road, McLeod Drive, and Mt. Baker Highway prior to a decision.

Puget Power/ St. Clair Route

The wetland boundaries shown on Figure 16 do not agree with our 1990 wetland maps. Photocopies of these maps are attached.

Taller towers are proposed in City of Bellingham designated View Sensitive Areas. Impacts of these towers on views from the east should be addressed.

Puget Power Bellingham Substation/ Alternative Substation Routes

The Orleans route alternative appears to bring lines closer to residential uses along Carolina Street. What are the impacts of changing the location of this line? Why does it need to be moved? Puget Power should install additional landscaping around the Puget Power Bellingham Substation as mitigation against visual impacts.

Required Permits

Permits which will be required by the City of Bellingham include:

1. A Shoreline Management Permit for any work within 200' of a Shoreline of the State.
2. A wetland delineation, field notes, and a Wetland permit application for any work within wetlands. Impacts on wetlands should be avoided. If avoidance is not possible, mitigation prior to the impact and restoration after the impact will be required.
3. A Clearing or Utility Construction Permit if cutting, clearing, or removal of vegetation will occur on rights-of-way which have not been fully developed.
4. If the Pipeline Alternative is selected, a Conditional Use Permit for utility line expansion outside of a public right of way in a residential, single-family zone.

Specific staff technical comments and questions are enclosed. Please call Jackie Lynch at (206) 676-6982 if you have any questions.

Sincerely,

Patricia Decker
Director

C: Roland Middleton
SEPA Official, Whatcom County

Comment Letters

Staff comments on the BPA/Whatcom County DEIS:

I. Will the redundancy principal be compromised if "redundant" lines are in the same corridor?

II. How will the increasing population of British Columbia affect the long term availability of Canadian power?

III. Chapter 4/101: Please discuss impacts of permanent vegetation loss in wetlands due to clearing beneath lines.

IV. Chapter 4/146: (12.) Please discuss the use of lop and scatter or chipping instead of burning, especially when near homes.

V. Chapter 4/150, Table 12. Does this analysis assume lines are the same distance above the ground and from the edge of the right of way?

VI. Chapter 4/177: Is this electric field value 7.6 meters from the base of the pole, or from the line approximately 16 meters above the ground?

VII. Appendix C2, Tables C-1 through C-3: Were figures generated assuming one 500-KV line or two?

IIX. The following Figure and Map corrections are attached:

A. Figure 15.

B. Please update all applicable maps to show the City of Bellingham's current City Limits, as attached.

C. Please show the location of the future high school, on the northwest corner of McLeod and Magrath, east of the Mt. Baker Highway. Discuss the environmental implications of the maintenance of electrical transmission lines near such school.

D. Figure 23: Major land trades in the Lake Whatcom Watershed have added significant acreage to the Department of Natural Resources managed lands. Please show these changes in ownership.

E. Chapter 4/156: Please amend Table 14 to conform with changes to Figure 15.

Table 14: ~~Land Use~~ Zoning Information by Assessment Area for the Existing 115-kV Transmission Line and Substation

Assessment Area	Jurisdiction	~~Land Use~~ Zoning Category	~~Designated~~ Density (DU/Ac)* Maximum
Area 1	City of Bellingham Roosevelt Neighborhood Plan	 Industrial 12I Public 10P	 Not Applicable Not Applicable
Area 2	City of Bellingham Roosevelt Neighborhood Plan	Residential Single 3RS 6RS Residential Multi: 4RM 7RM 1RM	 3 to 4 6 ~~11~~ ~~6 to~~ 22 ~~6 to~~ 12
Area 3	City of Bellingham Roosevelt & Mount Baker Neighborhood Plans	Industrial 13I 16I/RM Residential:3RS	Not Applicable ~~Not Applicable~~ ~~3 to~~ 4
Area 4	City of Bellingham & Whatcom County Mount Baker Plan & Urban Fringe Subarea	Residential Single 3RS Industrial 2I Urban Residential UR4	 3 to 4 Not Applicable 4 to 7
Area 5	Whatcom County Urban Fringe Subarea	Urban Residential UR4 Rural District R5A	 4 to 7 0.2 to 1

* Dwelling Units Per Acre

The substation is located in an area that is zoned *Industrial.* The transmission line leaves th substation on Virginia Street to Pacific Street passing adjacent to an area that is zoned *Publ* This area is used as a center for the City of Bellingham Public Works Department and Whatcom Transportation Authority. At the intersection of Virginia and Pacific Streets, the transmission line turns north to North Street and east on North Street to St. Clair Street. A this point the transmission goes north to Sunset Drive. The transmission line passes throug areas which are zoned *Residential Multi* and *Residential Single* to the City of Bellingham Railroad Trail (old railroad right-of-way which crosses the St. Clair unimproved road right-way), where lands are zoned *Industrial,* to another *Residential Single Zone* abutting Sunset Drive. At the City/County boundary, the transmission line passes into an area zoned *Urban Residential* and then *Rural* near the BPA-Bellingham Substation.

Comment Letters

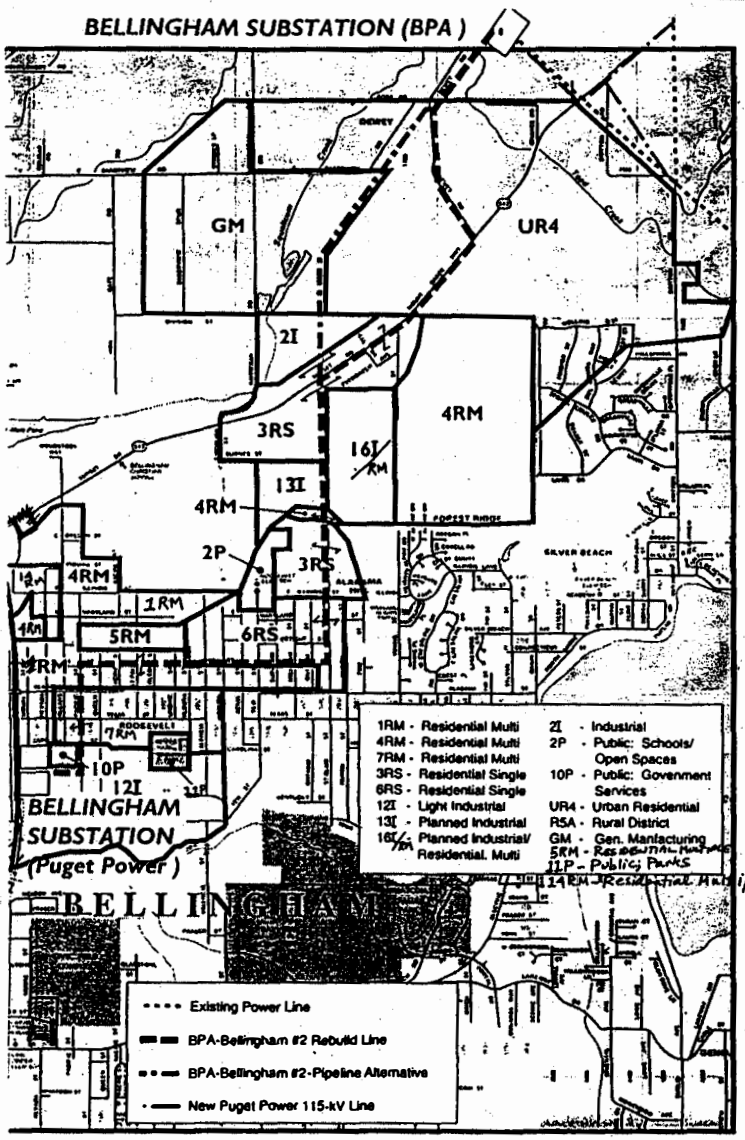


Figure 15
City of Bellingham and Whatcom County Land Use Zoning

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG #: NWTP-2-92
RECEIPT DATE: 1/18/94
AREA: DISTRICT

January 13, 1994

United States Department of Energy
Bonneville Power Administration/ ALP
P.O. Box 3621
Portland, Oregon 97228-9927

To whom it may concern:

We would like to take this opportunity to express our opposition to your proposed power line upgrade project, and to specific statements made in your Environmental Impact Statement.

We have great concern that the increased transmission levels will have negative health effects for us and our young children. Because the effects of electromagnetic radiation are still largely unknown, we disagree with the idea of blindly proceeding using past procedures and standards.

We are also concerned with the projects impact on our property value. It has already been made clear to us by many Realtors that we will see a significant change downward. Statements in the EIS indicating slight to moderate effects are blatantly inaccurate.

It seems that a logical alternative may be the moving of the power line corridor back away from the populated areas onto the state owned land.

In conclusion, we oppose the continuation of this project in its present form, and will continue to investigate any possible legal remedies to stop it.

Sincerely,

Terry K. Bierman
Lori A. Bierman

Comment Letters

SHARON HOOFNAGLE, D. V. M.
EQUINE MEDICINE & SURGERY
(PRACTICE LIMITED TO HORSES)
2726 NORTH SHORE RD.
BELLINGHAM, WA. 98226
TELEPHONE 671-2100

Jan. 5, 1994

Concerning Bonneville Power Administrations Northwest Washington Transmission Project:

Bonneville Power Administration:

I would like to comment on the draft EIS. I am adamantly opposed to this project for the following reasons:

I object to any increase in the electromagnetic field (EMF) and in fact believe that the current EMF is too high. Evidence is steadily mounting that the EMF has serious effects on the body, including adult, and more importantly, childhood cancers. At the edge of the right-of-way the EMF readings far exceed the level that any of the studies on health risks indicate are safe.

BPA is telling us that the studies are not conclusive. That statement is not correct.Several of the studies are conclusive, some are not. We could argue this indefinitely, just as the tobacco industry argued indefinitely that cigarette smoking was not harmful. Since not everyone who smokes gets lung cancer it could still be argued that the studies on smoking are inconclusive. That would be a ludicrous arguement today.

All industries and individuals associated with EMF's , including BPA, are recommending avoidance of the fields, yet BPA is proposing this project that would increase the EMF over family homes.

It may be argued that we knew the lines were here when we purchased our properties. That is true, but we were told that the only danger was from electrocution, and that was virtually impossible unless we lifted long metal poles into the air under the lines.BPA gave us booklets on how to work safely under the lines. They showed people driving tractors under the lines, in the same EMF's that they are now saying to avoid.The project will increase the EMF but they are still telling land-owners that they can work their land under the lines. It just doesn't make sense.

BPA's own book, Electrical and Biological Effects of Transmission Lines U.S. Dept of Energy 1989 documents the dangers of the EMF's. For example

Pg. 52: Three of five studies done to investigate a possible association between childhood cancer and powerline magnetic fields reported some positive results.(showed association). About 50% of 30 reports on "electrical occupations) and cancer report significant elevated risks.

Pg. 53: Overall, research with humans, supplemented by lab animal research, suggests the possibility for adverse effects from human exposure to electic and/or magnetic fields.

Pg. 55: Table 8 lists the relative risk of childhood cancer from powerlines at 1.5-3; it lists the relative risk from environ mental tobacco smoke (lung cancer) as 2-3. Almost identical.

Pg 56. Powerline-childhood cancer risk is higher than the risk from home asbestos-lung cancer . (Millions are being spent to remove asbestos from schools and other public places)

All of the above, plus additional facts supporting the dangers from the powerlines are in BPA's own book. Other unbiased studies are even more emphatic that the lines are dangerous.

Property values have decreased with the increased public awareness of the problems associated with powerlines. Puget Sound mutiple listings real estate sales agreement contains a section on hazards such as land fills. One question in this section asks if the listed property is close to power lines.

The noise level from the power lines it not acceptable even at current levels.

Much of the construction would take place close to Lake Whatcom. The resultant run-off would affect the drinking supple for most of the county. The land in this area is unstable and prone to debris storms.

This project would not benefit Whatcom County. These lines are not for local use.This increase is to enable BPA to shuffle power to California and other distant areas. New power sources are being developed in our county in the form of co-generation plants.

While an adult may choose to take a risk, no one has the right to expose children to the possibility of cancer. This is evident in the cases of children being exposed to second-hand tobacco smoke or drugs in utero. The courts are dealing with these issues now.

sincerely,

Sharon Hoofnagle, D.V.M.

Comment Letters

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. BOX 47600 • Olympia, Washington 98504-7600 • (206) 459-6000

RECEIVED BY BPA
NWTP-2-
1/24/94

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To Allen Fibsdal	From Vernice Santee
Co. PFSE C	Co.
Dept.	Phone #
Fax # 956-2158	Fax #

January 14, 1994

Mr. John Taves
U.S. Bonneville Power Admin
PO Box 3621
Portland OR 97208

Dear Mr. Taves:

Thank you for the opportunity to comment on the draft environmental impact statement (DEIS) for the BPA/Puget Power Northwest Washington Transmission Project proposed by U.S. Bonneville Power Administration and Whatcom County. We reviewed the DEIS and have the following concerns.

The DEIS identifies that wetlands will be impacted along the power transmission line and at the Bellingham Substation. Wetlands are a valuable natural resource that provide many useful benefits, including wildlife and fisheries habitat, floodwater attenuation, water quality improvement, and recreational and aesthetic values.

Both indirect and direct impacts to wetlands should be avoided or minimized to the greatest extent possible. Measures that would avoid and minimize wetland impacts, which should be adopted, include: minimizing the construction footprint, revegetating the construction footprint after pipeline placement, and placing check dams in the pipeline trench to avoid altering hydrology of wetland sites.

Page 4/105 states that the proposed pipeline alternative uses an existing pipeline right-of-way. Therefore, this pipeline may go through wetlands that the original pipeline did not avoid. This alternative may unnecessarily, by today's standards, impact wetlands; while the earlier pipeline was permitted to bisect wetlands. New information on the functions and values or sensitivity of those wetlands may have been acquired and it may no longer be acceptable to impact those wetlands. The proposed pipeline route should be placed where wetland impacts would be minimized as much as possible, regardless of the original pipeline route.

The goal of compensatory mitigation should be to replace the wetland functions and values that will be destroyed. In the case of severely degraded wetlands, however, we recommend that improved quality be an objective. The DEIS identifies that wetland mitigation may be needed for some project alternatives, but there is no discussion of the nature of this mitigation. If

the project will result in unavoidable wetland impacts, Ecology recommends preparation of a mitigation plan which includes information on: the goals and objectives, construction details (including schedule), the hydrologic regime, revegetation plans, monitoring plan, contingency plans, buffers, the estimated cost, and bonding.

The Bellingham substation is proposed in an area that drains to Squalicum Creek. Squalicum Creek is a priority watershed: a DOE funded effort--the Squalicum Floodplain Project--is currently underway to resolve the significant flooding and water quality problems existing in the Squalicum Creek watershed. In light of this, project proponents should contact the members of the Squalicum Floodplain Project to make sure the Bellingham substation and other project components do not frustrate their efforts.

With this in mind, it is notable that construction of the Bellingham substation would result in the loss (through direct filling) of less than an acre of wetlands, yet there is no discussion of compensation for this wetland loss. These wetlands are valuable in that they are providing attenuation of stormwater.

This is a significant value, in light of the flooding and water quality problems lower in the watershed which are being addressed by the Squalicum Floodplain Project. We encourage that any loss of wetlands, even those which may meet the criteria for a Nationwide #26 Permit, be compensated for by the restoration, enhancement, or creation of additional wetlands. In the very least, the water quality and quantity functions provided by those wetlands should be fully replaced.

As noted in the DEIS, permits will be required from the U.S. Army Corps of Engineers for this project.

you have any questions, please call Ms. Ann Remsberg with the ands Section at (206) 407-7271.

Sincerely,

M. Vernice Santee
Environmental Review Section

MVS:93-8627
cc: Ann Remsberg, Wetlands
Sandra Manning, CP

Comment Letters

February 5, 1992

Public Involvement Manager
Bonneville Power Administration
P.O. Box 12999
Portland, Oregon 97212

Re: ALP - BPA/Puget Power NW WA Transmission Projects

Dear Sirs;

I am writing in regards to my concerns about this project. My husband, myself, and our 3 month old daughter live at 1135 Lattimore Road in Ferndale, Washington. Our home is approximately 100 feet from the 230 kV line of BPA between Custer and Bellingham.

We purchased our home in October 1986. At that time we did not have any concerns about living near power lines. The sight of the towers & crackling lines did not & do not currently bother us. It was a compromise for us to live near them in order to afford a nice ($77,000 in 1986) home on 1 1/2 acres of land. We spent the next 3 years after purchasing our home recarpeting, painting inside & out, landscaping, & building a 30' x 40' shop. Currently our home is appraised at approximately $155,000.

When we bought our home we had absolutely no concerns about our health & power lines. In the past three years however, there has been much talk in the news on cancer concerns living near high voltage lines, particularly in small children. I have received all of BPA's information regarding the studies which have been done & have read all of them. We had our home metered for electro magnetic field tests in 1989 & the daily average was 12 to 13 with a high during stormy weather of 35 inside our home. We can hear the lines crackle in our bedroom in the rain, & I suppose due to increased usage we could hear them all last summer for the first time. These studies suggest a danger if the readings are > 3 to 6. I fully understand the need to increase our power support & supported BPA's original plan for lines along the Noon road. I do not oppose the rebuilt lines in terms of view, building etc.

I am, however, very concerned about the health impact on myself & my family if these lines are allowed to take the 500 kV capacity. Our home & the right of ways to build near power lines were determined prior to these new studies which are suggesting the possibility of an increased risk of cancer. Page 2 of 7

Comment Letters

The BPA & Puget Power backed off the Noon Road project due to the rallying of the NOPE group of neighbors who were concerned about these cancer risks. It really makes me mad that this NOPE group now feels it is just fine to expose my family to this risk & they are supporting this new proposal simply because it is no longer in their backyard.

I feel that this Environmental Impact Study needs to completely explore these new suggestions & studies on cancer risks & how this increased voltage exposure might impact families currently living in close proximity to the high voltage lines. Moving has been seriously considered in our household, but economically it is not in our best interests plus we have spent 5 years making this our dream home.

Now that we have a small child I am simply hopeful that the risks are low, but that BPA officials do not compromise our health just to get these lines built without a comprehensive study of this. The prior owners of our home had an 18-year old son die of leukemia while living here which may or may not be related to the high voltage lines. I simply have to tell myself it was not, but who knows?

In closing, I would like to implore you to fully explore the increased risk to us of 2 - 230 kV lines or possibly 500 kV lines & have the [redacted] independent scientific data to support that it is safe for families & small children to live within 100 feet of these high voltage lines.

If these studies currently in progress determine it is not safe after the lines are upgraded, what will happen to people like us? Already, simply due to the NOPE group our home's resalability is greatly reduced & I would like to see this issue resolved one way or the other prior to a major change in the current line voltage. You cannot imagine what it is like to constantly see on the news another new study show a cancer/leukemia risk living near high voltage lines while you wake your daughter up near them every day & you continue paying your monthly mortgage on your most important asset, your home.

Please take these issues into full consideration.

Sincerely,

[redacted]

Karen M Bylsma
Karen M. Bylsma
1135 Lattimore Road
Ferndale, WA 98248

(206) 384-9033

Comment Letters

David H. Davis

2310 King Street, Bellingham, WA

PH: 206-734-0900

February 10, 1992

The Public Involvement Manager
Bonneville Power Administration
P.O. Box 12999
Portland, OR 97212

Dear Bonneville Power Administrator:

Last night I attended the so-called public hearing where you proposed to replace the wooden tower segment of your Custer-Sedro Wooley line with a new tower design. I refer to the hearing as "so-called public hearing" because most of the Whatcom County public was not informed of the meeting. Your announcement was a small item on the sports page. That probably covers the legal strictures of federal relations, but in fact this sort of strategy has become familiar to many, many Americans. People in the meeting pointed this out, as well as pointing out how we were not informed of your plans until three weeks before the end of your scoping procedure. In such ways you get people's backsup right at the outset and turn otherwise calm citizens into budding activists intent on watching for anything else that might look tricky or sly or underhanded.

It's silly to say the transmission lines belong to the people of this country, just because they are federal. It may be silly of me to write this letter, which will probably get tossed in the wastebasket purposely or inadvertently. I dislike hearing myself sound like a cynic, but my experience with Bonneville Power goes back 23 years, and I have had dozens of disappointing experiences with you from the first. My 20 acres has been transformed to an unattractive piece of unsalable property from two main causes: the building on your last line, which took a hog's share out of the middle of my land, and the cancer-scares of the past five years that alert people to the dangers of radiation from high transmission lines. Just try to sell such fated property now! Fat chance.

What do you care? You don't. The proof of your insouciance is in many small things. For example, the fact that I've reported a torn down B.P. gate (southeast) for over two years. Today, as two years ago, the gate sits on the ground, chained but horizontal instead of upright. Or take the incident in the old days when your herbicide truck was left all night parked beside Olsen Creek, leaking steadily into the city water supply. Or consider the continual carelessness of needless B.P. contractors who eat their lunches by the creek and throw their sandwich wrappers and pop cans over their shoulders. After all, it's just Mother Nature, right? Why should B.P. employees heed anything that can't talk back? Anything goes under the power lines, or at least so I've found. Such as cutting down my fruit trees. Or spraying orange paint on trees never cut. Or cutting a whole grove of evergreens that were agreed to be topped rather than destroyed (more cost effective). Oh, the list goes on and on. There's much more. Too much!

So you want some public input regarding your next encroachment. Yes, well, the chickens come home to roost. How can you expect approval for new plans when maintenance of old ones have gone so awry? Your employees apologize for the constant crackle of the line on the middle-sized tower (the 3 cable one) by explaining that "the engineers made a mistake". Your whole record seems to be a mistake, as far as I can see.

- or TOWERS

And what I see, everywhere, is your towers. But now, perhaps to your surprise, is a positive suggestion. I would like to suggest that, if you must construct a new set of towers, that you consider the tower designs of other countries. Being a world traveller, as I happen to be, I have noted and sometimes even photographed towers in other countries. Though this may not always be the case, in most places towers-in-rows are of the same design. An aesthetic as well as practical consistency is observed, thus effecting at least an appearance of unity. The towers that cross my property are all of different designs, and they are also staggered at irre ular intervals making the overall effect a hodge podge of shapes and sizes that seriously suggests disorganization.

My own suggestion is that, if you must build still another of these monstrosities, at least repeat the pattern of the last one so that some aesthetic unity, some sort of harmony, is maintained. Your hodgepodge effects of the past are visual symbols of the left hand not being able to comprehend or pay attention to the right. I'm not trying to be a clever writer or what used to be called a smart aleck. I'm very serious about the visual symbolism imposed on the landscape. We are concerned at present with the economic productive and marketing power of the Japanese. One of the reasons the Japanese excel in, for example, stereo and automobile sales, is that their products appeal to the eye. They understand harmony, unity, and aesthetics in their engineering. Beauty, design, practicality: these go together. The same is often true in Italian design. My guess is that B.P. seldom hires designers who would describe themselves as artists or concern themselves with the aesthetics of towers.

As towers go (if we must have them), the newest one on the Custer line is not as ugly as some I've seen. Why not stick with that design and impose order and at least an appearance of unity. The new structure-design I saw at the meeting is not only higher, but a great deal uglier than any of the others. If I have to live with towers on my land and see them every day, please at least make them all look the same. The hodge podge effect is ridiculous and lessens land values even more.

Sincerely,

David H. Davis

Comment Letters

Sedro-Woolley School District No. 101

Transportation / Maintenance
2079 Cook Road, Sedro-Woolley, WA 98284
(206) 856-4421 or (206) 856-6101

February 18, 1992

Public Involvement Manager
Bonneville Power Administration
P.O. Box 12888
Portland, OR 97212

Dear Sir:

The Sedro-Woolley School District has a concern regarding the possible placement of high voltage power lines along S.R. 9 north of the city of Sedro-Woolley.

As you are probably aware, several publications have indicated a possible link between certain illnesses and the proximity to high voltage power lines.

Samish Elementary Shcool is located approximately six miles north of Sedro-Woolley and is adjacent to S.R. 9. Due to the fact that many children could be exposed to potential health hazards if this line were near the school, I would suggest that any new high voltage power lines follow the existing power line path which lies approximately one half mile east of S.R. 9.

Your consideration of this suggestion is very much appreciated.

Sincerely,

Gary Kruger

Gary Kruger
Director

GK/ce

cc: Pam Carnahan, Superintendent

Mr. & Mrs. D. Dess
1625 Maltz Rd.
Ferndale, WA 98248

Dear Sirs,

We were unable to attend the meetings that have been held concerning the proposed double circuit lines. Since we have Bonneville lines going thru our property and poles that will be replaced we do have some concerns.

On the pasture we have had trouble with Puget Powers stray voltage on our property in our milk house and parlor. Since Puget and Powers is wanting to join Bonneville Powers with their lines will we have problems with the stray voltage? Will we have larger towers or single poles? Will you let us know when such constructions would begin?

I would also let you know we own the Al DeGood property at 1632 Maltz Rd. so if you send out any letters if you want duplicated by sending one to the address.

Sincerely,
Vernon & Elaine Dess

Comment Letters

Barbara Dutro
319 Minnesota Avenue
Libby, Montana 59923

March 6, 1992

Scoping Comments on: Bonneville-Puget Power Northwest Washington Transmission Project, Hungry Horse/Columbia Falls Line Rebuild and Northwest Montana/North Idaho Support Project.

I would like to have the fact sheets on these projects.

I have written previously on the Montana/Idaho Support Project, however I would like to have these comments included in the preparation of the document if possible.

When lines are rebuilt, or new lines considered I want the possiblity of placing the lines underground along existing highways to be factored. If it is necessary to do a feasibility study or an in depth cost/benefit analysis I think it reasonable for this to be done. Considerations that should be included are:

Factors negative to high tension lines.

1. Visual disturbance.
2. Effects on wild lands.
   - A. Disturbance to wildlife.
   - B. Loss of naturalness.
   - C. Water quality impacts.
     1. Transmission access roads.
        - a. Erosion and sedimentation.
        - b. Air quality.
     2. Vegetation management.
        - a. Effects on browse.
        - b. Effects on redds, alevins, and fingerling survival and growth rates.
        - c. Costs.
3. Reliablity.
   - A. Naturally occurring outages due to storms.
   - B. Terrorism.
4. Safety.
   - A. Interference with air travel.
   - B. Fishing and hunting interference.
5. High cost of construction and maintenance.

Factors positive to underground lines.

1. No visual effect.
2. No effect on wildlands.
3. Greater reliablity.
   - A. Access to lines.
   - B. Earth padded, rubber enclosed lines failproof. No effect from storms,

earthquakes, or terrorism.

4. No effect on safety or danger to human lives.
5. Positive cost/benefits mostly due to reliablity, and ease of maintenance.

If the cost relative to benefits allows, then new building of transmission lines should be underground in the future, and rebuilds could be put underground.

I would like to see a through discussion of the issue in these Environmental Assessments.

Thank you for your attention.

Sincerely,

Barbara Dutro

Barbara Dutro

Comment Letters

Public Involvement Manager
Bonneville Power Admin.
P.O. Box 12999
Portland, OR 97212

Dear Sir/Madam,

My wife and I attended the 5 Feb. meeting at Sedro Woolley and offered comments, concerns and questions there, however, we have a few more to be included in the environmental study.

Since the 5 Feb. meeting we have been observing transmission line towers. There are a variety of approaches going from a single wood, concrete or steel (of solid construction vs. open tower) with appropriate insulators and 3 transmission lines to truss type steel towers of varied heights with anywhere from 3 single lines to quadruple lines. It's our preference that you install a quadruple line system without modifying the towers. Almost any other approach is going to adversely affect wet lands which the Govt. is going to extremes to protect - at least as relates to private lands. Additionally, a new steel truss tower, as was shown at 5 Feb. meeting, would be no less than 20' higher than the existing very high tension transmission tower. This would add to the unsightly tower maze that already exists. Probably - from our perspective - the best approach would be a single monolithic structure 70' high with all transmission lines hung from it. Quad lines are okay if on a 70' tower. Higher towers are not only unsightly but would take more space and disrupt more wetlands. The existing 2 wood pole system does not have the adverse visual impact of a steel truss tower system.

The existing steel truss towers are very unsightly and perhaps could be made less impacting by painting them a camaflouge color.

We are very concerned that you do all you can to minimize the EMF affect.

Comment Letters

To summarize, we would like to see a single tower with the smallest foot print possible, with a maximum height of 70' and all wires hung from it. We currently have 2 wood poles and a 70' truss tower on our property. Adding an additional high steel truss tower will adversely affect the salability of our property in the future. Our property is our only old age protection. Please do not adversely effect our future.

Thank you.

Sincerely,
Raymond P. Tompkins

Bonneville Power Administration
Public Involvement Manager
P. O. Box 12999
Portland, OR 97212

February 24, 1992

Neighbors Opposing Power Encroachment
1712 High Noon Road
Bellingham, WA 98226

RE: BPA/Puget Power NW Washington Transmission Project

Enclosed are the transcripts from the Scoping Hearings held by the Department of Energy for Puget Power's proposed transmission corridor. The issues raised at the time are still of concern to the citizens of Whatcom County. We feel that these same issues need to be addressed in the forthcoming Environmental Impact Statement. It is not our intentions to inundate you with paperwork, but to identify all the areas of potential impact that this new electric transmission project will have.

Thank you for including these comments in you EIS process.

Sincerely,
Candice S. Ambrois, for
Neighbors Opposing Power Encroachment

Comment Letters

DAVID C. COTTINGHAM
ATTORNEY AT LAW
416 BELLINGHAM NATIONAL BANK BUILDING
BELLINGHAM, WA 98225
(206) 733-6668

March 24, 1992

Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Mr. Jerry Mixon
Deputy SEPA Official for Whatcom County
Whatcom County Building and Codes Administration
284 D. Kellogg Road
Bellingham, Washington 98226

Ms. JoAnn C. Scott
Public Information Office-ALP
Bonneville Power Administration
P.O. Box 12999
Portland, Oregon 97212

BPA- Public Involvement Manager
P.O. Box 12999
Portland, Oregon 97212

Re: Bonneville Power Administration Transmission Project Proposal, January 19, 1992

Dear Sirs and Madams:

On behalf of John and Tani Sutley I submit the following list of concerns regarding the impact of the Bonneville Power Administration Transmission Project for 1992.

Initially let me request that John and Tani Sutley be included on any list that exists as persons interested in and concerned about this project. Their address is 3006 North Shore Road, Bellingham, Washington 98226.

The information which has been received by the Sutleys does not adequately describe the proposal, but considering it as a proposal to add to existing lines the issues raised as concerns are as follows.

1. Noise of current lines.

2. Depending upon weather and draw the lines do react and cause noise in the area.

3. A written road and drainage plan must be submitted to ensure that steps will be taken to maintain and ensure adequate road and drainage maintenance. Adjacent land owners need to be made aware the regularity with which the existing road and drainage maintenance will occur as well as who responsible agents are and how they may be contacted in the event that attention to drainage maintenance is required.

4. A similar plan needs to be drafted to inform the County of the administrations policy on use of its road by off road vehicles.

5. Electro magnetic interference is a growing concern. Existing studies which detail the known or correlated impacts of electro magnetic interference should be disclosed. The impacts of electro magnetic interference on the environment, public and private should be discussed and if they cannot be mitigated the proposal should be denied.

6. The proposal needs to demonstrate what harvesting activity will occur, whether commercially reasonable or otherwise.

7. The impact on streams crossing property needs to be assessed.

Mr. and Mrs. Sutley are property owners in the area of the proposal where it comes close to North Shore Road. Please direct a copy of your response to me as well as to them.

Very truly yours,

DAVID C. COTTINGHAM
Attorney at Law

DCC:ik
cc: Mr. and Mrs. Sutley

Comment Letters

Sharon Hoofnagle, D.V.M.
2728 North Shore Rd.
Bellingham, Wa. 98226

Bonneville:

I own acreage under and adjacent to the Bonneville lines along Lake Whatcom. I would like to comment on the proposed new lines between Custer and Sedro Woolley.

I built my combination barn-home three years ago, it is adjacent to the right-of-way. According to your information sheet you initially recognized that you might increase the lines in 1981 but I was not told about this when I built my home.

Bonneville has a right-of-way across my land, however Bonneville cannot increase the electromagnetic field, noise, or any other hazards or nuisances outside of that right-of-way. If Bonneville does so it will have to purchase additional right-of-way.

Bonneville is asking current residents to accept a health hazard and a decreased quality of life with absolutely no compensation

There are not as many people living close to the Bonneville lines as there were adjacent to the previously proposed Puget Power lines so you may have the impression that resistence is less, howeverthe impact per family is greater.

Progress, prosperity, and quality of life are the most important goals for people. An increase in population and more businesses in the county will not contribute to these goals. Look at the multitude of part-time, minimum wage jobs that these new businesses are providing; this is not progress.

sincerely

Sharon Hoofnagle, D.V.M.

3-23-92

To whom it may concern,

My family lives on St. Clair Street in Bellingham Washington. From what I can understand from your fact sheet you want to put up larger lines down St. Clair to be able to handle more volts of electricity.

My family and I can not support this project already. We are very concerned about the possible health effects it could have on our 3½ year old child. I also run a day care out of my home and am concerned about them (the children) playing under these power lines

Comment Letters

In the last year I have become aware of the possible dangers of EMFs and have read many articles on the subject. I have also made many phone calls to get facts and opinions on the possible health effects. Because of what I've learned I am very worried about our existing power lines let alone new ones that increase the amount of volts that the lines could carry. If I would have known what I know now we would have never purchased the home we live in at this location.

Enclosed is a list of the children in my day care and signatures of each parent.

We are all very concerned about this and <u>will not</u> support additional power lines being installed. We urge you to find a different alternative that doesn't put the health of our children at risk.

Thank you

Jon K. MacDonald
Teri Y. MacDonald
Quinn K. MacDonald
3020 St. Clair
Bellingham, Wa 98226
also the home of
Little Creatures Day
Care

Comment Letters

Day care children

Justin Thomsen	18mths
Justin Thomsen /	
Chance McCabe	10 mths
Stephanie McCabe	
Stephanie Walker	4½ yrs
Michele M Walker	
Stel By Hart	2 yrs
Charlotte Hart	
Cristina Rhea	2½ yrs
Gitte Rhea	
Seth Minor	2½ yrs
Carol	
Gwynn MacDonald	3½ yrs
Lee G. MacDonald	

Dear Sirs:

I hope that your EIS will look closely at the impact this BPA / Puget Power NW Washington Transmission Project will have on streams & local wildlife. Thank you for your attention to these matters. We need to have all areas affected by this project carefully studied so that environmental concerns are not overlooked purely for financial gain.

Sincerely yours.
Holly R. Evans
4209 Norsum Rd
Everson, WA 98247

Comment Letters

March 23, 1992

Please consider the potential harm that high-voltage lines may produce for those people who live under them. When I drive under these lines on rainy days, I can feel the electricity and hear the static in my car radio. Try to place these lines far away from cities, and if possible, farms.

Sincerely,
Patricia Alexander
2201 30th St.
Bellingham, WA 98225-8209

3/29/92

Public Involvement Manager
Bonneville Power Administration
P.O. Box 12999
Portland, Oregon 97212

Dear Bonneville Power,

We would like to thank you for the opportunity to comment on the environmental analysis of the proposed power line upgrade of Bonneville's 230 KV transmission line between Custer substation and Sedro Woolley. As long time property owners of a 9.2 acre parcel of land located near the Smith Rd and Guide Meridian interchange, we have lived with (3) of Bonneville's towers as constant companions occupying the most scenic back section of our property. There are several areas of concern.

One of our primary concerns against this power upgrade is for our health. We distinctly notice a lack of concern toward health side effects of long term exposure produced by high voltage transmission lines suggested by studies in recent years. One article of information that listed numerous cases of leukemia and other cancer in children was printed in the Sept. 1990 issue of Family Circle magazine called "Danger in the Schoolyard," by Paul Brodeur. Another article written in Discover magazine's Dec. 1989 issue "Power Play"

Comment Letters

exists many facts and cases that suggest that ELF from high voltage powerlines and adverse health effects are indeed related and can no longer be ignored. Milligauss readings of 3 to 30 were enough to cause great concern and even cause areas of public schools off limits to personnel – these amounts of ELF being enough to cause cancer "100 times more than might have been expected

Recent tests at our property showed milligauss readings of 2 milligauss and up in our home, and up to 115 milligauss under the powerlines - and we understand that these levels can go up or down based on electrical demand! Why have we not been warned of the risks? And you want to increase the power level? Research has been greatly (limited) due to ZERO or limited funding. Because of the risks to human & animal health, more (unbiased) research should be done before this project is approved.

We agree that (safe) power is for the good of all. However, we question the justice in imposing power lines upon property without the owners consent with the consequences of health risks, noise pollution, aesthetic damage, building restrictions near the towers, and subsequent property devaluation. The Right of Way seized property unjustly and the property owners were paid a (pittance) for what ruined the value of their land and jeapordize their personal safety. We feel that power associations should be responsible to purchase property at fair market value to compensate property owners who do NOT want to live with electric towers on their property.

If you reach deep into your conscience, could you honestly say you would (choose) to raise your own families on property less than 40 acres with (3) towers of electric power?

Thank You.

Sincerely,
Charlotte H. Sherman

Bryon + Charlotte Sherman
201 E. Smith Rd
Bellingham, WA 98226
206 (398-7477)

March 31, 1992

ELIZABETH MACHUCA
P.O. BOX 1755
STANWOOD, WA 98292

I'm writtenq regarding the BPA / PUGET POWER NW WA. TRANSMISSION PROJECT

I'm WASN't able to attended the meeting held February 29 to MARCH 31. 1992, cause of illness reasons.

I Agree with the decision of increasing electric Power capacity in the main transmission And I'm please at your decision toward this Project, to make our Power capacity better.

Yours
Elizabeth Machuca

BONNEVILLE POWER ADMINISTRATION
STRATEGY ON ELECTRIC AND MAGNETIC FIELDS

February 1995

ISSUE: There continues to be significant uncertainty about the potential health effects from electrical and magnetic fields. Scientists and others do not agree on how to interpret the available information, and public concern is sincere.

RESPONSE: BPA believes the concerned public and its employees need to know about and understand the EMF issue.

DESIRED RESULTS: BPA is recognized as a credible source of information on EMF and a utility responsive to public concern and to changes in the science.

To implement its STRATEGY on EMF, BPA adopts the following GUIDELINES governing its practices with regard to electric and magnetic fields:

1. *Staffing:* Maintain a high level of professional knowledge and internal capability in the area of EMF.

2. *Communication:* Create, gather and share educational information on EMF. Communicate respectfully, sincerely and responsibly with employees and the public. Inform and involve affected customers and the public in BPA project development. Explore with employees ways to reduce exposures in carrying out their jobs.

3. *Research:* Support research and development associated with EMF and transmission facilities that directly relates to accomplishing BPA's desired results.

4. *Transmission Facilities:*
   Consider EMF as an important factor with other design and siting factors for new and upgraded transmission facilities. BPA will take reasonable low-cost steps to minimize field exposure for these facilities while taking into account operation and maintenance considerations. Consider modifying existing facilities upon request and at no cost to BPA. System reliability, operation, maintenance, and safety should not be adversely affected, and there should be no adverse impact on others.

5. *Participate with Others:*
   Participate with professional entities, the scientific community, utilities, governmental bodies and others in the development of the EMF issue.

6. *Evaluation:* Monitor and evaluate EMF activities and make decisions based upon the value of the results.

Insert 21- Updated BPA EMF Guidelines

PUGET POWER

Policy Statement

Electric and Magnetic Fields

Puget Power is committed to providing safe, reliable, and efficient electric service to our customers and a safe work environment for our employees.

What are electric and magnetic fields? Electric and magnetic fields (EMF) exist in nature as well as around all types of electrical devices. The Earth is surrounded by a natural magnetic field, and there is a natural electric field across the cells in our bodies. Like the heat from a candle, electric and magnetic fields drop off rapidly from the source. The electric and magnetic fields around all electrical appliances and power lines fall within the extremely low frequency (ELF) frequency range. They have a much lower frequency (60 cycles per second) than the electromagnetic energy from sunshine (1,000 trillion cycles per second, or radio broadcast waves (1/2 million to 100 million cycles per second). Extremely low frequency fields do not have enough energy to break molecular bonds or damage DNA.

It is generally accepted that extremely low frequency EMF cannot damage DNA or chromosomes in cells to initiate cancer. Some scientists have speculated about whether extremely low frequency EMF can promote cancer that has already been initiated by something else, but no supportive evidence has been uncovered. Laboratory studies show that extremely low frequency EMF has no effects on reproduction or development. Some epidemiological studies have found people with cancer are more likely to live near power lines with high estimated EMF than other people. Such a difference in exposure is termed an association. Other studies have found no difference in estimated exposures of these groups. None of the studies that have actually measured EMF within residences have found a statistically significant increase in cancer rates.

The current scientific consensus is that the evidence has not demonstrated a cause-and-effect relationship between health effects and extremely low frequency EMF. For example, the Science Advisory Board, an independent panel of scientists who advise the federal Environmental Protection Agency, has concluded: "There is insufficient evidence from the human epidemiology data and from animal/cell experiments to establish cause-and-effect relationships between low frequency electric and magnetic field exposure and human health effects and cancer."

What is Puget Power's position on EMF? Consistent with our public commitment and with our understanding of the consensus of the scientific community, Puget Power has and will continue to:

- Follow all applicable laws and regulations governing the installation of electrical facilities,
- Maintain a public involvement program to assist us in the siting, design and construction of new facilities,
- Monitor research, regulations, legal actions, and communications on extremely low frequency EMF to further develop our ability to communicate with our customers, our employees and government officials,
- Actively support an expanded research program on extremely low frequency EMF jointly funded with, and coordinated by the federal government. We will also continue our long time contribution to the Electric Power Research Institute which has spent over $75 million to fund studies in this area conducted by independent universities and research institutes,
- Respond to customer and employee requests for information and provide free in-home measurements of extremely low frequency magnetic fields to customers who request them,
- Participate in public proceedings to enhance understanding of the scientific studies, to review the limits of existing information, and to examine the cost and effectiveness of field management proposals,
- Broadly assess our system's extremely low frequency EMF levels for use in power system planning,
- Prepare for implementing possible field reduction measures that might be required in the future by quantifying the cost and effectiveness of various measures and addressing equity issues.

For further general information, please contact our Environmental Services department at 206-462-3484 or 206-462-3566.

REV 6/24/95

Insert 22- Puget Sound Power & Light EMF Policy

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Pacific Coast Ecoregion
Western Washington Office
3704 Griffin Lane SE, Suite 102
Olympia, Washington 98501
(360)753-9440 Fax: (360)753-9008

July 13, 1995

Leslie Kelleher
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208-3621

FWS Reference: 1-3-95-SP-733
(X Reference 1-3-92-SP-381)

Dear Ms. Kelleher:

This is in response to your letter dated July 5, 1995 and received in this office by facsimile on the same date. Your letter requested an update to a previous species list dated and sent to your office on June 26, 1992 (FWS Reference # 1-3-92-SP-381). This list supersedes #1-3-92-SP-381.

The enclosed is a list of listed threatened and endangered species, and candidate species (Attachment A), that may be present within the area of the proposed Northwest Washington Transmission Project in Whatcom and Skagit counties, Washington. The list fulfills the requirements of the Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act of 1973, as amended (Act). We have also enclosed a copy of the requirements for Bonneville Power Administration (BPA) compliance under the Act (Attachment B).

Should the Biological Assessment (BA) determine that a listed species is likely to be affected (adversely or beneficially) by the project, the BPA should request Section 7 consultation through this office. If the biological assessment determines that the proposed action is "not likely to adversely affect" a listed species, the BPA should request Service concurrence with that determination through the informal consultation process. Even if the biological assessment shows a "no effect" situation, we would appreciate receiving a copy for our information.

Candidate species are included simply as advance notice to federal agencies of species which may be proposed and listed in the future. However, protection provided to candidate species now may preclude possible listing in the future. If early evaluation of your project indicates that it is likely

Insert 23- Threatened and Endangered Species Consultation Updates

to adversely impact a candidate species, the BPA may wish to request technical assistance from this office.

In addition, please be advised that federal and state regulations may require permits in areas where wetlands are identified. You should contact the Seattle District of the U.S. Army Corps of Engineers for federal permit requirements and the Washington State Department of Ecology for state permit requirements.

Your interest in endangered species is appreciated. If you have additional questions regarding your responsibilities under the Act, please contact Leslie Propp at 360-753-4063 or Jim Michaels of this office at the letterhead phone/address.

Sincerely,

for Nancy G. Gloman

David C. Frederick
Supervisor

lp/tb
Enclosures
SE/BPA/ 1-3-95-SP-733/Skagit & Whatcom
c: WDFW, Region 4
WNHP, Olympia

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ATTACHMENT A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES WHICH MAY OCCUR WITHIN THE VICINITY OF THE PROPOSED NORTHWEST WASHINGTON TRANSMISSION PROJECT IN SKAGIT AND WHATCOM COUNTIES, WASHINGTON (Located in various sections of T35N R5E/ T36 N R5E/ T37N R4/5E/ T38N R3/4E/ T39 R1-3E/ T40N R1/2E)

1-3-95-SP-733

LISTED

Bald eagle *(Haliaeetus leucocephalus)* - wintering bald eagles may occur in the vicinity of the project from about October 31 through March 31.

There are four bald eagle nesting territories located in the vicinity of the project at: T35N R5E S28; T37N R4E S4/9/15/16; T38N R3E S21/27 ; and T39N R2E S9/16 . Nesting activities occur from about January 1 through August 15.

Marbled murrelet (*Brachyramphus marmoratus marmoratus*) - may occur in the vicinity of the project.

Major concerns that should be addressed in your biological assessment of the project impacts to listed species are:

1. Level of use of the project area by listed species.

2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.

3. Impacts from project construction and operation (i.e., habitat loss, increased noise levels, increased human activity) which may result in disturbance to listed species and/or their avoidance of the project area.

PROPOSED

None

Insert 23- Threatened and Endangered Species Consultation Updates

ATTACHMENT A (1-3-95-SP-733) Continued

CANDIDATE

The following candidate species may occur in the vicinity of the project:

Harlequin duck (*Histrionicus histrionicus*)
Little willow flycatcher (*Empidonax traillii brewsteri*)
Olive-sided flycatcher (*Contopus borealis*)
Pacific fisher *(Martes pennanti pacifica*)
Pacific Townsend's (=western) big-eared bat (*Plecotus townsendii townsendii*)
Yuma myotis (bat) (*Myotis yumanensis*)

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ATTACHMENT B

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) AND 7(c) OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED

SECTION 7(a) - Consultation/Conference

Requires: 1. Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2. Consultation with FWS when a federal action may affect a listed endangered or threatened species to ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after it has determined if its action may affect (adversely or beneficially) a listed species; and

3. Conference with FWS when a federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or an adverse modification of proposed critical habitat.

SECTION 7(c) - Biological Assessment for Construction Projects *

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify any proposed and/or listed species which is/are likely to be affected by a construction project. The process is initiated by a federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, please verify the accuracy of the list with our Service. No irreversible commitment of resources is to be made during the BA process which would result in violation of the requirements under Section 7(a) of the Act. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an onsite inspection of the area to be affected by the proposal, which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population or potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within the FWS, National Marine Fisheries Service, state conservation department, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures; and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. Upon completion, the report should be forwarded to our Endangered Species Division, 3704 Griffin Lane SE, Suite 102, Olympia, WA 98501-2192.

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* "Construction project" means any major federal action which significantly affects the quality of the human environment (requiring an EIS), designed primarily to result in the building or erection of human-made structures such as dams, buildings, roads, pipelines, channels, and the like. This includes federal action such as permits, grants, licenses, or other forms of federal authorization or approval which may result in construction.

Insert 23- Threatened and Endangered Species Consultation Updates

Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

July 5, 1995

Ms. Leslie Propp
U.S. Fish and Wildlife Service
3704 Griffin Lane SE, Suite 102
Olympia, WA 98501-2192

Dear Ms. Propp:

As discussed in our phone conversation Thursday, June 29, 1995, Bonneville Power Administration (BPA) is requesting an updated threatened and endangered species list for their proposed Northwest Washington Transmission Project. BPA first requested a species list on May 26, 1992 (FWS Ref 1-3-92-SP-581), and received a letter concurring with their findings of "not likely to adversely affect the marbled murrelet or bald eagle" (FWS Ref 1-3-93-I-809).

A preferred alternative has been chosen since the 1992 letter. The preferred alternative is for BPA to rebuild its existing 230-kV single circuit, wood pole line to 230-kV double-circuit, lattice-steel. The line runs from BPA's Sedro Wooley Substation to its Custer Substation, a distance of about 61 kilometers (38 miles) (see attached map). The new line would remain on existing right-of-way with minor amounts of clearing needed. Also attached is a list of coordinates (township, range and section) for the transmission line.

We are in the process of addressing comments on the Draft Environmental Impact Statement and expect a Record of Decision (ROD) in September. We would appreciate your response as soon as possible, and please fax it to us in order to expedite the process. My fax number is (503) 230-5699.

If you have any questions, please do not hesitate to call me at (503) 230-7692.

Sincerely,

/S/

Leslie Kelleher
Biologist

Enclosures

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Insert 23- Threatened and Endangered Species Consultation Updates

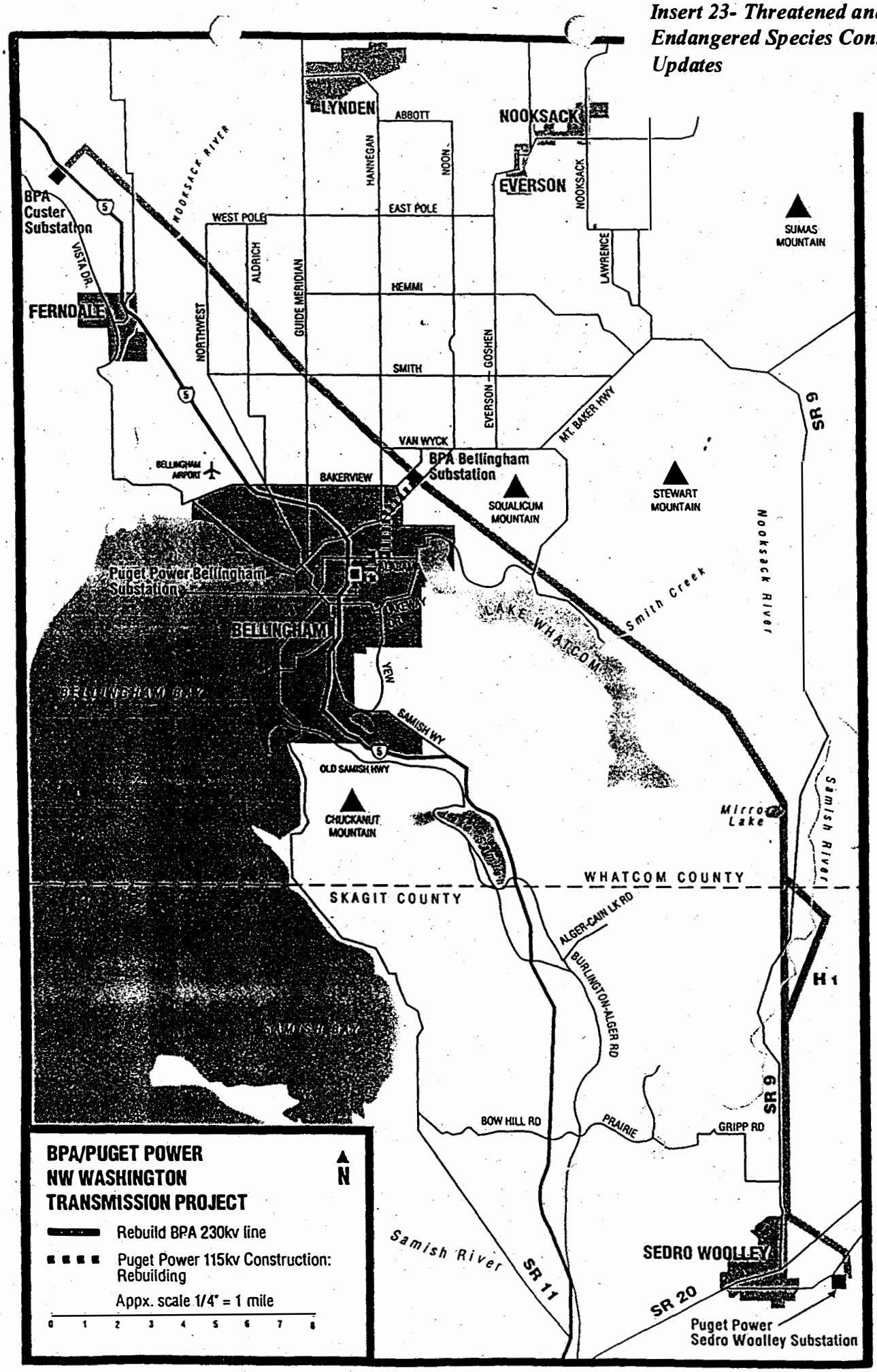

FIGURE 1

Townshp, Section, Range Bellingham Corridor Passes Thru

township	tdir	range	rdir	section
40	N	1	E	36
40	N	2	E	31
39	N	1	E	1
39	N	2	E	6
39	N	2	E	5
39	N	2	E	8
39	N	2	E	9
39	N	2	E	16
39	N	2	E	15
39	N	2	E	14
39	N	2	E	22
39	N	2	E	23
39	N	2	E	24
39	N	2	E	26
39	N	2	E	25
39	N	2	E	36
39	N	3	E	30
39	N	3	E	31
39	N	3	E	32
38	N	3	E	5
38	N	3	E	4
38	N	3	E	9
38	N	3	E	10
38	N	3	E	15
38	N	3	E	14
38	N	3	E	23
38	N	3	E	24
38	N	3	E	25
38	N	4	E	19
38	N	4	E	30
38	N	4	E	29
38	N	4	E	31
38	N	4	E	32
38	N	4	E	33
37	N	4	E	4
37	N	4	E	3
37	N	4	E	10
37	N	4	E	11
37	N	4	E	14
37	N	4	E	13
37	N	4	E	24
37	N	4	E	25
37	N	5	E	19
37	N	5	E	30
37	N	5	E	31
36	N	5	E	6
~~36~~	~~N~~	~~5~~	~~E~~	~~5~~
36	N	5	E	7
~~36~~	~~N~~	~~5~~	~~E~~	~~8~~
36	N	5	E	18
36	N	5	E	19
36	N	5	E	30
36	N	5	E	31
35	N	5	E	6
35	N	5	E	7
35	N	5	E	18
35	N	5	E	17
35	N	5	E	19
35	N	5	E	20

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3704 Griffin Lane SE, Suite 102
Olympia, Washington 98501-2192
(206) 753-9440 FAX: (206) 753-9008

September 10, 1993

Phillip D. Havens
Wildlife Biologist
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

FWS Reference: 1-3-93-I-809

Dear Mr. Havens:

This letter is in response to the Biological Assessment (BA) and your cover letter, dated July 1, 1993, of the proposed Northwest Washington Transmission Project. The U.S. Fish and Wildlife Service (Service) received your letter on July 6, 1993.

The proposed project is to upgrade electricity potential on 38 miles of transmission line by reconstructing the carrying line and power poles. Approximately 122 acres of scrub growth would be affected. If alternative H1, a dogleg in the line, were to be chosen, you would affect an additional 84 acres of second- and third-growth forest. Because you have not chosen the preferred alternative, you have analyzed the project as a worst-case scenario.

The Service concurs that the proposed project, as described in the BA, in not likely to adversely affect the bald eagle if you maintain proper spacing of lines to prevent electrocuting birds. The Service also concurs that the proposed project is not likely to adversely affect the marbled murrelet.

This concludes informal consultation pursuant to Section 7(a)(2) of the Endangered Species Act of 1973, as amended. The project should be re-analyzed if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; and/or, if a new species is listed or critical habitat is designated that may be affected by this project.

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If you have any questions about this letter or your responsibilities under the Act, please contact Michelle Eames at the letterhead phone/address.

Sincerely,

Carla W. Burdge

for David C. Frederick
State Supervisor

cl/pjs
c: WDW, Region 4 (Muller)
USAI, Portland (Krahmer)

Insert 23- Threatened and Endangered Species Consultation Updates

DOE/BP-2658
August 1995
5C