

shown as the Project preferred and environmentally superior route in the Draft EIS/EIR. A modified Alternative D remains the environmentally superior alternative in this Final EIS/EIR. Certain route options within Alternative D were analyzed in the Supplement to the Draft EIS/EIR and replace portions of the original Alternative D as the preferred route. These route options are coincident with the environmentally superior route with the exception of one area in the Tulelake basin and one area near Bear Mountain. In the Tulelake basin, the lead agencies found the recommended environmentally superior route (N-10 Alt.4) to have prohibitively high costs compared to slight environmental benefits and is therefore not feasible from an economic perspective. In the Bear Mountain area, the lead agencies found that more extensive access road and construction efforts on North 2C made the comparison with North 2B so close that one is not clearly environmentally superior to the other. In these and other areas, environmental impacts along the preferred route can be reduced to acceptable levels through implementation of mitigation measures. An explanation of these considerations is presented in Section 1.2.2 of Volume 1 of this document.

Alternative D in the northern section was chosen as the environmentally preferred alternative primarily because it minimized impacts to timberlands, maximized the route segments on public lands, and minimized impacts to earth, water, and vegetation resources and critical wildlife species and their habitats. Alternative D was selected as the Project preferred route, because this alternative satisfies transmission system reliability considerations, by providing adequate separation from the existing Intertie and because it minimizes the potential for environmental impacts provided that a fuels management plan and fire response plan is developed in conjunction with the USDA Forest Service and implemented by the COTP for the area between the existing Intertie and the preferred route as revised. The USDA Forest Service indicated in November 1987 that the area east of the North 3J corridor (east of Little Meadows) has a feasible route location that will minimize resource impacts while meeting geologic concerns. Should a superior location be found near North 3J during final design, the lead agencies will work with the Forest Service to identify, review, and approve that location. There are no alternative routes for the upgrade between the Redding area substation proposed (Olinda) Substation and the Sacramento River since the upgrade was judged to be environmentally superior to any new routing alternative.

In the southern section, between the Sacramento River and Tracy Substation, there are three routing alternatives. A modified alternative Route B remains both the environmentally superior and the Project preferred alternative route. A route option within Alternative B was analyzed in the Supplement to the Draft EIS/EIR and replaces a portion of the original Alternative B as both the environmentally superior and Project preferred option. Alternative B in the Southern Section was identified as the environmentally preferred alternative because it minimized

impacts to developed and planned land uses to the extent practical. Alternative B is the Project preferred route because environmental impacts are minimized while providing adequate separation from the existing Intertie. A route option to the Tracy-Tesla proposed route was also analyzed in the Supplement to the Draft EIS/EIR and has replaced the original route as both the environmentally superior and Project preferred route.

Table 1.3C (presented at the end of this Summary) compares the route alternatives for the Los Banos-Gates Project. There are two main corridors, East and West, shown in Figure 2.1.2-10. The West corridor has several route segment options. The western route segments 1, 2, 4, 5, 7, 9, and 11 comprise both the environmentally superior and Project preferred route. If the Los Banos-Gates Project is not constructed or is deferred, minor modifications may be required south of Tesla to support the increased power transfer needs of COTP. These modifications are summarized in Table 1.3-1 in Section 1.3 of Volume 1 of this document. Potential reinforcements are analyzed and compared in the report and Alternative 1 is preferred.

#### PROPOSED ACTIONS

The COTP, Los Banos-Gates Project, and Pacific Northwest Reinforcement Project would involve constructing new and modifying existing 500 kV and 230 kV AC transmission system facilities in northern and central California, in Oregon, and in southern Washington. Figure 1 following the Abstract shows the approximate locations of the proposed projects.

An easement to build, operate, and maintain the transmission lines would be acquired. A typical easement width for the new line would be for a 200-foot right-of-way. The upgrade portion would retain its existing 125-foot wide right-of-way. Landowners would be compensated for the easement at fair market value and would retain the right to use the land for activities compatible with the transmission line. For substations and switching stations, the land would be purchased in fee. Just compensation based on fair market value would be paid for all land and land rights acquired for the projects. Permits would be obtained for transmission system communication facilities on public land. Communications sites on private land would be purchased, or in the case of existing facilities, a use agreement would be negotiated with the owner.

Mitigation measures have been adopted that would reduce the environmental impacts of construction and operation. Construction activities, including surveying, clearing, access road construction, foundation installation, structure erection, conductor stringing, and conductor sagging, would follow mitigation measures provided in the construction contract and design specifications.

CALENDAR PAGE 1 OF 23  
MINUTE PAGE 1006

The mitigation section has been reorganized. Mitigation measures are now grouped by resource categories to assist the reader in determining which mitigation measures should be applied to reduce significant resource impacts. In response to public comment, mitigation measures have been revised and in many cases reflect more specificity.

The COTP is a proposal to construct or upgrade and operate approximately 340 miles of transmission lines, three substations, a switching station, a series compensation station, and communication and other supporting facilities. Figure 6 shows the Participants involved in the COTP. The proposed actions for the COTP is as follows are:

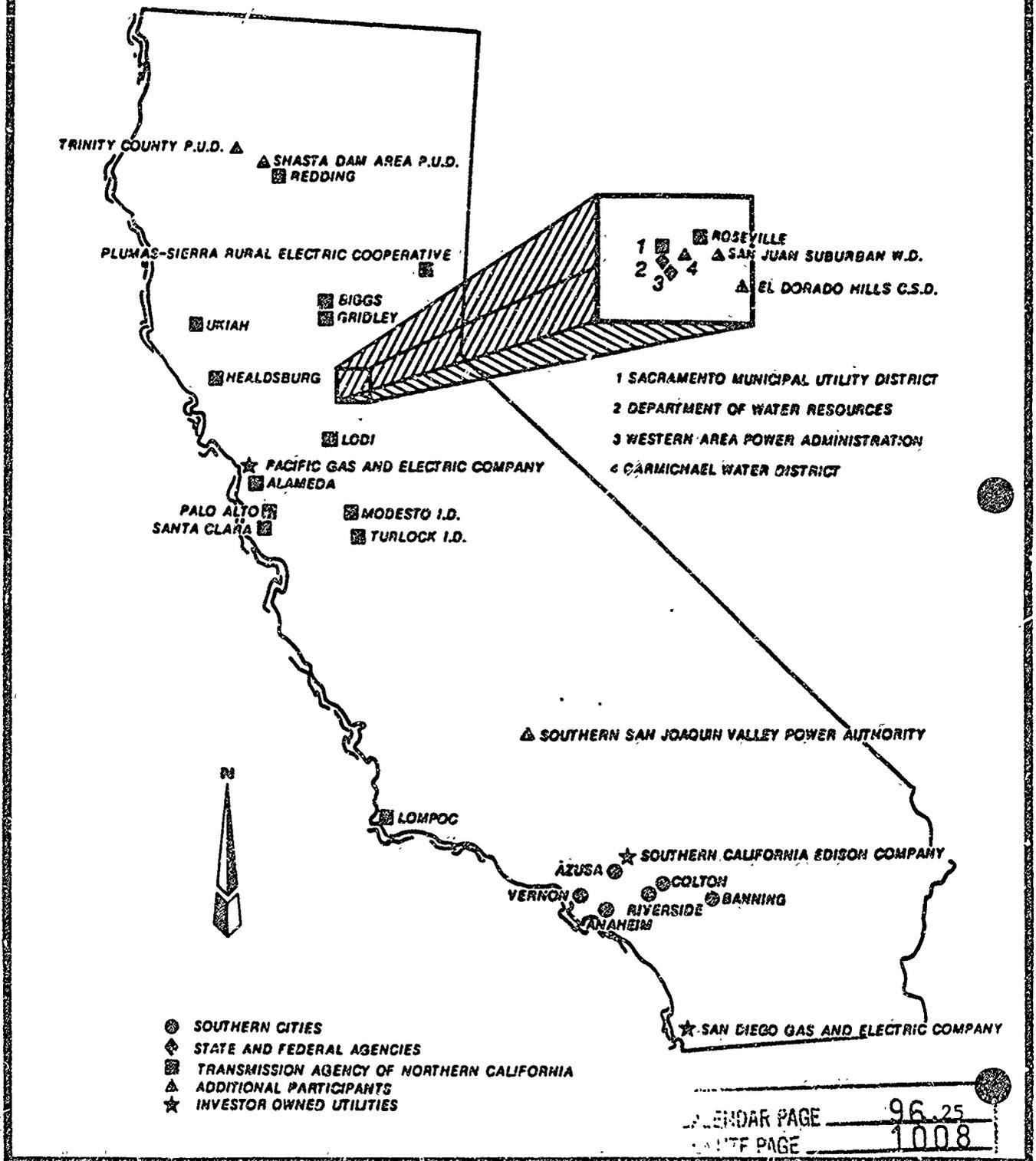
- Constructing a new 500 kV AC transmission line (approximately 1406 miles long) from the California-Oregon border area to the proposed Olinda Substation near the Redding, California area.
- Upgrading an existing double circuit 230 kV AC line (approximately 170 miles long) owned by the Western Area Power Administration to a single circuit 500 kV AC line from the Redding area proposed Olinda Substation to the Tracy Substation Sacramento River.
- Constructing approximately 20 miles of the approximately 200 miles of the upgrade will be relocated onto a new and separate right-of-way new 500 kV transmission line from the Sacramento River to the existing Tracy Substation.
- Constructing a new 500 kV AC single or double-circuit link (approximately six miles long) between the Tracy Substation and the area of Tesla Substation. If a This double circuit 500 kV AC line is constructed, modification of the would be connected to the existing Tesla-Los Banos No. 2 500 kV line may be also required near the Tesla Substation creating the Tracy-Tesla and Tracy-Los Banos 500 kV transmission lines.

COTP substation and other supporting facilities included in the proposed action are:

- Constructing a new switching station in the Oregon border area near the Malin area of Malin along the existing Malin-Meridian 500 kV AC transmission line to serve as the northern terminus for the COTP and interconnection point to the Pacific Northwest transmission system.
- Constructing a new substation (Clinda) south of Redding near the intersection of Gas Point Road and Happy Valley Road.

CALENDAR PAGE 96  
MINUTE PAGE L. 1 FINAL 07

**FIGURE 6**  
**CALIFORNIA-OREGON TRANSMISSION PROJECT**  
**Project Participants**



- ° Constructing a new series compensation station (Maxwell) near the town of Maxwell, California.
- ° Expanding the Tracy Substation and replacing six 230 kV circuit breakers.
- ° Modifying the Tesla Substation to ~~accommodate the~~ replace two 230 kV circuit breakers, relaying and other equipment necessary to accommodate the new COTP line termination.
- ° Modifying existing and constructing new microwave communication system facilities in central and northern California and southern Oregon.
- ° Modifying the existing Cottonwood Substation to replace three 230 kV circuit breakers.

System reliability was a primary factor influencing the location of the COTP transmission line routing alternatives. Reports by COTP technical committees provide recommendations for project design to ensure compliance with both the Western Systems Coordinating Council (WSCC) and the North American Electric Reliability Council (NERC) guidelines. To minimize the potential for a simultaneous power outage of the COTP and the two existing AC Intertie lines, a minimum separation, where possible, of 8 measured in miles between the existing AC Intertie lines and a new 500 kV line north of Redding and a minimum separation of 2,000 feet between the existing AC Intertie lines and a new 500 kV line south of the Sacramento River has been utilized by the COTP Participants. Separation distances are based on detailed system studies and the application of the WSCC and NERC criteria to reduce the potential for widespread blackouts within the western United States, affecting utility customers as far away as El Paso, Texas.

The proposed COTP transmission line would be supported on steel structures that meet state and national standards. Several types of structures are proposed, including single circuit lattice, double circuit lattice, single circuit tubular, single pole and H-frame, double circuit tubular, and upgrade towers. On the upgrade single circuit lattice towers, steel support members would be added to the ~~base~~ main body of the existing 230 kV double circuit lattice towers, and the top would be rebuilt, to support the new 500 kV AC conductors and provide adequate electrical clearances. Tower structures would typically be 125-~~140~~ 180 feet tall.

The proposed action for the Los Banos-Gates Transmission Project includes the following facilities and activities:

- ° Constructing approximately 34 miles of series compensated 500 kV transmission line between Los Banos and Gates Substations.

- Realigning the existing Los Banos-Midway No. 2 500 kV transmission line into Gates Substation.
- Modifying the Los Banos and Gates Substations to accommodate new electrical equipment and the new line.
- Installing shunt capacitors at various existing substations.
- Possibly installing series capacitors at Gates and/or Midway Substations to compensate the 500 kV transmission lines connecting to Diablo Canyon.
- Reconductoring portions of the Gates-Arco-Midway 230 kV transmission line.
- If any or all of the above features are not constructed or are deferred, it may be necessary to make minor modifications to the transmission system south of Tesla.

The installation of significant system additions, such as the Los Banos-Gates Project, requires careful consideration of electric system reliability. For the bulk high-voltage transmission additions, the project must be so defined that a credible three-line outage cannot occur. To minimize the possibility of a simultaneous three-line outage, a minimum separation of approximately 2,000 feet between the two existing 500 kV lines and the proposed 500 kV line has been utilized by PG&E.

The Los Banos-Gates transmission line would be supported on steel structures that meet state and national standards. Single circuit lattice structures are proposed. Tower structures would typically be 100-160 feet tall.

The Pacific Northwest Reinforcement Project is a proposal to construct new, modify existing, and operate approximately eight miles of transmission lines, ten substations, and four series compensation stations in Oregon and southern Washington. The proposed actions include:

- Improvements and reinforcements to facilities in Oregon at the Alvey, Ashe, Buckley, Bakeoven, Dixonville, Fort Rock, Grizzly, Malin, Marion, Meridian, Sand Spring, Slatt, Summer Lake, and Sycan substations located in the Oregon counties of Deschutes, Douglas, Jackson, Josephine, Gilliam, Jefferson, Klamath, Lake, Lane, Marion, Sherman, and Wasco, and one county within Washington (Benton).
- Adding, removing, and/or replacing transmission towers or equipment such as power circuit breakers.
- Constructing short sections of transmission lines to loop existing lines into substations.

CALENDAR PAGE	96.27
MINUTE PAGE	1010

- Possibly constructing a new substation (Marcola).
- Expanding substations to adjacent properties or relocating equipment within substation yards.
- Upgrading short sections of existing transmission lines.

In addition, BPA has an option to acquire a 50 percent interest in the incremental capacity of PP&L's Eugene-Medford 500 kV transmission line. The Eugene-Medford project has already been sited, permitted, scheduled for construction, and is justified to serve PP&L loads in southern Oregon and northern California. If BPA exercises its option, the Eugene-Medford project would also be used to support the Intertie system as part of the Pacific Northwest Reinforcement Project. The environmental effects of the Eugene-Medford line are presented in a BLM Final EIS entitled "Proposed Eugene-Medford 500 kV Transmission Line, May 1983 (FES) 83-23)".

#### ENVIRONMENTAL CONSEQUENCES

A summary of significant and residual impacts is presented in Tables 2A and 2B (presented at the end of this Summary). Table 2A has been revised from the Draft EIS/EIR to reflect changes in the mitigation measures. Table 2B has been added to present impacts for the Los Banos-Gates Project.

Significant impacts have been analyzed in detail in Volume 1, Section 4.0 of the Draft EIS/EIR for the alternatives, and in Volume 2A, Section 3.0 of the Draft EIS/EIR for route segments and in the Supplement to the Draft EIS/EIR.

Wherever possible, resource specialists concentrated on quantifying the level of impacts that would result from the Project. Quantifying impacts made the comparison of alternatives a more objective process. Quantifications were based on federal or state standards for some resources, and on professional experience and judgment for others. For example, significant air quality impacts were dependent on federal or state standards.

Where specific federal or state standards were not available, the resource specialists developed draft threshold values (or levels) above which significant impacts were defined to occur. For example, for the COTP, forestry impacts were considered significant if 40 acres or more of prime timberland was crossed. Designations of significance can be based on a single factor or on a combination of several factors. For the COTP, agricultural impacts were considered significant if one-half mile of prime farmland or farmland of statewide importance were crossed by a new route segment, and/or if the route results in a new permanent crossing of at least one-half mile of a non-irrigated farming area that is designated in an adopted environmental plan or local

CALENDAR PAGE	96
MINUTE PAGE	11

land use policy, such as an agricultural preserve program. A summary of the quantitative and qualitative criteria used by each resource specialist to determine the significance of impacts is described in Section 1.1.4.

A full discussion of mitigation measures for the COTP is presented in Volume 1, Section 1.1.5 of this document. Mitigation measures for the Los Banos-Gates Project are discussed in Section 5.2 of the Draft EIS/EIR.

For the COTP, ~~the~~ the Project preferred alternative ~~has been identified that~~ is coincident with the recommended environmentally superior alternative with the exception of route options in two areas, as previously discussed.

~~Many~~ Many impacts can either be avoided during the alignment phase of the project or through implementation of adopted mitigation. Impacts for each resource discipline include:

**Air Quality:** Vehicle exhaust and fugitive dust would be the primary emission sources. These are short term, localized effects which should not significantly affect existing climate or ambient air quality. Ozone production from operation of the transmission line would not measurably increase ambient concentrations.

**Earth Resources:** Potential effects include excessive wind and water erosion, future interference with mining of specified mineral resources and effects on the project facilities resulting from low soil bearing capacities, landslides, lavatube collapse, and earthquakes. With the exception of water erosion, there would be no significant effects with application of the mitigation measures.

**Water Resources/Fisheries:** Potential effects would include sedimentation of streams due to increased soil erosion, reduction of water quality and supply, barriers to fish migration and degradation of Redband Trout habitat in one area. With application of all mitigation measures, there would be no residual significant effect.

**Vegetation:** Potential effects on vegetation include loss of riparian woodland along the Sacramento River, disturbance to or loss of vernal pool habitats; disturbance to or loss of MacNab cypress forests along Montgomery Creek, Valley Sink (iodine bush) scrub habitat, and wetlands along certain water courses crossed by the COTP. None of the effects would be significant following implementation of mitigation. For example, some wetlands may be disturbed by unavoidable siting of a few transmission structures. If and where this occurs, appropriate compensation measures will be implemented in consultation with state and federal resource and land management agencies.

Wildlife: There is the potential for collision of special-status and sensitive bird species or water fowl with conductors and shield wires, disturbance to nests and densities of special-status and sensitive wildlife species during clearing and constructions activities, and removal of snags from forested areas with subsequent decline in cavity-dependent wildlife populations. Impacts could also occur to big game species and their habitats from direct habitat loss and effects of human disturbance. With the exception of the potential for collisions, all effects could be mitigated to a less than significant level.

Land Use: Land use impacts include crossing prime timberland, Timberland Production Zones (TPZ), Prime Farmland or Farmland of Statewide Importance (or irrigated, cultivated farmland), and agricultural preserves. All of these impacts would remain significant following application of the proposed mitigation measures. The maximum allowable timber sale quantity on National Forests is limited to the long-term sustained yield, which is that amount of timber production that can be sustained in perpetuity. The long-term sustained yield will vary depending upon the management objectives for each forest. When timberland is removed from production, the long-term sustained yield will be reduced by an amount equal to the net annual growth on those areas. This reduction amounts to less than one-half of one percent for each national forest crossed by the COTP, which is estimated to be 700 thousand board feet (MBF) for the Shasta-Trinity National Forest and 180 MBF for the Modoc National Forest.

Visual: Although mitigation measures would reduce effects, the effects would remain significant following application of the measures. These effects include visual contrast and visibility in open landscape; visibility from Lava Beds National Monument; crossing of sensitive land uses, USFS lands managed for scenic quality retention or partial retention, and local scenic roads and highways.

Socioeconomics: Potential effects include inadequate temporary housing facilities for construction workers, loss in agricultural production, the construction of new access roads, and the location of transmission lines within areas close to residential communities. Effects from construction of new access roads and the location of transmission lines near communities may be significant and ~~unmitigable~~ unmitigable.

Cultural Resources: Potential effects on cultural resources can be mitigated to a level of less than significant. This includes effects from siting transmission structures or access roads on archaeological or historic sites, near Native American Heritage sites, near properties of architectural significance and potential disturbance of an Achumawi sacred area.

A summary of significant and less than significant impacts is presented in Table 21. Significant impacts have been analyzed in detail in

VOLUME 1/ SECTION 4 FOR THE ALTERNATIVES, and in VOLUME 2A/ SECTION 2 FOR ROUTE SEGMENTS. A FULL DISCUSSION OF MITIGATION MEASURES IS PRESENTED IN VOLUME 1/ SECTION 5.

FOR THE LOS BANOS-GATES PROJECT, PG&E HAS IDENTIFIED A PROJECT PREFERRED ALTERNATIVE THAT IS COINCIDENT WITH THE ENVIRONMENTALLY SUPERIOR ALTERNATIVE. THE PREFERRED ROUTE HAS THE POTENTIAL FOR BOTH SHORT AND LONG-TERM IMPACTS ON THE ENVIRONMENT. MOST IMPACTS TO BIOLOGICAL RESOURCES AND CULTURAL AND PALEONTOLOGICAL RESOURCES THAT MAY OCCUR DURING THE CONSTRUCTION OF THE TRANSMISSION LINE CAN BE AVOIDED DURING THE ALIGNMENT PHASE OF THE PROJECT.

The project Los Banos-Gates Project will result in only minimal impacts to earth resources, air and water quality, and public health and safety. No adverse socioeconomic impacts are expected. The primary short-term impacts include disturbance of about 260 acres of land due to construction activities. Only a small amount of agricultural land would be permanently removed from production along the right-of-way. Operational impacts (long-term) include a maximum loss of about 150 acres of land to access roads and tower foundations and the change in aesthetic quality due to the presence of the towers in certain viewsheds. Potential impacts of the preferred route and other alternatives have been analyzed in Section 4 of Volume 2B of the Draft EIS/EIR (Environmental Consequences and Mitigation).

For the Los Banos-Gates Project, PG&E has identified a Project preferred route that is coincident with the environmentally superior alternative. The preferred route has the potential for both short- and long-term impacts on the environment. Most impacts to biological resources and cultural and paleontological resources that may occur during the construction of the transmission line can be avoided during the alignment phase of the project.

A decision to defer the Los Banos-Gates transmission line may require modification of the transmission system south of Tesla Substation. Most of these modifications are of limited scope or will occur inside existing substations and will not result in impacts to the environment. The major exception is the potential need for construction of a 70 kV wood pole line approximately 12 miles long. The environmental impact of the construction of the 70 kV pole line can be satisfactorily mitigated. No significant residual impact will remain. A discussion of the potential impacts and mitigation of the 70 kV pole line is contained in Section 1.3 of this Final EIS/EIR.

For the PNW Reinforcement Project, facilities where improvements would occur are remote and most facility expansions would occur on fee-owned land. Northwest facilities improvements would require removal of existing equipment and adding new equipment. Some additional land would be necessary to accommodate some of the new equipment and, if constructed, to accommodate the new

Marcola Substation. New rights-of-way would have to be acquired for approximately eight miles of new transmission line. Improvements are consistent with the plans of the affected counties in Washington and Oregon and the U. S. Fish and Wildlife Service has agreed with the BPA finding of no effect on threatened and endangered species. Review of cultural resources literature and consultation with the Oregon State Historic Preservation Office indicate that there are no known important cultural resources sites or any Native American religious practices that would be adversely affected.

No significant impacts to forestry, vegetation, prime farmland, water quality, recreational facilities, earth resources or ambient noise levels are anticipated. Waste from the project would be recycled or disposed of at local landfills in accordance with Environmental Protection Agency regulations and practices, the Resource Conservation and Recovery Act, the Toxic Substances Control Act and Oregon's hazardous waste regulations. New equipment will not contain PCBs, and PCB-containing compensating capacitor banks that may be replaced at existing facilities will be disposed of in accordance with all applicable Department of Transportation and other local, state, and federal statutes governing the use, shipment, and destruction of this material. The PNW Reinforcement Project is discussed in more detail in this volume and Volume 2C of the Draft EIS/EIR.

Appendix D of Volume 2A Section 1.5.4 of the Final EIS/EIR contains an updated summary of the information and analyses that will appear in the Final IDU EIS prepared by Bonneville Power Administration. Section 5.10 of Appendix D Section 7 of the summary discusses the potential environmental impacts associated with increases in Intertie capacity and use. These include potential impacts to sales levels, generation mixes, new resource development, use of land and non-renewable resources, air quality, water quality and consumption, resident and anadromous fish, wildlife, vegetation, cultural resources, irrigation, hydroelectric system operations, and electricity rates.

#### AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The areas of controversy and issues to be resolved that are specifically addressed in this Draft EIS/EIR are:

- 1/ The impacts of transmission lines on forest and agricultural lands;
- 2/ Transmission system reliability and its effects on the location of the cooling alternatives;
- 3/ The visual impacts of transmission lines;
- 4/ The benefits of increased transmission capacity and power transfers;

Four areas of controversy and issues were identified in the Draft EIS/EIR. Many of the route options presented in the Supplement to the Draft EIS/EIR were developed in response to these areas of controversy. They have been resolved as follows:

CALENDAR PAGE 96.32  
MINUTE PAGE 1015

1. A summary of the impacts of transmission lines on forest and agricultural lands. There was concern for a route to be chosen that had the fewest impacts on timberland and agricultural land. These lands support a portion of the economic activity of the communities in the study area for the projects. Issues raised regarding timberland included the removal of productive timberland due to the restrictions on tree height under the conductors of the transmission line. Issues raised regarding agricultural land included the difficulty of farming around any transmission towers placed in actively farmed fields, and the difficulty of applying agricultural materials by aircraft on fields with towers and conductors.

Forest Lands:

The preferred route was selected in part because of its fewer overall impacts on forestlands than the other alternate routes. The route options in the Supplement to the Draft EIS/EIR help to reduce impacts. Route Segment N-10M2 is located on less productive forest lands than N-10 Alt.5.

Additional mitigation measures have been adopted such as: a vegetation management plan; off-site reforestation of areas of prime timberland that are currently supporting brush or non-commercial hardwoods; and reducing the potential for insect and disease buildups by coordinating the timing and method of slash disposal with land management agencies.

Agricultural Lands:

The preferred route was selected in part because it offers the opportunity to avoid most agricultural impacts. The route options in the Supplement to the Draft EIS/EIR help to reduce some of the impacts to less than significant levels. The Loveness-Graham route segment in the northern section avoids agricultural land and pivot irrigation systems. The South 1 and South 2 route segments cross less irrigated cropland and the South 2 segment bypasses two planned wind farm developments.

In addition, COTP staff has identified a tentative centerline in the Tulalake area which would cross less than half a mile of irrigated cropland. It would not be necessary to place any towers on irrigated farmland in the Tulalake area. However, the COTP will cross more than 20 miles of irrigated agricultural land in the Sacramento River Delta area. Western's 230 kV line which will be the upgrade portion of the COTP currently crosses approximately 70 miles of irrigated agricultural land in the Central Valley.

The implementation of adopted mitigation measures will reduce impacts to agricultural lands. These include: rehabilitating disturbed soil around tower bases; locating towers adjacent to field boundaries where possible; minimize creating obstacles for aerial applicators; and utilizing structure

design to minimize the land removed from production by the tower bases.

2. Transmission system reliability and its effects on the location of the routing alternatives. There was concern that the need for reliability for the COTP was great enough to make some routing suggestions infeasible. One of these suggestions, that of abutting the existing Intertie, has the environmental advantages of concentrating development and avoiding the creation of new corridors where corridors already exist.

The Forest Service has stated their belief that reliance on centerline separation, without consideration for fire suppression, would not significantly reduce risks of an outage due to forest fire. The Forest Service also stated their belief that locating a new line closer to the existing Intertie than route N-10 Alt.5 offers more protection from forest fires than placing it farther away in more dense timber stands. This may be true if forest fires were the only concern related to the reliability issue and fires such as the 1987 northern California events could be minimized through fuels management schemes. However, separation is the only effective means to reduce the probability of other types of common-mode outages such as those that are either human-caused or weather-related. Based on consultation with the Forest Service, a large portion of route segment N-10M was reevaluated and is now a part of the preferred route. This alternative route segment, which provides some degree of separation from the existing AC Intertie, is feasible only if a fuels management and fire response plan are implemented that will sufficiently reduce the fuel loads between the existing Intertie and the final preferred route and eliminate the potential for a forest fire-caused simultaneous outage of all three 500 kV transmission lines.

3. The visual impacts of transmission lines. There was concern that the newly constructed transmission towers and lines would be unsightly and would visually intrude on areas that are currently developed.

The lead agencies and Project Participants recognize that transmission lines are visible and in most cases such visibility is not desirable. The routing guidelines emphasized minimizing visual impacts through careful siting. In addition, the use of nonspecular (non-reflective) conductor and darkened tower steel can reduce visual impacts in some instances. These mitigation measures have been adopted. Selective clearing of the right-of-way and vegetative screening will also reduce visual impacts in some landscapes.

CALENDAR PAGE 96.34  
MINUTE PAGE 1017

VOL. 1 FINAL

4. The benefits of increased transmission capacity and power transfers. There was concern that the COTP would benefit only a few utilities and their customers, at the expense of many. There was also concern that the Pacific Northwest would be negatively affected by the sale of more power outside the region.

This project will benefit approximately ninety-eight percent of the utility customers in California. The project will also benefit utility customers in the Pacific Northwest. California utilities are major Bonneville Power Administration customers. This project provides another pathway for BPA and Northwest utilities to market surplus power in California. This will reduce the need for electric rate increases in the Northwest in addition to its benefits to California.

#### PUBLIC AND AGENCY CONSULTATION

Government agencies and the public have been encouraged to participate in the planning and environmental review process for the three projects. Since November 1984, numerous activities involving the public have produced a significant amount of public comments and data. Volume 1, Sections 7.1, 7.2, and 7.3 of the Draft EIS/EIR and Volume 1, Section 1.1.7 of this Final EIS/EIR summarize the public involvement programs. Table 1.1.7-7 in Section 1.1.7 of this document identifies the CEQA and NEPA public notification dates for the COTP and Los Banos-Gates Project.

The public involvement activities for the COTP were organized around scoping meetings, corridor workshops, and route workshops, respectively. As part of the public involvement program, newsletters have been distributed approximately every two to three ~~three~~ months, with updates made to the mailing list on a continuing basis. Numerous additional meetings have been conducted on a less formal basis throughout the process.

Thirty-four agency and public scoping meetings were held in California and Oregon from May 13 to May 23, 1985. These meetings were held to identify the issues, concerns, potential mitigation measures, and alternatives to be considered in the planning and environmental analyses of the COTP. The significant issues are addressed in the environmental consequences section of the EIS/EIR (Volume 1, Section 4.1 of the Draft EIS/EIR).

Information provided at the scoping meetings was used to help identify the least environmentally sensitive corridors (2-5 miles wide) for the COTP. Following the scoping meetings, public and agency workshops were held in July 1985 to review and obtain comments on these corridors. The information provided at the workshops was used to help develop alternative routes (1,500 feet wide) within the corridors. Volume 2A, Phase I Report Summary of the Draft EIS/EIR describes this process.

Another series of COTP agency public workshops followed in November and December 1985 to discuss preliminary alternative routes. Information provided at the workshops was used to revise preliminary routes and to help identify the environmentally preferred alternative. Additional public involvement meetings were held in three communities in southern Oregon in January 1986 and nine communities in California and Oregon in May and June 1986. Other public meetings have been held in May, June, August, September, and November 1986. The purpose of these meetings was to describe and obtain additional data on route alternatives still under study.

Comments received from the COTP meetings and workshops in Oregon and California and the technical information gained from meetings with agencies have been integrated into the analyses in ~~the~~ ~~draft~~ ~~EIS/EIR~~. Public and agency comments on the ~~draft~~ Draft EIS/EIR ~~are~~ are included in the Final EIS/EIR.

A Supplement to the Draft EIS/EIR was released in June 1987. Three public hearings were held in Burney, Newell, and Tracy, in early August 1987. The public comment period for the Supplement ended on August 17, 1987. Comments received during the comment period and from the hearings are contained in Volumes 2 and 3 of this Final EIS/EIR.

The public involvement activities for the Los Banos-Gates Transmission Project were organized around two series of public meetings: scoping meetings and route workshops. In addition to meeting-related activities, other public/agency information techniques were used on an ongoing basis. (See Volume 2B, Section 9, and Volume 3B, Appendix C of the Draft EIS/EIR for further information on public and agency consultation for the Los Banos-Gates Project.)

Three Los Banos-Gates scoping and corridor evaluation meetings were held on February 25 and 27, 1986, in Fresno, Coalinga, and Los Banos, California. The purposes of the meeting were to provide resource management agencies and the public with an overview of the Los Banos-Gates Project, present the preliminary corridor alternatives, receive comments regarding interests and concerns about the project that should be considered during preparation of the EIS/EIR, and fulfill scoping requirements of NEPA and CEQA.

Three route selection workshops were held in Fresno, Coalinga, and Los Banos from May 20 to 22, 1986. These provided a forum for public and agency review of the Los Banos-Gates preliminary route alternatives and the criteria used to select them. Workshop attendees participated in small group discussions of the route selection factors and the preliminary route alternatives.

Los Banos-Gates Project newsletters were issued approximately one month prior to each series of meetings and a final newsletter was

CALENDAR PAGE	1	36
MINUTE PAGE	1119	

issued following the selection of a preferred route. Copies were mailed to all persons on the project mailing list, made available at PGandE offices in the project area, and used as handouts at public meetings.

Since the public distribution of the Draft EIS/EIR, PGandE has continued to respond to ongoing informational requests from agencies and the general public. In addition, PGandE representatives attended hearings on the Draft EIS/EIR in Los Banos and Coalinga on January 14 and 15, 1987. These hearings were officiated by TANC and Western. At the hearings, TANC, Western, and PGandE representatives provided answers to questions posed by individuals and agencies during the informal discussion session.

Public involvement activities for the Pacific Northwest Reinforcement Project included contacts with agencies, information bulletins, and discussion of the facilities at scoping meetings. BPA and other PNW utilities were represented at scoping and other meetings for the COTP held in several Oregon communities including Ashland, Medford, Keno, Malin, Klamath Falls, and Portland. These entities were also represented at the public hearings held by TANC and Western to receive comments on the Draft EIS/EIR and Supplement to the Draft EIS/EIR.

The public will continue to be involved in the projects through review and comment on this EIS/EIR, information newsletters, public hearings, and lead agency and proponent responses to public inquiries and concerns.

An active public involvement program will continue through the distribution of newsletters, and lead agency and proponent responses to public inquiries and concerns.

The lead agencies continue to meet with landowners, agencies, and interested individuals with regard to their concerns on the centerline alignment and mitigation of impacts.

#### SUMMARY OF MAJOR COMMENTS AND RESPONSES

This section is new and is not underlined.

##### 1. Property Values

Comment: Visual and Aesthetic Impacts - Property owners expressed concern that the visual impact of the proposed transmission line will cause a decrease in the aesthetic quality of property with a consequent decrease in the property's monetary value. Examples of this comment can be found at L-184 A and L-244 A in Volume 2A, and T-82 C in Volume 3 of this document.

**Response:** Visual and Aesthetic Impacts - We recognize there is a perception that visual impacts could affect existing and future property values. This is addressed in Section 3.8 of Volume 2A of the Draft EIS/EIR, and in the responses to L-184 A, L-244 A, and T-82 C. Various studies on these impacts have been conducted; some have found no decrease in value attributable to transmission lines while others have shown the market value of adjacent property to be depressed.

**Comment:** Compensation - Property owners are concerned about just compensation for loss of property value or other adverse impacts to property (e.g., existing or future uses) by the construction, operation, and maintenance of the proposed transmission line. Examples of this comment can be found at L-176 D in Volume 2A, L-330 U14 in Volume 2B, and T-162 B in Volume 3 of this document.

**Response:** Compensation - Landowners are compensated for an easement on or purchase of their land including damages to their operations or to other parts of their land. This is addressed in Section 3.6 of Volume 2A of the Draft EIS/EIR, and in the responses to L-176 D, L-330 U14, and T-162 B. Issues concerning the amount to be paid must be resolved through land acquisition proceedings.

## 2. Agricultural Impacts

**Comment:** Impact to Prime Farmland and Development of Agricultural Lands - Farmers are concerned about the amount of land that would be removed from production as a result of tower placement along the preferred route. Construction of transmission lines is also seen as a limiting factor to the future development of agricultural land. Examples of this comment can be found at L-200 A in Volume 2A, L-366 D in Volume 2B, and T-175 D in Volume 3 of this document.

**Response:** Impact to Prime Farmland - Physical impacts to prime and/or unique farmland and loss of tillable land are described in Section 3.6 of Volume 2A of the Draft EIS/EIR. A study centerline shows that the new construction portions of the COTP preferred route would cross approximately 25 miles of irrigated cropland. Approximately 107 new towers would be located on irrigated cropland. Approximately 70 miles of the upgrade portion of the COTP is currently and would continue to be located on irrigated cropland. This and related comments are also addressed in the responses to L-200 A, L-366 D, and T-175 D.

**Comment:** Impact to Agricultural Crops and Practices - Farmers and aerial applicators are concerned about the impacts of transmission lines and towers on crop production and farming-related practices such as crop losses, operation of irrigation and drainage systems, and harvesting. Examples of this comment can be found at L-204 E and L-243 B in

CALENDAR PAGE 96.38  
MINUTE PAGE 1 FINAL 021

Volume 2A, L-330 W15 in Volume 2B, and T-6 D and T-175 H in Volume 3 of this document.

Response: Impact to Agricultural Crops and Practices - Crop losses, including yield reduction and interference with or modification of agricultural practices are described in Section 3.6 of Volume 2A of the Draft EIS/EIR. Monetary impacts of crop losses are also addressed. This loss would be compensated by right-of-way settlements.

Soil compaction was identified as one factor that may contribute to yield reduction on tilled fields. Soil compaction could result from construction activities and from maneuvering farm equipment around transmission towers on tilled fields. Subsoiling and disking are adopted mitigation measures for areas where soil compaction would occur because of construction activities.

The impact of transmission towers on harvesting operations consists of the additional time and money expended on maneuvering a harvester around a tower. We recognize that there may be additional time expended on maneuvering harvesters around towers, however, we do not believe this to be a significant environmental impact, considering that economic damages are included in the land acquisition process. Responses to L-204 E, L-243 B, L-330 W15, T-6 D, and T-175 H provide further information.

Comment: Aerial Application - Farmers and aerial applicators are concerned that transmission lines and towers are obstacles and hazards, particularly at night, to aircraft performing aerial application of pesticides, fungicides, defoliants, seed, or fertilizer. Associated concerns are inadequate coverage of fields during aerial application around transmission line and towers, and the additional cost incurred by avoiding these obstacles. Examples of this comment can be found at L-14 A in Volume 2A and T-18 B in Volume 3 of this document.

Response: Aerial Application - We agree that in some cases transmission lines and towers present difficulties to aerial applicators. The response to L-14 A and Section 3.6 of Volume 2A of the Draft EIS/EIR describe some of the possible hazards. We will continue to review methods to increase visibility of conductors and towers.

Aerial applicators familiarize themselves with the terrain and potential hazards where they are scheduled to operate to allow adequate margins of safety between their aircraft and transmission lines and towers. Barring the presence of other obstacles such as telephone poles, distribution lines, trees, etc., and given adequate visibility, aerial applicators typically do fly beneath high voltage transmission lines; they also make cleanup passes around transmission lines in

order to optimize coverage. Aerial applicators do not usually charge farmers for additional time, labor, or fuel costs in the Sacramento Delta area. Farmers are typically charged for the amount of pesticide materials used whether for performing cleanup passes or for spraying fields.

The effectiveness of aerial application coverage depends upon the orientation of the transmission line with respect to field rows or the direction the aerial applicator flies past with respect to the transmission line. The two most common directions are a flight pass perpendicular to the transmission line or parallel to the transmission line. Inadequate coverage can result when aerial applicators need to rise from application altitude in order to gain clearance over a transmission line in an adjacent field. This condition is usually corrected by performing a pass perpendicular to the normal flight direction.

### 3. Bird Collision Hazards

**Comment:** Many comments expressed concern about the potential hazard the transmission line would pose to raptors, waterfowl, and other sensitive bird species in the Butte Valley area, Tulelake/Newell area, along the Pit River, and in the Sacramento Delta area. Examples of this comment can be found at L-117 C and L-157 I in Volume 2A and L-333 Y in Volume 2B of this document.

**Response:** Recent studies conducted on avian mortality in areas of transmission lines do not indicate there are significant biological impacts to most species. Impacts to waterfowl and raptors may be significant in local areas. These are addressed in Section 3.5 of Volume 2A of the Draft EIS/EIR and in the responses to L-117 C, L-157 I, and L-333 Y. The visibility of overhead shield wires is a factor in bird collisions. Most collisions occur when the birds move to avoid the conductor and subsequently do not see the smaller shield wire. Collisions can also occur when visibility is obscured (e.g., night, foul weather). Movements of sensitive raptors up and down the Pit and Sacramento Rivers occur as a result of local flights to and from feeding areas, roosting areas, and nesting sites. Movements of waterfowl and other birds in the Sacramento Delta occur as a result of local migration. Bisecting routes of such movement with overhead transmission lines may result in mortality or injury to birds in flight. Delta waterfowl collision impacts would be significant and difficult to mitigate. In other critical areas, it is possible to mark shield wires to make them more visible. Wildlife management agencies will be consulted concerning the need for such marking.

CALENDAR PAGE	96.40
MINUTE PAGE	1023

VOL. 1 FINAL

#### 4. Use of Public vs. Private Land

**Comment:** Many comments suggest routing the transmission line across public rather than private land. Examples include L-330 M in Volume 2B and T-38 D in Volume 3 of this document.

**Response:** In the Northern Section, approximately 50 percent of the environmentally preferred and Project preferred route is located on public land. The environmental studies and analysis were based on resources and land uses and not on land ownership or jurisdiction. However, routing guidelines for the COTP did emphasize the use of public land where resource impacts are similar and it was practical and feasible to do so. The location of the preferred route reflects the use of public land where resource values were similar. This is described in the responses to L-330 M and T-38 D.

#### 5. Forest Land Impacts

**Comment:** Many comments expressed concern about the routing of the Project over prime timberlands or Timber Production Zones (TPZs). Examples of this comment can be found at L-159 L, L-179 C, and L-295 N in Volume 2A, and SL-121 A in Volume 2B of this document.

**Response:** The lead agencies and Project Participants recognize that timberland areas will be removed from production by the right-of-way. Section 1.1.4 of Volume 1 of this document shows the estimated impact. We have attempted to balance reliability considerations with the forestland impacts and believe an equitable compromise has been achieved with the Project preferred route. By implementing a fuels management and fire response plan to be developed in conjunction with the Forest Service between the existing Intertie and the preferred route, transmission system reliability should not be compromised. In addition, mitigation measures that have been adopted, such as reforestation of prime timberland areas currently supporting brush or non-commercial hardwoods where consultation with the California Department of Forestry and USDA Forest Service indicates the need, and selective clearing methods along the right-of-way, should help to reduce the impacts to forestlands. Section 1.1.5 and the responses to L-295 provide further information on mitigation to be implemented.

#### 6. Transmission System Reliability and Separation

**Comment:** Many commentators questioned the validity of the reliability guidelines established by the Project Participants with regard to protection of the western U. S. interconnected bulk transmission system. Commentors also questioned the need for 5-mile separation in high fire danger areas and 2,000 feet in other areas as a matter of policy and

requested more information concerning the basis for that particular criterion. Examples of this comment can be found at L-3 P, L-306 KK, and L-309 YY in Volume 2A of this document.

**Response:** Western Systems Coordinating Council (WSCC) reliability criteria simply state that utilities shall not do anything that will impact a neighboring utility. The WSCC was founded by the Western utilities after the 1965 blackout in the Northeast as an effort to prevent similar occurrences from happening in the West. It is the firm belief of the utility industry in the WSCC region based on years of operating experience of the interconnected transmission systems, that the location of the third AC Intertie adjacent (or in proximity) to the two existing Intertie lines will severely decrease the reliability of the interconnected transmission system in the western United States. The efforts of the WSCC since the Northwest blackout in 1965 to prevent western wide outages would be negated if the three lines were to be located such that there was no separation. At present, the two existing Intertie lines are the major north-south pathway for electric transmission between the Pacific Northwest and California. Sufficient technology does not exist at this time to prevent a simultaneous three-line outage should all three 500 kV transmission lines be located immediately adjacent to one another; some degree of separation is required. Common-mode outages for 500 kV systems can be human-caused or weather- or fire-related. In forested areas, separation is of concern because of the chance of a forest fire causing a simultaneous outage of all three transmission lines. Separation is important because it increases the probability that electricity could flow down one of the other transmission paths if either the two existing Intertie lines were to become inoperable or if the COTP were out of service. If all three lines were placed adjacent to one another, where a single incident could result in an outage of all three, the reliability of the entire system is reduced. Further discussion of reliability and separation is presented in the responses to L-3 P, L-306 KK, and L-309 YY, and in Appendix A of Volume 3A of the Draft EIS/EIR.

#### 7. Project Economics and Benefits

**Comment:** Many comments expressed concern about the consistency of the COTP economic analysis with the California Energy Commission's Forecasts. Examples of this comment can be found at L-306 EE, L-306 UU, L-306 Z2, and L-307 X in Volume 2A of this document.

**Response:** The forecasted price of Pacific Northwest energy for sale to California in the 1986 Electricity Report falls within the range of the sensitivity cases evaluated in the economic analyses supporting the Draft EIS/EIR for the

COTP. The forecast of statewide demand for electricity presented in the 1986 Electricity Report falls within the range of demand forecasts used in the sensitivity cases evaluated in the Draft EIS/EIR. This is further discussed in Section 1.1 of this document and in the responses to L-306 EE, L-306 UU, L-306 ZZ, and L-307 X.

**Comment:** Many comments expressed concern about the viability of the COTP if there is uncertainty regarding the long-term availability of firm surplus power in the Pacific Northwest. Examples of this comment can be found at L-3 T in Volume 2A, L-320 E in Volume 2B, and T-67 B and T-81 J in Volume 3.

**Response:** Although the current firm power surplus in the Northwest and the possibility that it may be declining demonstrate the prudence of building the COTP on the planned schedule, the benefits of the COTP do not depend on continuation of the current firm power surplus in the Northwest. The COTP will continue to provide firm capacity and nonfirm energy to California even if the firm surpluses in the Northwest cease to exist. These benefits are available (1) from power that is available when river flows are better than critical dry conditions used for planning, (2) due to the fact that California has its highest power demands in the summer whereas the Northwest has its highest demands in the winter, and (3) due to the fact that generating resources added in the Northwest to meet energy load growth will provide ability to meet peak demands in excess of the peak loads in the Northwest. No resources need be built in the Northwest for the purpose of making power available to sell to California. This is also addressed in the responses to L-3 T, L-320 E, and T-67 B, and in Appendix B of Volume 3A of the Draft EIS/EIR.

**Comment:** Comments were received that Northwest prices should be at a higher percentage of the cost of fuel burned in a combustion turbine. Examples of this comment can be found at L-306 WW and L-306 B1 in Volume 2A of this document.

**Response:** The power delivered over the COTP is expected to reduce operation of oil/gas-fired steam plants which have a substantially more efficient operation (lower heat rate) than a combustion turbine. The cost of 60 to 75 percent of the cost of fuel burned in a combustion turbine is equal to approximately 75 to 90 percent of the cost (in cents per kilowatt hour) of gas burned in a gas-fired steam or combined cycle plant.

The Pacific Northwest utilities' price for power sales to California must be based on the value of such purchases to the California utilities. The price of Pacific Northwest energy at prices equal to 75 to 90 percent of the avoided cost of gas steam plant operation (equal to 60 to 70 percent

CALENDAR PAGE	1	FINAL	96.43
MINUTE PAGE		1026	