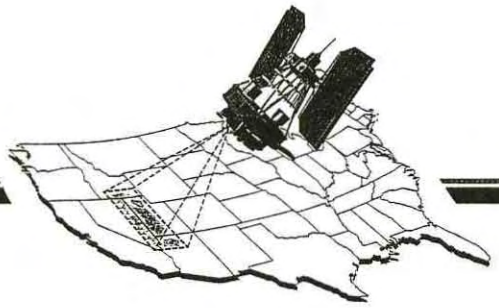


CHAPTER 1
PURPOSE AND NEED FOR ACTION

CHAPTER 1
PURPOSE AND NEED FOR ACTION

INTRODUCTION

High voltage transmission lines have interconnected the states and regions in the West to meet increasing demands and seasonal variations in electric power supply. Within the inland portion of the western United States (U.S.) there are sections of the high voltage transmission system that do not have surplus capacity for additional energy transactions. Congress passed legislation in 1964 that recognized the need for transmission interconnections between states in the Pacific Northwest and states in the Inland Southwest (P.L. 88-552). Later in 1985, the Western Area Power Administration (WAPA) suggested the proposed Southwest Intertie Project (SWIP) corridor as a possible route ("Completing the Pacific Northwest-Southwest Intertie"). In its conclusion, the report said utilities throughout the West recognize that a transmission line built in this corridor would "improve power coordination and overall system reliability, as well as possibilities for more energy transactions which would directly benefit consumers."

The purpose and need of the SWIP is to provide additional transmission capacity and reliability at an economical price between the Northwest and Southwest transmission systems in the western U.S. The seasonal load and resource diversity between electric systems in the North versus those in the South may allow power exchange contracts to replace or defer new resource construction. The additional capacity provided by the SWIP would allow utilities to take advantage of this regional diversity and would promote the efficient utilization of existing power resources.

The SWIP was originally proposed to connect from the existing Midpoint Substation near Shoshone, Idaho, south to a new substation site near Ely, Nevada, then crossing east to a new substation site near the Intermountain Generating Station near Delta, Utah. In early 1990 Idaho Power Company (IPCo) determined that the Utah-Nevada Transmission Project (UNTP) would be fully subscribed and would not be able to provide the transmission capacity for the SWIP to reach the new marketplace substation near Boulder City, Nevada. IPCo decided that the SWIP would have to be extended south from the Ely area in order to meet the purpose and need for the SWIP project to interconnect in the Las Vegas area. In June 1990 the SWIP studies were expanded to include routes from the Ely, Nevada, area to a new substation site northeast of Las Vegas in the Dry Lake Valley. Bureau of Land Management (BLM) determined at that time to retain the Ely, Nevada, to Delta, Utah route alternatives in this draft Environmental Impact Statement (EIS) even though this portion, referred to as the "crosstie", has a separate purpose and need to construct and is not required as part of the north-south transmission segment from Midpoint Substation to Ely, Nevada, to Dry Lake, Nevada.

The crosstie route from Ely, Nevada, to Delta, Utah, would interconnect two electrical utility systems in different geographic areas to establish strategic open marketplace substation

locations and enhance reliability of the interconnected electrical system in the western U.S. The crosstie route was included in this document with the Midpoint to Dry Lake route. Refer to pages 1-4 and 2-31 for additional information on the crosstie route.

The following is a brief description of the project (Chapter 2 provides further detail) followed by a discussion of factors involved in this purpose and need, and a review of planning requirements for the SWIP. All tables are located at the end of the chapter.

IPCo is proposing to construct and operate the SWIP, a high capacity 500,000-volt (500kV) alternating current (AC) transmission line with an initial capacity of 1200 megawatts (MW). The proposed line would extend from IPCo's Midpoint Substation near Shoshone, Idaho, south through Idaho and Nevada to a proposed new substation site approximately 25 miles northeast of Las Vegas, Nevada.

A direct current (DC) system can be an economical alternative to an AC system when a line exceeds 400-500 miles in length with no intermediate substations. The SWIP, however, would provide interconnections to other utilities at intermediate substations and would have the capability to integrate regional generation resources. Such interconnections for a DC system would require construction of expensive converter stations for local AC electricity use.

If approved, IPCo would offer participation, either in ownership rights or nonowner wheeling, to other utilities in the region. IPCo would be the permitting agent for the crosstie portion of the SWIP, but intends to transfer the right-of-way grant to the Los Angeles Department of Water and Power (LADWP), who would construct and operate the facility. This route of approximately 165 miles is also proposed to be constructed from the Ely, Nevada area to the Delta, Utah area. The crosstie route would be rated at 1100 MW.

Typical construction of the transmission line between the Midpoint Substation and Las Vegas would use self-supporting lattice steel structures, self-supporting tubular steel H-frame structures, and steel lattice towers stabilized with guy-wires (refer to Figure 2-2 in Chapter 2). Tower-to-tower spans are anticipated to be approximately 1,000 to 1,500 feet. The towers would range in height from 90 to 160 feet depending on terrain and military airspace considerations, but would average between 120 and 130 feet. IPCo is requesting a 200-foot-wide right-of-way along the route and a separation of 2000 feet between the SWIP and the adjacent high capacity lines that are found in some areas in order to comply with the Western System Coordinating Council (WSCC)[1] reliability and outage criteria (refer to page 2-18). Total mileage of the proposed transmission line is approximately 520 miles.

The proposed line would require an expansion of the Midpoint Substation, a series compensation/switching station near Wells, Nevada, a new substation (and possibly a

[1] The WSCC is an organization of utilities in the Western United States and Canada, and is one of nine regional councils that make up the North American Electric Reliability Council (NERC). The principal function of NERC is to promote the reliability of the North American electrical system, as well as to provide a forum for the exchange of information and knowledge. On the regional level, the WSCC provides the organizational basis for efficient design and operation of the existing electrical system, as well as a mechanism to insure the future system continues to be reliable and efficient.

second) near Ely, Nevada, a possible series compensation station near Delamar Valley (halfway between Ely and Las Vegas, Nevada), and a new substation near Las Vegas. Expansion of an existing substation, construction of new substations, and series compensation/switching stations would be needed to allow full line capacity and provide control of the transmission system. A microwave system would be constructed paralleling the transmission system to remotely transmit and receive data for protection of the transmission line, and to operate the substations and the switching stations. Of the possible microwave station alternatives, only one would require a new electrical distribution line (less than two miles).

PURPOSE AND NEED

Southwest Intertie Project - Midpoint Substation to Dry Lake

The need for increased power exchanges in the western U.S. is particularly evident between the Northwest and the Southwest. Two main avenues of transmission are now used, the Pacific Interties in the West and various smaller lines around the east side of the Great Salt Lake. The Pacific Interties connect the Pacific Northwest with California. The smaller lines on the east connect the electrical systems of Utah and Colorado to the Southwest states of Arizona and New Mexico. These major paths are presently unable to accommodate the full need for electric power transfers between the northern and southern portions of the western transmission system. Figure 1-1 illustrates the existing regional transmission line network in the western U.S.

Use of the Pacific Interties is governed by Bonneville Power Authority's (BPA) Long Term Intertie Access Policy. This policy allocates use of the interties when demand for those facilities exceeds their capacity. Temporary or short-term, nonfirm access to the interties is based on BPA's determination that capacity is available, and is allocated in proportion to demand. Electric power transmitted on the lines is generally consumed by California utilities with little extra available for transfer to inland southwest utilities.

Use of the eastern transmission path for north-south transfers has historically been difficult. Most of the lines were built to serve specific, localized needs rather than accommodate regional transfers of power. A good example is the Intermountain to Adelanto 500kV DC line that transmits power from the Intermountain Generating Station in Utah to electrical utilities in Southern California. Although stretching from Utah to California, capacity was planned to meet specific needs in Southern California and is limited for bulk north-south transfers of power.

The proposed addition of the SWIP would allow IPCo and other utilities to assist in meeting regional electricity needs by providing economic electricity to consumers and by increasing the overall capacity and reliability of the interconnected electric system between the Northwest and Southwest.

The SWIP would fulfill the major needs as outlined below with further explanation in the following pages.

- Provide for increased power transfer capability between the Northwest and Southwest
- Increase the capacity and reliability of the overall regional power system
- Enhance competition and economic efficiency of the power market
- Establish an "open-marketplace" power transfer location
- Provide power transfer services to nonowners through wheeling
- Allow for additional short-term or spot market purchases and sales of electric power
- Increase long-term, firm commitments for regional purchases and sales of electric power
- Defer new generation facilities and diversify fuel resources

Crosstie Route - Ely, Nevada, to Delta, Utah

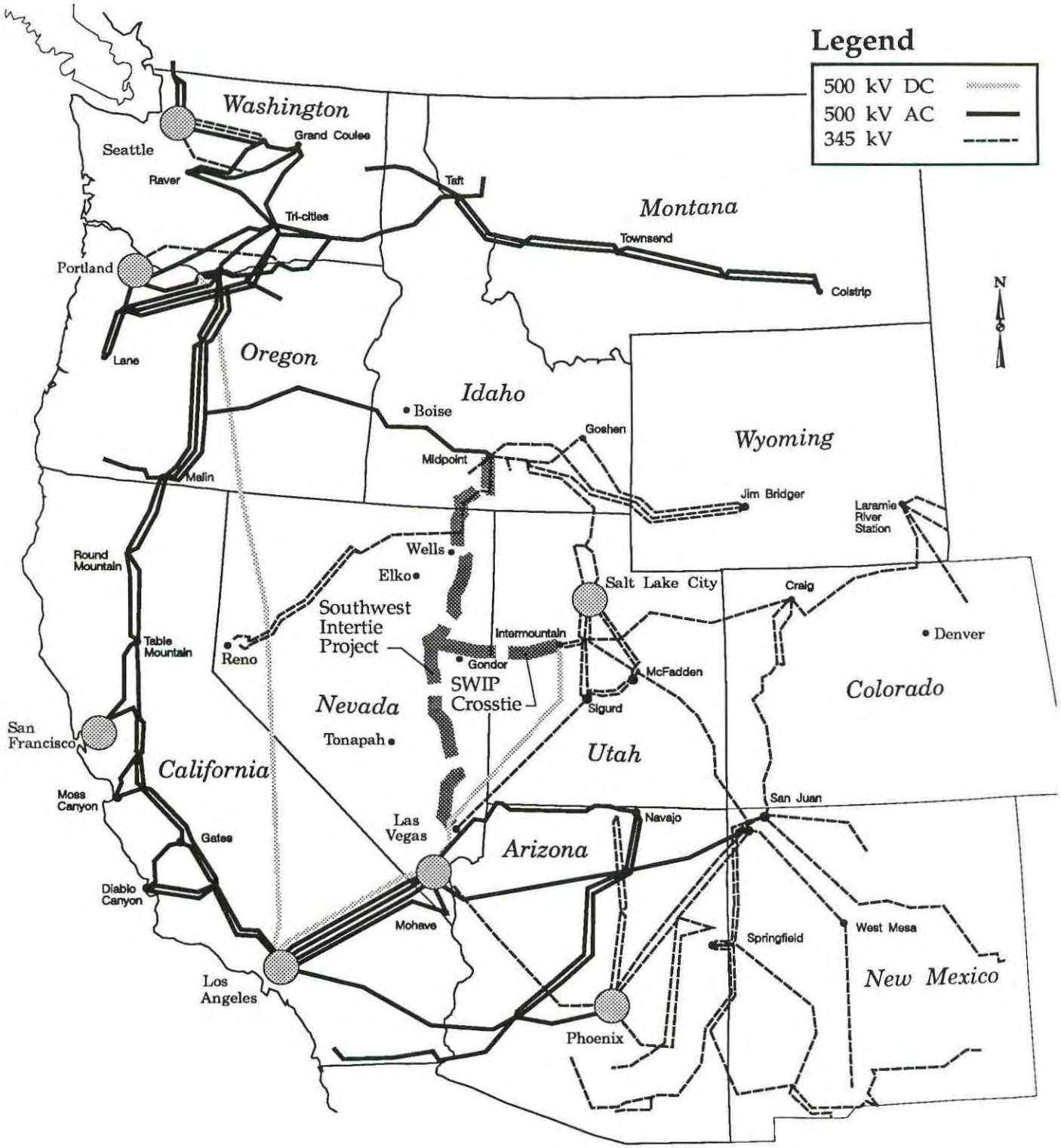
The proposed Utah Nevada Transmission Project (UNTP) would reinforce the interconnected system for Nevada, Utah, Arizona, and Southern California and would be fully subscribed through ownership shares upon completion. The UNTP would provide the initial transmission capacity for the proposed White Pine Power Project (WPPP), possibly support other generation projects, and meet the demand of the UNTP participants for 1100 MW of transferred electricity.

The crosstie route, when interconnected with the Delta-Marketplace portion of the UNTP, and the SWIP would significantly contribute toward satisfying a regional reliability need and enhancement of the electrical grid in the western U.S.

It would create an additional bidirectional transfer path between the Pacific Northwest and the intermountain regions of the West. Currently, these regions are interconnected only by lower voltage transmission lines with limited electric load-carrying capacity.

It would create an additional bidirectional transfer path between the intermountain region and southern Nevada. This is an area that is rapidly growing and is in need of additional energy and capacity resources to serve its native load.

The UNTP Phase I (Delta to Marketplace line) and SWIP (Midpoint to Ely to Las Vegas line), although separate and independent projects, can each improve the other's reliability if the crosstie (Delta to Ely line) is built. In the event of an unscheduled outage on the SWIP or the UNTP, the remaining in-service line would accommodate a portion of the pre-outage load. In addition, some of the power would also flow down other connected AC lines in the area.



Source: Western Systems Coordinating Council Map of Principle Transmission Lines, Jan. 1, 1992

Note: Not to scale

Regional Transmission Network

Figure 1-1

The remaining lines in the immediate area, however, are designed to operate at 345kV which has about 50 percent of the capacity of a 500kV line.

The crosstie route would allow for the bidirectional transfer of bulk power bought, sold, and/or exchanged in the marketplace between utilities situated in Utah, southern Nevada, and Idaho as regional demand and seasonal variations in electrical demand and supply occur.

The crosstie would improve the reliability of the existing Intermountain Generating Station and the interconnected electrical system by:

- increasing the electrical strength and capacity of the system
- reducing the potential for and the severity of the electrical disturbances that can be caused by a variety of events (e.g., storms, earthquakes, etc.).

Western Energy Demand

Electricity consumption in the Western Systems Coordinating Council (WSCC) area is expected to increase approximately 19 percent from 1990 to 2000 according to the North American Electric Reliability Council (NERC 1991). An increasing demand for power is indicated by the return of energy-intensive manufacturing in the Pacific Northwest (Egan 1989), and the setting of record peak demands in 1988 and 1989 in Arizona, Idaho, Nevada, Washington, Oregon, Montana, and Utah. The 1990-2000 annual peak demand growth rate for the entire western region is projected to be 1.5 percent with an annual net energy for load growth rate of 1.8 percent (WSCC 1991).

Northwest Demand Forecasts

Forecasted peak electrical demand in the Northwest Power Pool (power producers in northern Nevada, Utah, Oregon, Washington, Montana, Idaho, western Wyoming, and the Canadian provinces of British Columbia and Alberta) shows an average annual increase of 0.6 percent, and net energy requirement is forecasted to grow 1.7 percent from 1990 to 2000. These estimates are based on net annual electrical energy consumption including transmission and distribution losses (WSCC 1991). Forecast data for seven electrical utility companies in the Northwest of available electric supply versus annual electric demand show a power deficit occurring in 1994-95, with the deficit increasing every year through 1998 (Intercompany Pool 1990). The deficit projected in the Northwest is based on critical water planning.

Reports from individual utilities appear to substantiate this predicted deficit. Using existing resources, Portland General Electric's power surplus is expected to be exhausted by 1992 (PGE 1990) and Pacific Power & Light/Utah Power & Light predict the need for new power sources by 1997 (PPL/UPL 1989). IPCo may need additional resources by 2002 under its

strong economic and load growth scenario (IPCo Resource Plan 1991). Puget Sound Power and Light has issued requests for proposals (RFP) to supply new power capacity by 1993, while the BPA is requesting southern California utilities, who purchase power in the summer, to send power to the Northwest during the winter to meet anticipated shortages.

Some existing hydro resources in the northwest U.S. will be lost when the Canadian Entitlement Purchase Agreement expires. This agreement states that a portion of the power produced by the Northwest hydro facilities belongs to Canada. This share of Canadian energy (1400 MW of capacity) would revert back to British Columbia during the period, 1998-2003. BC Hydro of Western Canada has indicated a desire to "repatriate" the entitlement to meet Canada's future domestic loads. BC Hydro is seeking new sources of power that could be exported to the U.S., but these changes could significantly affect power supplies in the Northwest (Washington State Energy Office 1989).

In the Northwest, demand is generally winter peaking because of the cold weather, while the region's substantial hydro (water) power resources peak in the spring. Regional firm electricity loads are predicted to increase from 19,608 MW in 1991 to 24,254 MW in 2011. In addition, the region currently has 674 MW of short-term firm energy available for sale (Pacific Northwest Utility Coordinating Committee Regional Forecast, 1991). Thus, seasonal exchanges with summer peaking areas provide a market opportunity for the SWIP. Within the Northwest Power Pool (NPP), the winter peak load could exceed the summer peak load by almost 8500 MW in 1992 (NERC 1991). Currently the NPP uses critical water conditions for resource planning. This practice leaves significant surplus generating capacity available in median water years. Buying or exchanging resources from outside of the Northwest during low water years can help avoid or defer construction of new northwest resources, and selling surpluses during high water years can benefit regional utilities through increased revenues and less reliance on higher cost thermal plants. Achieving such benefits would require the sale and purchase of energy and capacity among the northwest utilities and other utilities with complimentary resource bases outside the Northwest.

In the northwest region, IPCo serves electrical consumers in southern Idaho, eastern Oregon and northern Nevada. IPCo currently has about 2500 MW of total peak electrical load and 2600 MW of maximum generation capacity, two thirds of which is hydropower, about one third of which is thermal, and one to three percent of which comes from cogeneration resources (IPCo 1991). The service area peak demand is approximately balanced between winter and summer use with a high summer energy load due to substantial irrigation pumping. During average to better water years, surplus nonfirm energy is typically available. The difference in timing between the hydro resource peak and the summer load peak means IPCo can benefit from exchanges with other areas, particularly southwestern utilities with different resource mixes.

Southwest Demand Forecasts

The Southwest utilities of California, Nevada, Arizona and New Mexico, have a summer peak demand and have the seasonal diversity in energy supply to export electricity to the

North. Southwest utilities also have a broader mix of nuclear, coal, and other energy sources that may help provide diversity to the Northwest.

In a 1990 report, the California Energy Commission projects annual electricity demand growth will be 2.7 percent statewide over the next twenty years. Population increases are expected to account for 75 percent or more of future increases, while increasing per capita energy use accounts for the remainder. The latter includes increased electrical use by the commercial sector that has outpaced recent expectations. Growth in this sector has included the use of more energy-intensive equipment in existing businesses and growth significant to varying building types (California Energy Commission 1990).

The California Energy Commission's analysis of system capacity and energy requirements indicates that statewide existing and committed resources are sufficient to meet electricity needs until 1994. The addition of planned, nondeferrable power supply resources (defined as future cost-effective resources that should be built and should not be replaced by other resource additions) and pending resource additions (supply resources that are planned but do not yet have local, state, or federal regulatory approval) extend the first year of the deficit to 2001. An additional 10,800 MW are necessary to meet needs in 2001 (California Energy Commission 1990).

Out-of-state power purchases have contributed significantly to California's energy supplies for many years and are expected to continue to do so. In 1987, 35 percent of the state's power was provided by imports from the Pacific Northwest, the Desert Southwest (Arizona and New Mexico), Canada, and Mexico. The California Energy Commission reports that the various types of electric power from out-of-state sources is supplied at reasonable cost, and the state's energy needs are compatible with other regions. For example, California's peak energy demands occur during the summer, while the Northwest region's peak period occurs during the winter, which allows California and the Northwest to exchange power at different times of the year without significantly affecting their respective generation capacities. Expansion of transmission capacity, (i.e. the SWIP), would encourage intra- and inter-state electric power competition (California Energy Commission 1990).

The LADWP resource plan is designed to provide an adequate power supply to meet projected electric load growth reliably and economically, provide a sufficient margin to maintain reliability, and to reduce dependence on oil and natural gas as fuels for the generation of electricity. LADWP's resource plan including requests for proposal (RFPs) in 1996 for 100 MW and 600 MW in 2000. A system deficit could be as large as 1500 MW by 2000 without additional resources (CEC 1990).

Nevada has experienced overall population and economic growth, with above-average growth spurts in some economic sectors since 1983-1984. Growth in demand within Sierra Pacific Power Company's (SPPC) service area is forecast by the utility to be 4.5 percent per year through 1994, and 1.6 percent per year from 1994 to 2008. Sharp increases in expected demand are associated with expansion in actual and planned construction of mines in northern Nevada (SPPC 2/1989). The Nevada Power Company (NPC) has experienced peak demand growth from 1983 to 1990 of 7.4 percent, and predicts a moderating 3.0 percent annual growth over the next 20 years depending of the application of demand site management programs. Recent growth in demand has been attributed largely to the rapid

expansion of the hotel-resort industry in southern Nevada, and business relocations to the Las Vegas area (NPC 1991).

Electricity resource plans are prepared by utilities in Nevada every three years. These plans include data on forecasted electric need and available or planned generation capacity. The plans (prior to being finalized) are reviewed by the Nevada Public Service Commission and the State Office of Consumer Advocacy. The resource plan for SPPC shows that power need would increase through 2008/2009, and would have to be met through imported power from other states and capacity additions (SPPC 1989). Under a base case, the 1991 Resource Plan for NPC indicates a total load requirement of just over 2500 MW in 1990, increasing steadily to approximately 5100 MW in 2010. To meet critical resource needs from 1994 to 1999, the system would rely primarily on peaking purchases (NPC 1991).

The Desert Southwest area of Arizona and New Mexico is projected by the WSCC to have a 10-year annual peak demand growth rate from 1990 through 2000 of 2.1 percent (WSCC 1991). Although load growth in the area has averaged 6 percent per year historically, the average annual growth rate for the next decade is projected to be almost 3 percent. This area's highest peak energy use occurs in the summer with an excellent fuel diversity of 22 percent gas- and oil-fired, 46 percent coal-fired, with the remaining percentage a mixture of nuclear, cogeneration, geothermal etc. This provides a good base for developing large exchange transactions with the winter peaking northern areas. Additionally, annual winter peak demand growth is expected to exceed summer peak demand growth in the region over the forecast horizon. This indicates more winter need (NERC 1991).

Capacity and Reliability

The capability for transmitting power to meet changes in electricity demand and supply on a regional or seasonal basis is presently limited by the capacity of available transmission facilities. The SWIP is needed to strengthen the existing transmission system by providing for additional capacity, and allowing for more efficient use of present generating resources between the Northwest and the Southwest on a regional scale. Efficiency would increase by using the different marketing requirements or characteristics of fuel mix, load diversity, and resource development potential discussed later in this document.

Other primary reasons to interconnect transmission systems through the SWIP are to improve system reliability and minimize the effects of generator and transmission failure. It is not unusual for operating units to break down or be out of service for maintenance. A transmission line can also experience outages and need to be disconnected from the rest of the system. It is also common for several transmission lines to be out of service for maintenance at the same time.

The total electrical strength of all ties between the northern and southern portions of the transmission system in the West would significantly increase with the construction of the SWIP. This would reduce the potential for and the severity of electrical disturbances during operating emergencies. Reliability would be increased by providing an additional transmission path between Idaho, Nevada, and Utah. The geographical and electrical

separation between existing north-south transmission facilities and the SWIP would be substantial. This separation would increase system reliability by reducing the portion of all major north-south ties that can be disrupted by a single event, such as an earthquake, storm or vandalism. For example, because both transmission lines would have a similar regional purpose (e.g., to transfer bulk regional power), a separation between the UNTP and the SWIP of 2000 feet is requested, where possible (refer to page 2-18). Separation requirements of these projects are set by the Western System Coordinating Council (WSCC), an organization of utilities throughout the western United States which establishes reliability criteria and the rating of the line (e.g., megawatts of transfer capability).

Reliability also relates to remedial action schemes that are used to minimize the impact of sudden and unexpected loss of critical transmission lines (due to lightning strikes, accidents, etc.). Utilities in the West rely heavily on these complex schemes because of the limited transfer capacity between the north and south subsystems. Unfortunately, because of their complexity and the difficulties associated with fully testing them, the reliability and security of these systems have been a problem. Remedial action schemes have failed on a number of occasions resulting in "black or brown outs" to the consumer, following the loss of heavily loaded transmission lines. In addition, inadvertent operation of some remedial action schemes has caused uncontrolled transmission line outages. Construction of the proposed project would reduce reliance on existing remedial action schemes and may even eliminate several of the more complex schemes. This would improve the overall reliability of the interconnected western transmission system.

Seasonal Exchanges

Firm power purchase and exchange agreements enable IPCo to use power produced by others to meet a portion of its seasonal power supply requirements. Under the provisions of a contract, which would expire in 1997, 108,000 megawatt-hours are exchanged annually with Montana Power Company, with power delivered by IPCo during November, December, January, and February, and received in return during July, August, and September. By a similar agreement ending in 1993, another 108,000 megawatt-hours are exchanged annually with Seattle City Power & Light.

Seasonal power exchanges, or the seasonal purchase and sale of power, are expected to continue beyond 1994 to maximize the annual load carrying capability of existing and future resources. A seasonal exchange, or equivalent purchase and sale, of approximately 370,000 megawatt-hours annually is included in IPCo's base case resource plan starting in 1994. Seasonal exchanges with the current electrical system are not sufficient to meet the stated purpose and need for the project.

Seasonal Diversity

Seasonal diversity is a measure of the seasonal difference in electrical use between two separate regions of the country. For example, electrical demand and consumption in the

inland Desert Southwest is greatest in the summer, as opposed to the Pacific Northwest, where it is greatest in the winter. Based on data published in the WSCC 1990 Summary of Estimated Loads and Resources Report, comparing the three-month average of winter and summer peak loads in the Northwest Power Pool and the Arizona-New Mexico area, almost 3000 MW of seasonal diversity exists. This means that if the two areas were strongly interconnected with transmission, the total resource required to serve the combined load would be almost 3000 MW less than the total resources required to serve the areas individually. However, these two regions of the West are not strongly interconnected, and the existing transmission system between them provides the capacity to exchange 500 to 1000 MW. As a result, there is a minimum of 2000 MW of seasonal exchange potential between the Desert Southwest and the Pacific Northwest that cannot be accommodated by the existing transmission system.

The SWIP, if constructed, would provide participating utilities with the opportunity to exchange both off-peak and peak energy. Exchanged power could flow north in the winter and south in the summer, and enable utilities to defer the construction of new capacity to meet peak demand. Preliminary studies have shown that, in order to serve new load, the cost of the SWIP is less than the cost of new capacity that seasonal exchanges can defer. Hence the SWIP provides a cost effective alternative to the construction of new generating facilities by improving the operational efficiency of the interconnected western electrical system.

Competition and Economic Efficiency

Increased transmission access would create a more competitive market for regional utilities and reduce costs for the eventual retail customer. Additional north-south bulk transmission capacity would relieve limitations and constraints in the existing transmission system as discussed earlier and foster a more active and economically efficient market for the sale and exchange of electric power.

Most state public utility commissions in the West (Nevada, California, Idaho, Utah, Washington, and Oregon) require public utilities to acquire needed resources at the lowest cost consistent with environmental constraints giving full consideration to all available resource options. Such least-cost planning will often lead utilities to purchase power instead of building new generation resources, making extensive use of transmission facilities necessary to carry least-cost power from distant production facilities to load centers.

Related to competition is the short-term and long-term access issues discussed in this purpose and need. The Federal Energy Regulatory Commission (FERC) encourages short-term transmission services at flexible prices to complement a competitive power market. It also maintains that any utility must be able to obtain long-term, firm transmission service for the power market to be competitive.

Open Marketplace

The SWIP would provide firm transmission access to and from an "open marketplace" substation near Las Vegas where northern and southern participants may conduct mutually beneficial commercial power transactions. This location would give individual utilities in the Northwest and Southwest access to an "open marketplace", where commerce can be conducted with fewer restraints of ownership. The open marketplace is a new concept where buyers, sellers, and wheeling utilities are part of a coordinated group that allows them to transact business with each other without burdensome wheeling charges, access policies or other barriers to trade. Power transactions could include energy and capacity purchases, sales, exchanges, reserve sharing, unit maintenance coordination, standby charges, and scheduling charges (FERC 1989).

The new substation in the Dry Lake area would be the southern terminus of the SWIP. In 1990 BLM asked IPCo to help coordinate the transmission needs of utility companies with new transmission facilities planned in southern Nevada, particularly those needing transmission access to the McCullough Substation area located south of Boulder City, Nevada. Subsequent discussions with NPC and other utilities resulted in the Marketplace-Allen Transmission Project (MAT) project being proposed by Nevada Power Company. This approximately 53 mile project would connect the new SWIP substation in the Dry Lake area to a new marketplace substation in the McCullough Substation area. Two high capacity 500kV transmission lines would connect the two substations of the "open marketplace". The combined capacity of over 3000 megawatts would allow utilities to interconnect at either substation and conduct transactions.

The SWIP also proposes to establish an "open marketplace" substation in the Ely, Nevada area to conduct similar power transactions as those described for the Las Vegas area. The crosstie route from the Ely, Nevada area to the Delta, Utah area would also interconnect into this "open marketplace" substation.

FERC is encouraging such innovative concepts as the open marketplace to meet the transmission access challenge without government interference. This approach is also likely to produce more flexibility in the government policies that are adopted (FERC 1989).

Wheeling

Wheeling is the transfer of power from a seller to a buyer over the transmission facilities of a third party. In most cases, wheeling requires a contract with a third party to allow the use of their transmission systems to transmit electricity from the buyer to the seller. Additional transmission capacity between the Northwest and the Southwest would allow participants in the SWIP to transmit power for other utilities, including nonparticipants, as well as enhancing system reliability. This can also provide economic benefits to participants and their retail customers in the form of transmission service revenues. FERC recommends flexible contractual agreements to deal with wheeling arrangements. The SWIP would provide wheeling access.

Economy Purchases and Sales

Economy purchases and sales are short-term, nonfirm transactions that allow the purchasing utility to substitute lower cost energy for displacement of its own higher cost fuel resources. These transactions are scheduled hourly, daily, weekly, or longer. For example, one utility may be generating electricity at a lower cost than its neighbor because it is burning coal instead of the higher priced oil its neighbor is using. Utilities buy and sell electricity in the short-term market to reduce their production costs, which is beneficial to both the utility and its rate-payers.

Utilities attempt to control production costs by reducing the risks of fuel uncertainty through diversification of fuels. Access to surplus northwest hydropower may reduce the risk of uncertain future oil and gas prices for southwest generation. Access to surplus southwest thermal generation could provide northwest utilities with additional resource flexibility during low water years.

Economy may also be gained by short-term transactions for seasonal or daily resource energy exchanges, required power for reserve capacity and emergency power, and flexibility provided in scheduling generator maintenance. California, for instance, must be able to purchase power on the short-term market to avoid dependency on more expensive oil and gas resources.

Long-term Purchases and Sales

In addition to the short-term market, there are long-term firm or stable energy interchange arrangements that may last for months or years. A firm purchase ensures the availability of electricity to meet a buyer's reliability needs. Such transactions serve to optimize or defer plant construction among utilities and further reduce or stabilize costs to customers. Development of new resources requires lengthy lead time periods and forces a utility to accept a set level of energy. A long-term contract allows a utility the flexibility of purchasing an amount of electricity that more closely meets the needs of a utility. Purchasing during the lead times or selling after the acquisition of new resources helps match resources to load and reduces overall cost.

Fuel Resource Diversity

Uncertain oil and gas prices are driving utilities, especially in California, to diversify their use of various fuel resources to generate electrical power. The Powerplant and Industrial Fuel Use Act (PIFUA) of 1978 discourages the use of fuel oil and gas for generating electricity. A significant portion of the approximately 4900 MW total oil- and gas-generated resources available to Southern California Public Power Authority (SCPPA) members could be supplemented by hydropower, coal, nuclear, and other generation resources.

Utilities are also required to produce periodic resource plans to meet future electricity demands. IPCo considers all available resource options and receives regular public input through a Technical Advisory Panel. It then selects reliable options that meet forecast demands at the lowest cost and least environmental impact. Transmission lines offer a feasible alternative to building new resources. A utility can avoid the financial risks associated with the large expense of building new generating facilities, keeping costs down by not constructing new plants and purchasing less expensive energy for its customers.

Lower-cost, nonfirm surplus energy from IPCo or other utilities in the Northwest could permit California and/or southwest utilities to:

- displace a portion of the high-priced oil and natural gas-fired generation
- supply a portion of the project peak load demand energy requirement
- provide for the retirement of obsolete, less efficient, oil-fired generating units
- defer construction of new generating facilities and diversify fuel resources

Access to surplus Southwest thermal generation could provide Northwest utilities with additional resource flexibility during low water years.

SUMMARY

Fulfilling the growing demand for adequate supplies of reliable economical electricity in the western regional system requires a strategy that uses a variety of energy resources that can function quickly and compatibly in a flexible transmission system. As electricity demands rise and costs of building new power plants increase, the ability to exchange power between regions in the West becomes more significant. The seasonal load and resource diversity between electric systems in the North versus those in the South may allow power exchange contracts to replace or defer new resource construction.

PLANNING REQUIREMENTS, ENVIRONMENTAL REVIEW AND LICENSING

Federal regulatory agencies have discretionary authority over the sale of power and the selection and design of new or upgraded transmission facilities. Their review considers the need for power, the pricing rate of power sales and transmission systems, and the environmental consequences of new transmission systems and corridors.

This document is being prepared in compliance with federal guidelines including National Environmental Policy Act (NEPA) and the Council of Environmental Quality Implementation Procedures 40 Code of Federal Regulations (CFR) 1500-1508, criteria developed to guide the plan amendment process in designating right-of-way corridors on Bureau of Land

Management (BLM) lands (43 CFR 2806.2), BLM planning and amendment regulations found in 43 CFR 1600, and the planning and amendment process outlined for Forest Service (FS) lands (36 CFR 219.10 and Forest Service Manual 1920 Interim Directive No. 12). These criteria help set the guidelines and standards for inventory of environmental resource data, assessment of project effects and impacts, selection of routing alternatives, and the BLM and FS plan amendment process. Additional legal guidance for BLM to consolidate utility corridors to the extent practicable is found in the Federal Land Policy and Management Act of 1976 (PL 94-579 Section 503).

BLM would have the most lands affected if the SWIP is constructed and was selected as the federal lead agency to prepare this Environmental Impact Statement. The Forest Service, Bureau of Reclamation, National Park Service, and the Bureau of Indian Affairs would have lands affected by various routing alternatives and are federal cooperating agencies during the EIS process. The federal lead agency, in consultation with the federal cooperating agencies, will select a preferred alternative as outlined in Chapter 2 of this document. After reviewing public comments on the DEIS/DPA, the Idaho State Director will file the FEIS and proposed plan amendment with the Environmental Protection Agency (EPA).

The environmental planning, consultation, and impact assessment processes have been integrated to comply with all applicable federal, state, and local regulations. Table 1-1 outlines the major authorizing actions required for the proposed transmission line to comply with existing law and regulation.

TABLES

TABLE 1-1

Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
FEDERAL				
National Environmental Policy Act (NEPA) Compliance	Granting of ROW Over Land Under Federal Jurisdiction for Implementation of Project	Lead Agencies - BLM; Cooperating Agencies	EIS and Record of Decision	NEPA, Council of Environmental Quality (CEQ). 40 CFR Parts 1500-1508
Right-of-Way (ROW) Over Land Under Federal Management	Construction, Operation, and Abandonment	Bureau of Land Management (BLM)	Grant of ROW and Temporary Use Permit	Federal Land Policy and Management Act of 1976 (P.L. 94-579) USC 1761-1771 and 43 CFR 2800
		Bureau of Indian Affairs	Grant of ROW over Indian Lands	25 CFR 169
		Forest Service (FS)	Special Use Authorization Permit, or Easement	36 CFR 251
		Army Corps of Engineers (COE)	General Easement Required for Installation on COE/Military Land	10 USC 2668, 2669 43 USC 961
		National Park Services (NPS) Lake Mead National Recreation Area (LMNRA)	Authorization to Cross LMNRA Lands	Title 18 USC, 36 CFR 14

Table 1-1 (continued)
Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
FEDERAL (cont.)				
		Fish and Wildlife Service (FWS)	Special Use Permit for Crossing a National Wildlife Refuge	50 CFR 25
		National Park Service	Review of Transmission Line Corridor, to Identify Conflicts with Recreational area Reserved with Monies from the Land and Water Conservation Fund Act	Land and Water Conservation Fund Act P.L. 88-578
	Construction, operation and abandonment of transmission lines across or within highway ROWs	Federal Highway Administration	Permits to cross Federal Aid Highway. Compliance with Section 4 (f) Department of Transportation Act	23 CFR 1.23 and 1.27 and 23 USC Sections 116, 123, 315; (23 CFR Part 645 Subpart B), 23 CFR 771
	Construction Across Water Resources	COE	General Easement	10 USC 2668, 2669
	Streams and Rivers			40 USC 961
	Discharge of Dredge and Fill Material	COE	404 Permit (Individual or Nationwide)	Clean Water Act
	Placement of Structures and Work in Navigable Waters	COE	Section 10 Permit	River and Harbors Act

Table 1-1 (continued)
Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
FEDERAL (cont.)				
	Protection to all Rivers Included in the National Wild and Scenic Rivers Systems	All Federal Agencies	Review by Permitting Agencies	Wild Scenic Rivers Act P.L. 90-542 43 CFR 83.50
Biological Resources	Grant of ROW by Federal Land Management Agency	FWS	Endangered Species Act Compliance by Federal Land Management Agency and Lead Agency	Endangered Species Act, Section 7
	Protection of Migratory Birds		Migratory Bird Treaty Act	16 USC 703-711 50 CFR Ch 1 FR Vol. 40, No. 231
	Grant of ROW by Federal Land Management Agency Involving Aquatic Habitats	Lead Federal Agency	Fish and Wildlife Coordination Act Compliance by Federal Land Management Agency and Lead Agency	Fish and Wildlife Coordination Act
Cultural Resources	Grant of Right-of-Way by Federal Land Management Agency	BLM, FS, State Historic Preservation Officers Advisory Council on Historic Preservation	National Historic Preservation Act Compliance by Federal Land Management Agency and Lead Agency	National Historic Preservation Act of 1966, 36 CFR Part 800 16 USC 47
		All	Protection and Preservation of Native American Religious and Cultural Rights and Practices	American Indian Religious Freedom Act 42 USC 1996

Table 1-1 (continued)
Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
FEDERAL (cont.)				
Cultural Resources (cont.)	Disturbance of graves and associated artifacts	All	Consultation with Native American groups	Native American Grave Protection Act of 1990
		All	Permit for study Historical, Archaeological and Paleontology resources	Antiquities Act of 1906 16 U.S. C. Section 432-433
			Permits to excavate and remove archaeological resources on public and Forest Service lands.	Archaeological Resources Protection Act of 1979 16 USC Sections 470aa-470ii (43 CFR Part 7)
	Protection to segments, sites, and features related to national trails		National Trails System Act	P.L. 90-543 16 USC 1241-1249
Air Traffic	Notice on Location of Towers May Be Required	Federal Aviation Administration	A "No-hazard Declaration" required if structure is more than 200 feet in height	49 USC 1501 14 CFR 77
			Air Space Permit for air space construction clearance	Section 1101 of FAA Act of 1958, 49 USC Section 1501 and (14 CFR Part 77)
Rate Regulation	Sales for Resale and Transmission Services	FERC	Federal Power Act Compliance by Power Seller	Federal Power Act Section 205

Table 1-1 (continued)
Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
State and Local				
NEVADA				
ROW Encroachment	Encroachment into State Roadway ROW	Nevada Department of Transportation	ROW Occupancy Permit	Nevada Revised Statutes (NRS) 408.423
Ground Surface Disturbance	Project Construction	Division of Environmental Protection (NDEP)	Registration Certificate	Nevada Administration Code (NAC) 445.704
	Construction of Electric Transmission	Public Service Commission	Authority to Construct and Certificate of Need	NRS 704.330, 704.820, 704,701
Natural and Cultural Resources	Crossing State Lands	Division of State Lands	Easement onto State Lands	NRS 321.001
Air Quality	Construction and Operation	NDEP	Authority to Construct Permit to Operate	NRS 445
Rare and Endangered Plant Species	Modification of Habitat	Division of Forestry	Identification of Plant Species	
Rare and Endangered Animal Species	Protection and Management of Rare and Endangered Species	Nevada Department of Wildlife	Authority to Protect and Manage	NRS 501 NAC 503
T & E Species	Modification of Habitat	Nevada Department of Wildlife	Special Permit	NAC 5-4.510-.550
Clark County	Construction and Operation	Clark County Planning	Conditional Use Permit (payment of impact fees for desert tortoise)	Clark County Zoning Ordinance

Table 1-1 (continued)
Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
State and Local (cont.)				
UTAH				
Permitting Process	Proposed Transmission Line Facility	Resource Development Coordinating Committee	Expedites Review of Permitting Process for all State Agencies	UCA 63-28a-5(4)
ROW Encroachment	Encroachment on, through or over State lands	Division of State Lands and Forestry	Application Approval	UCA 65-2-1 et.seq; State of Utah Rules and Regulations Governing the Issuance of Mineral Leases
Ground Surface Disturbance	Project Construction	Public Service Commission	Certificate of Public Convenience and Necessity	UCA 54-4-25
			Approve Construction Contracts	UCA 54-4-25 UAR 750-401
	Crossing State Lands	Division of State Lands and Forestry	Easement onto State Lands. Bond may be required.	UCA 65A-7-12, R632-40-1, 2, and 7
Cultural, Paleontological, and Biological Resources	Crossing State Lands	Division of State Lands and Forestry	Provide a cultural and/or paleontological and/or biological survey and submit procedures for reasonable mitigation actions	R 632-40-4

Table 1-1 (continued)
Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
State and Local (cont.)				
Historical and Cultural Review	Impact on Historical Sites	Division of State History	Notification of Planning Stage and before Construction	UCA 63-18-37
Encroachment on State Park Lands	Utility Easement on State Park Lands	Division of Parks and Recreation	Agreement for Granting and Maintenance of Easements or Rights-of-Way across Park Lands	UCA 63-11-10.3
Air Quality	Construction and Operation	Air Conservation Committee	Air Variance Request through Notice of Intent Letter	UCA 26-13-1
Water Resources	Construction and Operation	Water Pollution Committee	Permit to Operate	UCA 26-11-8 to 26-11-10 and 26-11-16; Code of Wastewater Disposal
Wildlife	Modification of Habitat	Division of Wildlife Resources	Easement for Use of State Wildlife Resource lands	UCA 23-14-1 and 3; 23-21-1
Millard County	Construction and Operation	County Planning, Building and Zoning Commission	Bond for Protection of Roads. Use Permit	Millard County Zoning Ordinances Section 18
Juab County	Construction and Operation	County Commissioners	Conditional Use Permit based on Application and Public Hearing	Juab County Zoning Ordinance
IDAHO				
ROW Encroachment	Encroachment on, through or over State Lands	Department of State Lands	Easement Across State Lands Easement for River Crossings. Temporary Construction Permit	IC Title 58 Chapter 6

Table 1-1 (continued)
Summary of Potential Major Permits Required for Transmission Line Construction and Operation

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit Approval, or Review	Relevant Legislation
State and Local (cont.)				
Ground Surface Disturbance	Construction of Electric Transmission	Public Utilities Commission	Amend Certificate of Public Convenience and Necessity	IC 61-5-26
Water Resources	Crossing Rivers or Streams	Department of Water Resources	Stream Channel Alternation Permit	IC Title 42 Chapter 38
Archaeological Paleontological and Historical Sites	Crossing State Lands	Idaho Historic Society	Permit if crossing archaeological or paleontological sites	IC 67-41-1
			Compliance with other State Laws on graves and caves	IC 27-50-1 IC 18-70-35
Rare and Endangered Animal Species	Protection and Management of Rare and Endangered Species	Idaho Department of Fish and Game	Consultation through other State Agencies	
State Parks and Recreation Land	Crossing such Lands	Idaho Department of Parks and Recreation	Permit Applicable to Specific Use	IC 67-42-12 IDAPA 26-65-43
Gooding Twin Falls Cassia Jerome	Crossing Lands within the County	County Planning and Zoning Departments	Possible conditional or special use permits	County Zoning Ordinances