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Water For Western Energy Development

1982 Update

Prepared by the Staff of the
Western States Water Council

ABSTRACT

The purpose of this report is to assist the western states with water management planning associated with dynamic energy planning. It presents energy production detail, existing and forecasted to 1992. This data was obtained from reports recently produced by WESTPO and by the Electric Reliability Councils, supplemented by information obtained directly from energy producers or from the states. The body of the report is a series of tabulations of the production capacity of several energy processes and the associated fresh water use, set forth by County and State. It is intended for use by state water planners who may, from time to time, multiply changing, locally updated energy production units by the fresh water unit use coefficients that are tabulated here in order to obtain their own revised estimates of annual water use for energy.

This report is an update of two previous Council reports and it presents a list of recent references to supplement the bibliography that was published by the Council in 1976. Estimates of annual volumes of water use were obtained by multiplying the appropriate unit use coefficient from Table A by the annual production capacity of the energy plants. Separate tables deal with fresh water use by State and County for mining and oil refining; for coal slurry pipelines; for synthetic fuel projects; and for electrical generation plants. Total annual energy units and water use volumes by State were transferred from the detailed tables into summary Table I. For the twelve states combined the estimated use of fresh

water for energy development is summarized as follows:

Energy Process	1982 10^3AF/yr	1992 10^3AF/yr	Ten Year Increase 10^3AF/yr	% of Increase
Secondary Oil Recovery	206	206	Ø	
Oil Refining	392	397	5	
Surface Coal Mining	10	15	5	2
Uranium Processing	13	19	6	
Coal Slurry Pipelines	3	56	53	8
Synfuel Liquid Production	Ø	60	60	11
Synfuel Gas Production	Ø	17	17	
Electrical Power from Oil	54	46	(8)	
Electrical Power from Gas	303	286	(17)	
Electrical Power from Coal	384	711	327	79
Electrical Power from Nuclear	36	221	185	
Other Combustion Electrical Power	5	62	57	
Combined Water Use	1,406	2,096	690	100

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WATER FOR WESTERN ENERGY DEVELOPMENT - 1982 UPDATE

WESTERN STATES WATER COUNCIL

Introduction

Energy development will pose new challenges to the water management structure at local, state, interstate and federal levels. As was stated in the July 1981 Water Resources Council Technical Report concerning synthetic fuels development, "Individual States can and should serve as a focal point to strengthen planning, coordination, and implementation of water and land use management." This report has been produced by the Western States Water Council to assist the individual states with that task and to increase coordination among the various governing bodies. It is an update of the previous council reports that were published on this subject in 1974 and 1977. Both of those reports indentified energy planning as dynamic and this report is intended to supplement them in the light of revised forecasts from the energy industry.

Water supply planning has to be based upon predictions. Predictions as to what will happen in the energy industry must incorporate many uncertainties. But the predictions from the industry that are included in this report are considered to be the most reliable from which to fashion a useful tool for the use of water planners in the western states. This report is offered as such a "best available" tool, but planners are cautioned to adapt the water use forecast data in accordance with dynamically changing energy planning. Data in the report has been tabulated in a form to flexibly adapt to changing conditions in the near future so that with new energy forecast information a planner can adjust the associated water needs by means of simple ratios.

The essence of this report is the tabulation of specific projects, existing and planned, classified according to energy sources and water use methods. These projects are rated in energy unit terms which are multiplied by appropriate coefficients to yield annual water use data. This "empirical" approach is based upon demand projections from the energy industry in contrast with the more general "analytical" approach that has been used in some reports. From this it is possible for a planner to make his own re-evaluation of water needs based upon new information available to him at close range concerning the specific energy projects within his area of responsibility.

It was not within the scope of this report to generate new energy forecasts or to calculate revised water use coefficients. Rather the scope is limited to presenting specific data assembled from the most credible sources from which the user of this report may draw his own specific conclusions. General trends and observations are listed at the end of the report under the heading of conclusions but the flexible tool offered here will have its greatest value for water planners as they pencil in the changing situation as to specific projects in order to obtain water use forecasts about which they feel individually confident.

In 1976 the Western States Water Council published a bibliography of selected reports and ongoing studies relating to water requirements for energy resource development. As an extention of that useful tool in the hands of water administrators and planners there is at the end of this report a supplementary list of more than a hundred new references. New reports touching on the area of energy and water are coming into the literature at the rate of about two dozen per year.

Synopsis of Previous Council Reports.

The Western States Water Council produced reports in 1974 and 1977 for the purpose of helping western states assess the potential demands for water for development of western energy to the year 1990. Existing energy studies were used as a base. No effort was made to assess the availability of water. The subject was considered dynamic with the anticipation that changes or modifications to the report would be needed from time to time.

In 1974 the use of energy was growing at a significantly accelerating rate. The United States (with less than 6% of the world's population) was using more than 33% of the global energy. A trade deficit was impinging because of having to import one-third of the oil consumed.

According to the 1974 WSWC Report, the dollar return for water used in energy production is much higher than for irrigated agriculture. But there is a social cost of water used for energy production which is the value of all those uses which are sacrificed in order to make water available for energy. These lost opportunity costs include esthetic values, homesite values and the commercial values for other uses. It is doubtful that an increased price of water would have any significant effect on the amount of water used for energy production. So it is important that those lost opportunity costs be considered. By doing this the effect of greater energy scarcity can be reflected in the adoption of conservation measures and also in a complete review of all alternatives in order to balance economic, ecological and national interest objectives. Planners should recognize that the energy industry has small dollar incentive for water conservation.

The 1974 report assumed that meaninfgul production of oil from oil shale would be accomplished before 1990. However, it was acknowledged that the net energy gain of oil from this source was under debate. Other references were cited which concluded that greater dependence must be placed upon the coal and nuclear resources of the West and that about 50% of the energy in the West would be in the form of electrical power by 1990. The report also concluded that thermal electric power would be the major user of water by the energy industry, largely consumed through wet cooling evaporative towers.

It was predicted that a significant amount of additional coal would be used in place of some of the nuclear power plants that had been planned. The future use of natural gas was expected to depend on its availability despite a 50% price increase then being allowed. Oil was predicted to decrease in its percentage of the total energy mix and any oil that might be developed from shale would require a high price to be profitable for extraction. The growth rate of coal in the energy mix had been slower than expected and was not limited by the availability of coal. The production of 30,000 megawatts from geothermal energy sources was considered possible by 1900.

The 1974 Report noted that the largest water withdrawals in the U. S. are for once-through cooling of condensers on steam turbines of electric plants. The most common alternative is a cooling pond but evaporative towers are more often employed in the west. Nuclear plants were reported to annually consume 17,000 acre feet of water per 1,000 megawatt capacity and coal fired plants 15,000 acre feet per year for 1,000 megawatt capacity. Coal conversion to 250 x 10^6 standard cubit feet of pipeline gas per day would require 10 to 45,000 acre feet per year. Coal conversion to 100,000 barrels per day of liquid hydrocarbon would require 20 to 130,000 acre feet per year. 121,000 to 189,000 acre feet per year would be required to produce 1,000,000 barrels per day of oil from oil shale.

A unit consumption rate of 1 to 3 acre feet per acre of surface area disturbed plus .5 to 4 acre feet per acre of restoration and revegetation would be required in surface mining operations. In the west this would total about 16,000 acre feet per year for uranium mining and for coal mining it would start at 30,000 to 90,000 acre feet per year, increasing to 195,000 acre feet per year by 1990. The refining of oil, including upgrading of crude shale oil, required 39 gallons of water for a 42 gallon barrel of oil. Water for four coal slurry pipelines was anticipated to require 51,000 acre feet per year to convey 64,000,000 tons of coal per year.

The 1977 update report projected energy production in the west to 1990 with estimated water requirements. It concluded that by 1990 oil shale processing may be barely started but that five coal slurry pipelines would require 46,000 acre feet a year to transport 59 million tons per year of coal. At that time there were plans to construct 85 additional large steam electric generating units in 46 locations with an aggregate capacity of 46,000 megawatts.

The report used the 1977 assessment of the Western States Coordinating Council for details of the electric generating capacity, existing and forecasted. The report considered steam electric plant cooling water consumption by various methods, concluding that although once through cooling is the least expensive, the federal regulations on thermal discharge will limit this method. Cooling ponds, next least expensive, require 10,000 to 12,000 acre feet per year per 1,000 megawatts. Evaporative towers are more expensive and consume 20,000 to 25,000 acre feet per year for a 1,000 megawatt plant depending upon the TDS of incoming water. Dry cooling systems entail the largest capital costs and require makeup water in the order of 2,000 acre feet per year per 1,000 megawatt unit.

The report concluded that with the trend toward evaporative cooling towers a maximum of water consumption would result in an increase of 240,000 acre feet per year for another 15,000 megawatts of power.

Scope and Objectives.

Based upon specific existing or proposed energy development projects, water use forecasts are presented as an extension of information obtained from credible sources within the energy industry. Much of the basic data came from reports published by the Western Gorvernors Policy Office entitled Energy Activity in the West, March, 1981 and Resource Activity in the West, currently in preparation for publication. Information about coal mining, uranium production, oil refining and synthetic fuel development was obtained from these sources. Understandably, the WESTPO reports recognize that "all forecasts are tentative, subject to change, and dependent upon rapidly changing political, economic and regulatory considerations." However, these reports assert that the forecasting process establishes a dialog among levels of government and between the public and private sectors.

Large amounts of fresh water are used for cooling electric generation plants. Detailed information concerning the megawatt ratings of existing and proposed power facilities was obtained from April, 1982 reports of four Electric Reliability Councils. These were tabulated according to state and county locations and indexed according to fuel source and cooling method. An estimate of water demand for this energy process then resulted from multiplying megawatt ratings by an appropriate coefficient. Table A presents a listing of the coefficients from the 1977 WSWC Report and other sources leading to the coefficients that were used.

Sufficient information has been included to accurately report existing and proposed total megawatt generating capacity for each of the twelve states, even though fresh water for cooling is not employed for many of the installations. One objective was to assure that all reliable information was included even though fresh water cooling calculations applied to only part of the plants. A second reason was to provide a tool for use in connection with future forecasts of total megawatt generating capacity. Within a given state the mix of fuel sources, power plant types and cooling methods won't change appreciably within a decade or so. Accordingly, the ratio of fresh water for cooling to total megawatt generating capacity can be multiplied by future estmates of generating capacity in order to anticipate changes in forecasted cooling water requirements. To this end the tabulations include not only specific fossil fired and nuclear generating plants but also the accumulated totals of megawatt generating capacity for wind, solar, hydro and other electric generating facilities within each state.

The final objective of this report is to show a comparison between existing and forecasted fresh water demands for energy projects for each state and their affected counties. Even though

generalized coefficients were multiplied by the detailed energy data to yield estimates of water use that may be less precise than could be calculated by the use of coefficients tailored to local climate and other conditions, the resulting general estimates of present and future fresh water use are expected to provide a useful planning tool as to the trend in fresh water demand for energy.

Period of Forecast.

The analysis of oil and gas, coal, uranium and synthetic fuel industries is presented by Resource Activity in the West for the years 1980 and 1990. The list of electric power generating facilities in the four reports of the Electric Reliability Councils covers the period from January, 1982 through January 1992. In view of the many uncertainties entering into the energy forecasts, the year 1992 was assumed to be an appropriate associated date for future fresh water use projection. If it turns out that project forecasters are optimistic, then the date at which the anticipated level of development arrives may have to be advanced. According to past records of predictions versus actuality this could again be the experience. But a ten year planning forecast does not seem to be unreasonable to attempt.

Tabulations.

Table A is a list of coefficients of fresh water consumed by energy production in acre feet per year for various energy units. It shows the previous Council report estimates together with similar data from other sources leading to the selection of coefficients used in this report. Obviously any coefficient selected might not fit each of the wide variety of applications within the western states. But rather than to present a range of numbers, a single coefficient was selected for each application according to the most representative conditions in the references.

Table B contains an index of electricity generation abbreviations. The detailed tabulations contain coded abbreviations of fuels, generation types and cooling systems which are explained in Table B.

Table C is a list of electric utility reporting systems identified alphabetically by index letters. The Electric Power Reliability Council reports list the utility reporting systems for each power generating facility. Unfortunately, in some cases the reporting system has more to do with transmission of the power than with construction and/or operation of the power plant.

Table D is a list of the Federal Code of States and Counties (National Bureau of Standards Federal Information Processing Standards Publication 6-3, 1979) for the counties that are involved in this report. There is a two digit number for each state and a three digit number for each county. Detailed data in the tabulations are grouped by county and indexed with the number.

Table I presents a summary of annual fresh water use estimates for energy development for each of the twelve states. This tabulation is the essence of the entire report. It summarizes the data from the following four tables and shows for each state, now and in the future, a tally of energy facilities and an estimate of annual water use for each energy process.

Table II contains estimates of annual mining and refining water use. The 1982 WESTPO report showed the production capacity of oil refineries, surface coal mines and uranium processing plants by county within each state. Information for California, Oregon and Texas was obtained directly from those states. The water use coefficients were applied uniformly against the totals of energy units for each state to show approximate present annual water demands for mining and refining. These estimates were then increased for 1992 in proportion with the 1981 WESTPO Report ten year forecast of energy production increase.

Table III lists coal slurry pipelines that have been proposed and it projects fresh water uses. This pipeline proposal and slurry coal tonnage information was obtained from news media sources and then verified directly with each of the energy companies.

Table IV lists each of the synthetic fuel projects that have been proposed. This information was taken from the WESTPO reports and then extended to show estimated water use projections.

Table V is a detailed list of water cooled electrical generation plants as obtained from Electric Reliability Council reports. Unfortunately the Reliability Council reports did not include cooling methods so it was necessary to obtain that information directly from the power companies, except that cooling system information for power plants within the state of Texas was obtained from the Texas Water Development Board. In cases where plant units are to be added or retired the date is shown and the megawatts are adjusted in the present and future columns accordingly. Megawatts were subtotaled within each state according to energy source and cooling method. Water use estimates for each subtotal were then extended by use of the coefficients from Table A. Then in addition to the subtotals of megawatts for the plants listed in detail, the megawatt generating capacity for hydro, sun, wind and other energy sources not dependent upon water for cooling were also listed in order to complete the total electrical energy generation picture for each state.

Conclusions.

The principle conclusions available from this report will be evident to each state water planner in the data displayed in summary Table I. The use of fresh water for cooling electric power generation is the most significant item. In nine states the trend is definitely in the direction of increased electrical energy from coal. It is also significant that data from the electric energy industry indicates a very modest trend in the direction of electric energy from non-fresh water using sources such as wind, sun and hydro.

Large amounts of fresh water are used with oil refineries in certain states but the trend curve is quite flat. Water use increases for coal mining and uranium processing could be significant. The future water uses for synfuels and coal slurry pipelines could be more significant, but subject to greater uncertainty.

For the twelve states as a group there is an indicated increase of 690,000 AF per year for energy purposes within the next decade. Of this 79% would be associated with increased electric power production, 11% associated with synthetic fuel development, 2% for increased refining and mining processes, and 8% of the increase would be for coal slurry pipelines.

Table A

UNIT ESTIMATE OF FRESH WATER CONSUMED BY ENERGY PROD CTION UNITS

Acre Feet Per Year*

Energy System	Modular Energy Units	BuRec Studies 1975,1981	WSWC Report 1977	O.U. E.P.A. 1980	Abbey Brown Roach 1982	Other Studies Page 81	WSWC Report 1982
Coal Gasification	250 x 10^6 SCF/day	7,850	8,000 45,000	4,890 8,670	6,200 7,800	(1) 6,000	7,000
Coal Liquifaction	50,000 Bbl/day		10,000	4,610 5,880	7,400	(2) 6,600 14,300	7,400
Shale Oil & Tar Sand Oil	50,000 Bbl/day	7,850	3,800 9,400	6,450 9,300	5,850 9,300	(3) 8,500	8,500
Oil Refining	50,000 Bbl/day		2,200			(4) 3,300	2,200
Uranium Production	U_3O_8; 1,000 Tons/Year			240 268			250
Surface Coal Mining	1,000,000 Tons/Year		400	Ø 50		(5) 50	50
Coal Slurry	1,000,000 Tons/Year	370 735	800				800
Electricity Generation	7,000x10^6KWH/Year, or 1,000 MW						
Geothermal Condensate							NS
Geothermal; ET			48,000			(6) 52,800	52,800
Nuclear Steam; ET			17,000			(6) 15,000	15,000
Coal (and Bio,Ref,Unk,WH); ET			15,000			(6) 11,900	11,900
Oil & NG Steam; ET			15,000			(6) 10,500	10,500
Nuclear Steam; CP			12,000		11,800		12,000
Fossil (and Bio,Ref,Unk,WH); CP			10,000		9,550		9,500
Nuclear Steam; OT			4,000				4,000
Fossil (and Bio,Ref,Unk,WH); OT/UK			3,600			(7) 5,500	3,600
Fossil CA.CG,CT,CW; DR						(6) 6,100	6,100
Fossil CT with WI; DR			2,000			(6) -2,000	1,500
Fossil GT, IC: DR							NS
Nuclear and Fossil Steam; SW			NS				NS

*In some cases shown as a range. (Note: Steam electric blowdown not included as consumptive use.)

(1) Probstein & Hicks, 1982
(2) Probstein & Gold, 1978
(3) Stansbury & Patton, 1982
(4) Gloyna, Woodson & Drew, 1975
(5) Bishop, et al, 19[illegible]
(6) California Energy Commission, 1979
(7) Hoffman & Chandle[illegible] 1973

Table B

ELECTRICITY GENERATION
ABBREVIATIONS

A. UNIT TYPE

CA	Combined Cycle Steam - Auxiliary
CG	Cogeneration
CT	Combined Cycle - Combustion Turbine
CW	Combined Cycle Steam - Waste Heat
GE	Geothermal
GT	Gas Turbine
IC	Internal Combustion
JE	Jet Engine
NP	Nuclear Steam
ST	Steam Turbine

B. FUEL TYPE

Oil	Oil	)
NG	Natural Gas	)Fossil
Coal	Coal	)
GST	Geothermal Steam	
Nuc	Nuclear	
Bio	Biomass, Wood	)
Ref	Refuse (Solid Waste)	)Other
Unk	Unknown at this time	)
WH	Waste Heat	)

C. COOLING SYSTEM

CP	Cooling Pond
DR	Dry Radiation
ET	Evaporation Tower
GC	Geothermal Condensate
OT	Once Through
UK	Unknown at this time
SW	Seawater, Once through
WD	Wet/Dry
WI	Water or Steam Injection for NO_x Control

Table C

IDENTIFICATION OF ELECTRIC UTILITY REPORTING SYSTEMS

AEPC	Arizona Electric Power Cooperative, Inc.
APS	Arizona Public Service Company
AUST	Austin, City of
BEPC	Basin Electric Power Cooperative
BF	Bonners Ferry, City of
BHPL	Black Hills Power & Light Company
BPA	Bonneville Power Administration
BROV	Brownsville, City of
BURB	Burbank, City of
CCS	Colorado Springs, City of
CDWR	California Department of Water Resources
CEPL	Central Power & Light Company
CUEA	Colorado-Ute Electric Association, Inc.
DAPL	Dallas Power & Light Company
DGT	Deseret Generation & Transmission Co-operative
EPE	El Paso Electric Company
EWEB	Eugene Water & Electric Board
GLEN	Glendale Public Service Department
GUSU	Gulf States Utilities Co.
HCPD	Heartland Consumers Power District
HOLP	Houston Lighting & Power Company
IID	Imperial Irrigation District
IPC	Idaho Power Company
LAS	Los Alamos Scientific Lab.
LES	Lincoln Electric System
LDWP	Los Angeles Department of Water & Power
LOCR	Lower Colorado River Authority
LUB	Lamar (City of) Utilities Board
MBMP	Missouri Basin Municipal Power Agency
MDU	Montana-Dakotas Utilities Co.
MID	Modesto Irrigation District
MPC	Montana Power Company
NCPA	Northern California Power Agency
NEVP	Nevada Power Company

Table C

(Continued)

PASA	Pasadena, City of
PEGT	Plains Electric Generation and Transmission Cooperative, Inc.
PGE	Portland General Electric Company
PG&E	Pacific Gas and Electric Company
PNM	Public Service Company of New Mexico
PPL	Pacific Power & Light Company
PRPA	Platte River Power Authority
PSC	Public Service Company of Colorado
PSOK	Public Service Company of Oklahoma
PSPL	Puget Sound Power and Light Company
SAAN	San Antonio, City of
SCE	Southern California Edison Company
SCL	Seattle City Light
SCPC	So. Colorado Power Division, Central Telephone & Utilities Corp
SDGE	San Diego Gas & Electric Company
SMUD	Sacramento Municipal Utility District
SNCL	Santa Clara, City of
SNEV	Nevada, State of
SOEP	Southwestern Electric Power Company
SPP	Sierra Pacific Power Company
SRP	Salt River Project
ST&M	South Texas and Medina Electric Cooperative
SWPS	Southwestern Public Service Co.
TEES	Texas Electric Service Company
TEP	Tucson Electric Power Company
TEPL	Texas Power & Light Company
TMPP	Texas Municipal Power Pool
TSGT	Tri-State Generation & Transmission Association, Inc.
TUCS	Texas Utilities Company System
UPLC	Utah Power & Light Company
USUC	U.S. Bureau of Reclamation, Upper Colorado
WETU	Texas Utilities Company
WWPC	Washington Water Power Company

Table D

FEDERAL CODE OF STATES AND COUNTIES

STATE	CODE	COUNTY	CODE	COUNTY
ARIZONA	04-		017	Navajo
	000	Undesignated	019	Pima
	001	Apache	021	Pinal
	003	Cochise	023	Santa Cruz
	005	Coconino	027	Yuma
	013	Maricopa		
CALIFORNIA	06-			
	000	Undesignated	071	San Bernardino
	001	Alameda	073	San Diego
	013	Contra Costa	075	San Francisco
	023	Humboldt	077	San Joaquin
	025	Imperial	079	San Luis Obispo
	029	Kern	081	San Mateo
	031	Kings	083	Santa Barbara
	033	Lake	085	Santa Clara
	037	Los Angeles	089	Shasta
	039	Madera	095	Solano
	053	Monterey	097	Sonoma
	055	Napa	099	Stanislaus
	059	Orange	103	Tehema
	061	Placer	111	Ventura
	063	Plumas	113	Yolo
	065	Riverside		
	067	Sacramento		
COLORADO	08-			
	001	Adans	071	Las Animas
	003	Alamosa	077	Mesa
	007	Archuleta	079	Mineral
	013	Boulder	081	Moffat
	029	Delta	083	Montezuma
	031	Denver	085	Montrose
	041	El Paso	087	Morgan
	043	Fremont	089	Otero
	045	Garfield	099	Prowers
	051	Gunnison	101	Pueblo
	055	Huerfano	103	Rio Blanco
	057	Jackson	107	Routt
	063	Kit Carson	123	Weld
	069	Larimer	125	Yuma
IDAHO	16-			
	000	Undesignated	013	Blaine
	003	Adams	021	Boundary
MONTANA	30-			
	000	Undesignated	065	Musselshell
	003	Big Horn	075	Powder River
	013	Cascade	083	Richland
	017	Custer	085	Roosevelt
	021	Dawson	087	Rosebud
	035	Glacier	093	Silver Bow
	055	McCone	109	Wibaux
			111	Yellowstone

FEDERAL CODE OF STATES AND COUNTIES (Cont.)

STATE	CODE	COUNTY	CODE	COUNTY
NEVADA	32-			
	000	Undesignated	019	Lyon
	001	Churchill	023	Nye
	003	Clark	025	Ormsby
	013	Humboldt	031	Washoe
	015	Lander	033	White Pine
NEW MEXICO	35-			
	001	Bernalillo	031	McKinley
	005	Chaves	037	Quay
	007	Colfax	043	Sandoval
	013	Dona Ana	045	San Juan
	015	Eddy	049	Santa Fe
	025	Lea	053	Socorro
	028	Los Alamos	061	Valencia
OREGON	41-			
	005	Clackamas	047	Marion
	009	Columbia	049	Morrow
	039	Lane		
TEXAS	48-			
	000	Undesignated	179	Gray
	001	Anderson	183	Gregg
	013	Atascosa	185	Grimes
	021	Bastrop	197	Hardeman
	023	Baylor	199	Hardin
	027	Bell	201	Harris
	029	Bexar	203	Harrison
	039	Brazoria	207	Haskell
	041	Brazos	211	Hemphill
	057	Calhoun	213	Henderson
	061	Cameron	215	Hidalgo
	071	Chambers	221	Hood
	073	Cherokee	227	Howard
	081	Coke	231	Hunt
	083	Coleman	233	Hutchinson
	085	Collin	237	Jack
	103	Crane	245	Jefferson
	113	Dallas	253	Jones
	121	Denton	255	Karnes
	127	Dimmit	279	Lamb
	135	Ector	293	Limestone
	141	El Paso	297	Live Oak
	143	Erath	299	Llano
	147	Fannin	303	Lubbock
	149	Fayette	309	McLennan
	157	Fort Bend	315	Marion
	161	Freestone	321	Matagorda
	163	Frio	331	Milam
	165	Gaines	335	Mitchell
	167	Galveston	339	Montgomery
	175	Goliad	341	Moore
	177	Gonzales	343	Morris

FEDERAL CODE OF STATES AND COUNTIES (Cont.)

STATE	CODE	COUNTY	CODE	COUNTY
TEXAS (Cont.)				
	345	Motley	425	Somervell
	355	Nueces	439	Tarrant
	361	Orange	441	Taylor
	363	Palo Pinto	449	Titus
	367	Parker	451	Tom Green
	375	Potter	453	Travis
	377	Presidio	469	Victoria
	387	Red River	475	Ward
	395	Robertson	479	Webb
	397	Rockwall	487	Wilbarger
	401	Rusk	497	Wise
	409	San Patricio	499	Wood
	423	Smith	503	Young
UTAH	49-			
	001	Beaver	021	Iron
	005	Cache	025	Kane
	007	Carbon	027	Millard
	011	Davis	035	Salt Lake
	013	Duchesne	037	San Juan
	015	Emery	047	Uintah
	017	Garfield	049	Utah
	019	Grand	057	Weber
WASHINGTON	53-			
	005	Benton	043	Lincoln
	021	Franklin	053	Pierce
	027	Grays Harbor	057	Skagit
	029	Island	063	Spokane
	033	King	065	Stevens
	041	Lewis	073	Whatcom
WYOMING	56-			
	003	Big Horn	025	Natrona
	005	Campbell	027	Niobrara
	007	Carbon	029	Park
	009	Converse	031	Platte
	013	Fremont	033	Sheridan
	017	Hot Springs	035	Sublette
	021	Laramie	037	Sweetwater
	023	Lincoln	041	Uinta
			045	Weston

Table I

WESTERN STATES WATER COUNCIL

SUMMARY OF ANNUAL FRESH WATER USE ESTIMATES FOR ENERGY DEVELOPMENT

Estimated Item	ARIZONA		CALIFORNIA		COLORADO	
	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF
1982 Conditions						
Produced Oil, 10^6 Bbl/Year			357	87.8	30	Ø
Refined Oil, 10^3Bbl/Day	56	2.5	2,589	113.9	66	2.9
Surface Coal, 10^6Tons/Year	11	.6			13	.7
Processed Uranium, Tons/Year					2,500	.6
Coal Slurry, 10^6Tons/Year	4	3.2				
Synfuel Liquid, 10^3BPD						
Synfuel Gas, 10^6SCFD						
Oil Power, MW	2,635	14.8	24,199	35.0	320	NS
Gas Power, MW	712	5.3	290		521	3.2
Coal Power, MW	4,246	49.7			4,173	48.3
Nuclear Power, MW			1,311	13.1	200	3.0
Other Power, MW	168	1.1	1,289	1.6		
Combined Water Use		77.2		251.4		58.7
1992 Conditions						
Produced Oil			357	87.8	30	Ø
Refined Oil, 10^3Bbl/Day	56	2.5	2,589	113.9	66	2.9
Surface Coal, 10^6Tons/Year	11	.6			23	1.2
Processed Uranium, Tons/Year					2,628	.7
Coal Slurry, 10^6Tons/Year	4	3.2			30	24.0
Synfuel Liquid, 10^3BPD					474	34.0
Synfuel Gas, 10^6SCFD						
Oil Power, MW	2,263	10.3	21,530	29.3	320	NS
Gas Power, MW	712	5.3	437	.7	487	3.0
Coal Power, MW	6,683	78.7	500	6.0	6,593	77.1
Nuclear Power, MW	3,810	57.2	5,701	13.1	275	4.1
Other Power, MW	318	2.9	4,435	35.6		
Combined Water Use		160.7		286.4		147.0

Table I

WESTERN STATES WATER COUNCIL

SUMMARY OF ANNUAL FRESH WATER USE ESTIMATES FOR ENERGY DEVELOPMENT

Estimated Item	IDAHO		MONTANA		NEVADA	
	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF
1982 Conditions						
Produced Oil, 10^6Bbl/Day			30	12.5	1	Ø
Refined Oil, 10^3Bbl/Day			154	6.8	4	.2
Surface Coal, 10^6Tons/Year			30	1.5		
Processed Uranium, Tons/Year						
Coal Slurry, 10^6Tons/Year						
Synfuel Liquid, 10^3BPD						
Synfuel Gas, 10^6SCFD						
Oil Power, MW	2	NS			77	NS
Gas Power, MW	50	NS	53	NS	1,101	7.4
Coal Power, MW			884	8.6	2,160	25.7
Nuclear Power, MW						
Other Power, MW						
Combined Water Use		NS		29.4		33.3
1992 Conditions						
Produced Oil, 10^6Bbl/Day			30	12.5	1	Ø
Refined Oil, 10^3Bbl/Day			154	6.8	4	.2
Surface Coal, 10^6Tons/Year			58	2.9		
Processed Uranium, Tons/Year						
Coal Slurry, 10^6Tons/Year			22	--		
Synfuel Liquid, 10^3BPD			200			
Synfuel Gas, 10^6SCFD			375			
Oil Power, MW	2	NS			77	NS
Gas Power, MW	50	NS	53	NS	1,171	7.4
Coal Power, MW			2,614	29.2	5,660	67.4
Nuclear Power, MW						
Other Power, MW	85	.4	100	.4	100	5.3
Combined Water Use		.4		51.8		80.3

Table I

WESTERN STATES WATER COUNCIL

SUMMARY OF ANNUAL FRESH WATER USE ESTIMATES FOR ENERGY DEVELOPMENT

Estimated Item	NEW MEXICO		OREGON		TEXAS	
	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF
1982 Conditions						
Produced Oil, 10^6Bbl/Day	75	8.0			931	77.3
Refined Oil, 10^3Bbl/Day	125	5.5			5,126	225.6
Surface Coal, 10^6Tons/Year	13	.6			33	1.6
Processed Uranium, Tons/Year	22,100	5.5			1,300	2.0
Coal Slurry, 10^6Tons/Year						
Synfuel Liquid, 10^3BPD						
Synfuel Gas, 10^6SCFD						
Oil Power, MW	330	3.5	109	NS	210	.5
Gas Power, MW	835	7.8	352	2.1	38,556	276.8
Coal Power, MW	3,268	28.0	530	5.0	13,530	133.9
Nuclear Power, MW			1,080	16.2		
Other Power, MW			165	1.0	290	1.6
Combined Water Use		58.9		24.3		719.3
1992 Conditions						
Produced Oil, 10^6Bbl/Day	75	8.0			931	77.3
Refined Oil, 10^3Bbl/Day	153	6.7			5,126	225.6
Surface Coal, 10^6Tons/Year	25	1.2			57	2.8
Processed Uranium, Tons/Year	33,836	8.4			1,822	2.9
Coal Slurry, 10^6Tons/Year						
Synfuel Liquid, 10^3BPD	76					
Synfuel Gas, 10^6SCFD					250	7.0
Oil Power, MW	246	2.6	109	NS	498	3.4
Gas Power, MW	653	6.6	352	2.1	36,774	259.7
Coal Power, MW	4,612	44.1	530	5.0	24.181	240.3
Nuclear Power, MW			1,080	16.2	4,800	57.6
Other Power, MW			165	1.0	2,730	14.3
Combined Water Use		77.6		24.3		890.9

Table I

WESTERN STATES WATER COUNCIL

SUMMARY OF ANNUAL FRESH WATER USE ESTIMATES FOR ENERGY DEVELOPMENT

Estimated Item	UTAH		WASHINGTON		WYOMING	
	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF	Energy Units	Water 10^3AF
1982 Conditions						
Produced Oil, 10^6Bbl/Year	25	Ø			114	20.0
Refined Oil, 10^3Bbl/Day	169	7.4	385	16.9	236	10.4
Surface Coal, 10^6Tons/Year			5	.2	91	4.6
Processed Uranium, Tons/Year	2,220	.6	2,450	.6	15,150	3.8
Coal Slurry, 10^6Tons/Year						
Synfuel Liquid, 10^3BPD						
Synfuel Gas, 10^6SCFD						
Oil Power, MW	9	NS	237	.4	11	NS
Gas Power, MW	96	.7	414	NS		
Coal Power, MW	2,013	23.4	1,280	15.2	4,370	46.4
Nuclear Power, MW			840	3.4		
Other Power, MW						
Combined Water Use		32.1		36.7		85.2
1992 Conditions						
Produced Oil, 10^6Bbl/Year	25	Ø			114	20.0
Refined Oil, 10^3Bbl/Day	217	9.5	385	16.9	279	12.3
Surface Coal, 10^6Tons/Year					133	6.6
Processed Uranium, Tons/Year	2,550	.7	2,450	.6	22,126	5.5
Coal Slurry, 10^6Tons/Year	16	4.8			55	24.0
Synfuel Liquid, 10^3BPD	536	26.5				
Synfuel Gas, 10^6SCFD	277				675	9.6
Oil Power, MW	9	NS	237	.4	11	NS
Gas Power, MW	96	.7	414	NS		
Coal Power, MW	6,213	73.3	2,280	27.1	5,785	63.2
Nuclear Power, MW			4,865	73.0		
Other Power, MW	20	1.1	42	.5		
Combined Water Use		116.6		118.5		141.2

Table I

WESTERN STATES WATER COUNCIL

SUMMARY OF ANNUAL FRESH WATER USE ESTIMATES FOR ENERGY DEVELOPMENT

Estimated Item	12 STATES	
	Energy Units	Water 10^3AF
1982 Conditions		
Produced Oil, 10^6Bbl/Year	1,563	205.6
Refined Oil, 10^3Bbl/Day	8,911	392.1
Surface Coal, 10^6Tons/Year	195	9.8
Processed Uranium, Tons/Year	45,720	13.1
Coal Slurry, 10^6Tons/Year	4	3.2
Synfuel Liquid, 10^3BPD		
Synfuel Gas, 10^6SCFD		
Oil Power, MW	28,139	54.2
Gas Power, MW	42,980	303.3
Coal Power, MW	36,454	384.2
Nuclear Power, MW	3,431	35.7
Other Power, MW	1,912	5.3
Combined Water Use		1,406.5
1992 Conditions		
Produced Oil, 10^6Bbl/Year	1,563	205.6
Refined Oil, 10^3Bbl/Day	9,029	397.3
Surface Coal, 10^6Tons/Year	307	15.3
Processed Uranium, Tons/Year	65,412	18.8
Coal Slurry, 10^6Tons/Year	127	56.0
Synfuel Liquid, 10^3BPD	1,286	60.5
Synfuel Gas, 10^6SCFD	1,577	16.6
Oil Power, MW	25,302	46.0
Gas Power, MW	41,199	285.5
Coal Power, MW	65,651	711.4
Nuclear Power, MW	20,531	221.2
Other Power, MW	7,995	61.5
Combined Water Use		2,095.7

Table II

WESTERN STATES WATER COUNCIL

ESTIMATES OF 1981 ANNUAL MINING AND REFINING WATER USE *

State County	Name	Refined Oil		Surface Coal		Processed U_3O_8	
		Bbl/Day	AF/yr	10^3Tons/yr	AF/yr	Tons/yr	AF/yr
ARIZONA 04-							
005	Arizona Fuels	5,800					
013	Provident Energy	50,000					
017	Black Mesa			3,702			
017	Kayenta			7,282			
	Arizona Subtotal	55,800	2,500	10,984	500		
CALIFORNIA 06-							
013	Chevron USA	365,000					
013	Pacific Refining	85,000					
013	Shell Oil	104,000					
013	Tosco Corp	126,000					
013	Union Oil	111,000					
029	Chevron USA	26,000					
029	Casco/Sierra Anchor	10,000					
029	Getty Mohawk	60,000					
029	Gibson Oil	4,600					
029	Kern Oil	20,000					
029	Quad (Coastal)	8,500					
029	Road Oil Sales	6,000					
029	Sabre Refining	10,000					
029	San Joaquin	25,600					
029	Sunland Refining	15,000					
029	Tenneco Oil	-					
029	Tosco Corp	40,000					
029	West Coal Oil	21,000					
029	Witco Chemical	11,000					
031	Beacon Oil	17,900					
037	Atlantic Richfield	166,000					
037	Champlin Petroleum	60,000					
037	Chevron USA	405,000					
037	Conoco, Inc.	46,500					
037	DeMenno/Kerdoon	15,000					
037	ECO Petroleum	10,000					
037	Edgington Oil	41,600					
037	Fletcher Oil	29,500					
037	Golden Eagle	16,500					
037	Gulf Oil	51,500					
037	Huntway Refining	5,400					
037	Lunday-Thagard Oil	15,000					
037	McMillan Ringfree	13,000					
037	Marlex Petroleum	20,000					
037	Mobil Oil	123,500					
037	Newhall Refining	21,400					
037	Powerine Oil	44,100					
037	Shell Oil	108,000					
037	Texaco, Inc.	75,000					
037	Union Oil	108,000					
083	Conoco, Inc.	9,500					

*Resource Activity in the West

Table II

WESTERN STATES WATER COUNCIL

ESTIMATES OF 1981 ANNUAL MINING AND REFINING WATER USE *

State County	Name	Refined Oil		Surface Coal		Processed U_3O_8	
		Bbl/Day	AF/yr	10^3 Tons/yr	AF/yr	Tons/yr	AF/yr
CALIFORNIA (Cont.)							
095	Exxon Co.	106,000					
095	Huntway Refining	-					
111	Oxnard Refinery	4,000					
111	USA Petrochem	27,900					
	Calif. Subtotal	2,589,000	113,900				
COLORADO 08-							
001	Asamera Oil	21,000					
001	Conoco Inc.	32,500					
007	Chimney Rock			8			
029	Tomahawk			28			
041	Bacon			39			
043	GEC Minerals			76			
043	Canon City Mill					1,200	
055	Viking			24			
057	Marr			759			
057	Bourg			4			
057	Canadian			44			
071	Trinidad Basin			68			
077	Gary Refining	13,000					
081	Colowyo			2,683			
081	Trapper			2,014			
085	Nucla			92			
085	Union Carbide					1,300	
107	Energy Mines			3,608			
107	Edna			1,026			
107	Grassy Creek #1			227			
107	Seneca II			1,779			
107	Meadows			28			
107	Hayden Gulch			553			
	Colorado Subtotal	66,500	2,900	13,060	700	2500	600
MONTANA 30-							
003	Decker Mines			11,129			
003	Absaloka			4,905			
003	Spring Creek			94			
013	Simmons Refining	6,000					
035	Westco	5,600					
065	Divide/Storm King			9			
065	P.M. Mine			11			
075	Coal Creek			64			
083	Savage			302			
085	Kenco Refining	4,600					
087	Big Sky			2,936			
087	Rosebud			10,402			
111	Cenex	40,400					

*Resource Activity in the West

Table II

WESTERN STATES WATER COUNCIL

ESTIMATES OF 1981 ANNUAL MINING AND REFINING WATER USE *

State County	Name	Refined Oil		Surface Coal		Processed U_3O_8	
		Bbl/Day	AF/yr	10^3Tons/yr	AF/yr	Tons/yr	AF/yr
MONTANA (Cont.)							
111	Conoco	52,500					
111	Exxon	45,000					
	Montana Subtotal	154,100	6,800	29,852	1,500		
NEVADA 32-							
023	Nevada Refining	4,000					
	Nevada Subtotal	4,000	200				
NEW MEXICO 35-							
007	West Ridge			600			
015	Navajo Refining	29,900					
025	Giant Industries	18,000					
025	Southern Union	36,100					
031	Kerr McGee					7,000	
031	Church Rock					4,000	
045	Caribou Four Corners	3,500					
045	Giant Industries	13,000					
045	Plateau Inc.	17,300					
045	Thriftway	7,500					
045	Burnham			40			
045	San Juan			4,538			
045	De-Na-Zin			13			
045	Navajo			7,733			
061	Bluewater					6,000	
061	L-Bar					1,600	
061	Milan					3,500	
	New Mexico Subtotal	125,300	5,500	12,924	600	22,100	5,500
TEXAS 48-							
001	Manges, Clinton Oil	10,000					
013	San Miguel Electric			718			
029	Flint Chemical	1,500					
029	Howell Hydrocarbons	10,000					
039	Copp, Dow Chemical	190,000					
039	Phillips Petroleum	180,000					
061	Petraco-Valley Oil	12,300					
061	RioGrande Crude	9,500					
061	Rio Grande Recovery	1,000					
071	Independent Refining	50,000					
071	Placid Refining	12,400					
083	Amistad Fuel			76			
127	Tesoro Petroleum	26,000					
135	Shell Oil	30,600					
141	Chevron U.S.A.	76,000					

*Resource Activity in the West

Table II

WESTERN STATES WATER COUNCIL

ESTIMATES OF 1981 ANNUAL MINING AND REFINING WATER USE *

State County	Name	Refined Oil		Surface Coal		Processed U_3O_8	
		Bbl/Day	AF/yr	10^3Tons/yr	AF/yr	Tons/yr	AF/yr
TEXAS	(Cont.)						
141	Texaco	17,000					
143	Thurber Coal			108			
161	Texas Utilities			5,909			
167	Amoco Oil	415,000					
167	Marathon Oil	69,500					
167	Texas City Refine	119,600					
177	Pioneer Refining	20,900					
183	Longview Refining	15,000					
183	Petrolite Corp.	600					
183	Shore Co.	1,000					
199	South Hampton Ref.	18,100					
201	Arco Pet. Products	222,000					
201	Brio Petroleum	12,000					
201	Charter Int'l.	68,000					
201	Crown Central Pet.	100,000					
201	Eddy Refining	3,500					
201	Exxon Co.	640,000					
201	Shell Oil	285,000					
203	ICI Americas			287			
215	Adobe Refining	5,200					
215	Listo Refining	5,000					
227	Cosden Oil	60,000					
233	Phillips Petroleum	95,000					
237	Eagle Refining	1,800					
245	American Petrofina	90,000					
245	Erickson Refining	40,000					
245	Gulf Oil	335,000					
245	Lauren Refining	5,000					
245	Mobil Oil	325,000					
245	Texaco, Inc.	402,000					
245	Texaco, Inc.	31,000					
245	Union Oil	120,000					
255	Chevron Resources					400	
255	Conoco, Inc.					400	
297	Exxon Minerals					500	
297	Sigmor Refining	40,000					
331	Alcoa-Sandow			3,415			
341	Diamond Shamrock	71,100					
355	Champlin Petroleum	155,000					
355	Coastal States Pet.	185,000					
355	Gulf States Oil	35,000					
355	Koch Refining	62,000					
355	Quintana Petrochem.	34,000					
355	Saber Refining	21,000					
355	Sentry Refining	30,000					
355	Southwestern Refine	116,600					
375	Texaco, Inc.	21,500					

*Resource Activity in the West

Table II

WESTERN STATES WATER COUNCIL

ESTIMATES OF 1981 ANNUAL MINING AND REFINING WATER USE*

State County	Name	Refined Oil		Surface Coal		Processed U_3O_8	
		Bbl/Day	AF/yr	10^3Tons/yr	AF/yr	Tons/yr	AF/yr
TEXAS	(Cont.)						
387	Ultra Oil	600					
395	Carbonit Refinery	11,000					
401	Texas Utilities			9,922			
409	Copano Refining	11,100					
409	Tipperary Refinery	10,200					
409	Uni Refining	39,400					
423	LaGloria Oil & Gas	29,300					
439	Texas Armada	4,300					
439	Winston Refining	20,000					
441	Pride Refining	44,000					
449	Dorchester Refining	26,500					
449	Texas Utilities			12,052			
475	Wickett Refining	8,000					
479	Farco Mining			277			
497	Liquid Energy	10,000					
499	Quitman Refining	6,600					
503	Thriftway, Inc.	2,500					
	Texas Subtotal	5,126,200	225,600	32,764	1,600	1,300	2,000
UTAH	49-					(1)	
011	Caribou Four Conrs.	8,300					
011	Dixon Oil	2,500					
011	Morrison	2,500					
011	Phillips	24,000					
011	WESRECO	12,700					
013	Plateau	10,000					
017	Shootering					Ø	
019	Moab					920	
035	Amoco	39,000					
035	Chevron	45,000					
035	Husky	25,000					
037	Lisbon					500	
037	White Mesa					800	
	Utah Subtotal	169,000	7,400			2,220	560
WASHINGTON	53-						
033	Chevron	5,500					
033	Palmer			6			
041	Centralia			4,800			
053	Sound Refining	7,700					
053	U.S. Oil & Ref.	21,400					
057	Shell	91,000					
057	Texaco	78,000					
065	Dawn					450	
065	Sherwood					2,000	
073	ARCO	110,000					

*Resource Activity in the West

(1) Utah Energy Department

Table II

WESTERN STATES WATER COUNCIL

ESTIMATES OF 1981 ANNUAL MINING AND REFINING WATER USE *

State County	Name	Refined Oil		Surface Coal		Processed U_3O_8	
		Bbl/Day	AF/yr	10^3Tons/yr	AF/yr	Tons/yr	AF/yr
WASHINGTON (Cont.)							
073	Mobil	71,500					
	Washington Sub.	385,100	16,900	4,806	200	2,450	600
WYOMING 56-							
003	Sage Creek	1,000					
005	Bell Ayre			16,106			
005	Eagle Butte			8,443			
005	Wyodak			2,084			
005	Caballo			1,974			
005	Rawhide			4,472			
005	Cordero			6,563			
005	Ft. Union			18			
005	Clovis Pt.			1,409			
005	Jacobs Ranch			8,246			
005	Black Thunder			10,549			
007	Sinclair	72,000					
007	Semino			4,672			
007	Medicine Bow			1,959			
007	Rosebud			2,148			
007	Sections 28 & 34			693			
007	Pathfinder					1,800	
007	Petrotonics					1,500	
009	Glenrock	3,200					
009	Dave Johnson			3,804			
009	Bear Creek					2,000	
009	Highland					3,200	
013	Federal American					950	
013	Luck McMill					2,500	
013	Split Rock					1,700	
017	Grass Creek			18			
021	Husky	28,800					
023	Southwestern	800					
023	Skull Point			846			
023	Elko-Sorenson			4,083			
025	AMOCO	48,000					
025	Little America	24,500					
025	Texaco	21,000					
025	E. Gus Hills					1,500	
027	C & H Refining	200					
029	Husky	11,500					
033	Big Horn			4,287			
035	Mountaineer	300					
035	Silver Eagle	2,900					
037	Black Butte			2,289			
037	Jim Bridger			6,435			
045	Glacier Park Co.	9,500					
045	Wyoming Refining	12,500					
	Wyoming Subtotal	236,200	10,400	91,098	4,600	15,150	3,800
	TOTAL	8,911,200	392,100	195,488	9,700	45,720	11,360

TABLE IIA

WESTERN STATES WATER COUNCIL

STATE ESTIMATES OF FRESH WATER USED FOR SECONDARY OIL RECOVERY

State	1980 Oil Produced 10^3Bbls	Fresh Water Injected for Oil Recovery AF/year	Comments from State sources
Arizona	406	Ø	All injection is with salt water
California	357,000	87,800	81,280 AF was the state total fresh water injected as steam. 5,100 AF was fresh water flooded into the Ventura basin and 1,400 AF was fresh water flooded into the Wilmington basin.
Colorado	29,802	Unknown	There are 38 secondary oil recovery projects in Colorado. Pumped fresh groundwater is a part of the injected fluid for several projects in northeast Colorado; and diverted White River water is part of the injected fluid for two projects in the Rangely field in northwest Colorado.
Idaho	Ø	Ø	
Montana	29,927	12,500	Marginally usable fresh water comes from some oil wells in the Cut Bank field and is surplus to reinjection needs there.
Nevada	881	Ø	Reinjection of brines only
New Mexico	75,315	8,000	Lea County only
Oregon	Ø	Ø	
Texas	931,078	77,300	Fresh water is 22% of the total water injected.
Utah	24,998	Unknown	Starting to measure fresh water volumes.
Washington	Ø	Ø	
Wyoming	114,133	20,000	Water pumped from the Madison formation for secondary oil recovery injection into the Powder River basin.
TOTAL	1,563,540	205,600	

TABLE III

WESTERN STATES WATER COUNCIL

ESTIMATED FRESH WATER USE BY COAL SLURRY PIPELINES

Pipeline; Company	County Source	Terminous	Miles	10^6Tons/yr	Status	AF/yr
Black Mesa; Southern California Edison Company	017 Arizona	Nevada	273	4	Existing	3,200
San Marco; Houston Natural Gas Conpany	055 Colorado	Texas	900	15	Water Source Litigation Pending	12,000
Aqua Train; W.R. Grace Co. Western Mining Division	081 Colorado	California	1,200	15.	In Planning Stage	12,000
Wy-Tex; Texas Eastern Corporation	087 Montana	Texas	1,260	22	Inactive	- -
Allen-Warner; Nevada Power Company	025 Utah	Nevada	183	6	On hold - being reevaluated	4,800
Pacific Bulk; Boeing Engineering and Construction	015 Utah	California	650	10	Inactive; Conceptual Design Only	- -
NICES; Northwest Pipeline & Gulf Interstate	005 Wyoming	Oregon	1,100	25	Inactive	- -
ETSI; Energy Transport Systems, Inc.	005 Wyoming	Arkansas	1,387	30	Operational in 1985	24,000
TOTAL				127		56,000

TABLE IV

WESTERN STATES WATER COUNCIL

ESTIMATED WATER USE FOR SYNFUEL PROJECTS

State County	Project	Operator	(1) Type	(2) Year	(3) Present Status	(4) Production Capacity Water		
						10^3BPD	10^6SCFD	AF/Year
COLORADO 08-								
045	Clear Creek	Chevron Oil	OS	1994	In Permit Stage	100		17,000
045		Cities Services	OS		Lease			- -
045	Pacific	Sohio et al	OS		2nd Round Applicant			- -
045	Colony	Exxon	OS	1989	Shut-down May 1982	47		- -
045	Parachute	Mobil Oil	OS		In Permit Stage	50		8,500
045	Silmon Simon	Shale Energy	OS		2nd Round Applicant			- -
045	Long Ridge	Union Oil	OS	1990	Phase I in Const.	50		8,500
045	Anvil Point	U.S. Naval Oil Sh.	OS		2nd Round Applicant			- -
081	Chokecherry	Energy Transition & W.R. Grace Co.	CL	1986	2nd Round Applicant	35		- -
103	BX	Equity Oil	OS		Lease			- -
103		Multi Mineral	OS		On Hold	50		- -
103	Logan Wash	Occidental	OS		Conducting Tests			- -
103	Cath. Bluffs	Occidental/Tenneco	OS	1989	On Hold	50		- -
103	Phillips	Phillips Petroleum	OS		Lease			- -
103	Rio Blanco C-a	Rio Blanco Oil Sh.	OS	1992	On Hold	80		- -
103		Superior Oil	OS	1987		12		- -
COLORADO TOTAL						474	- -	34,000

TABLE IV

WESTERN STATES WATER COUNCIL

ESTIMATED WATER USE FOR SYNFUEL PROJECTS

State County	Project	Operator	(1) Type	(2) Year	(3) Present Status	(4) Production Capacity 10^3BPD	(4) Production Capacity 10^6SCFD	Water AF/Year
MONTANA 30-								
003	Crow Tribe	Crow Tribe, Fluor, Pacific Coal Gas	CG	-	On Hold		125	- -
017	Pacific	Pacific Hydrocarbon	CO		On Hold			- -
021	Mobil	Mobil Oil	CL	1992	On Hold	100		- -
055	Montco	Montco	CG	-	In Permit Stage		Ø	- -
055	Redwater	Washington Nat Gas	CG		On Hold			- -
055	Timber Creek	Burlington Northern	CL	-		100		- -
075	Utah Int.	Utah International	CG		On Hold			- -
109	Tenneco	Tenneco Oil	CG	-	On Hold		250	- -
MONTANA TOTAL						200	375	- -
NEW MEXICO 35-								
045	Texas East	Texas Eastern and Utah International	CL	1990	On Hold	52		- -
061	San Mateo-Grants	Energy Transition	CL	1983	On Hold	24		- -
NEW MEXICO TOTAL						76	- -	- -
UTAH 49-								
007	Amoco	Amoco	TS		Lease Holder			- -
007	Sunnyside	Great National	TS	1987	2nd Round Applicant	40		- -
007	Rainbow	Enercor	TS	1985	Lease Holder	5		- -
007	P R Springs	Enercor	TS	1990		50		- -

TABLE IV

WESTERN STATES WATER COUNCIL

ESTIMATED WATER USE FOR SYNFUEL PROJECTS

State County	Project	Operator	(1) Type	(2) Year	(3) Present Status	(4) Production Capacity 10^3BPD	(4) Production Capacity 10^6SCFD	Water AF/Year
UTAH 49- (Cont.)								
007	Naval Oil Shale	Dept of Energy	OS	-	Reserve Only	-		
011	Demonstration	Chevron Research	OS	1983	Under Construction	0.2		NS
015	Emery Conversion	Mountain Fuel	CG	-	On Hold		275	- -
015	Western Char-Oil	Utah Power & Light	CL/G	-	On Hold			- -
017	Utah Resources	Utah Res. Int'l.	CL	-	On Hold			- -
019	P.R. Spring	C & A Companies	TS	1987	Leasehold;Planning	20		- -
019	International	Int. Hydrocarbon	CG &TS	NA	Conceptual Stage; 2nd Round Applicant	60		- -
035	Demonstration	Mtn.Fuel Resources	CG	1983			2	NS
047	Agency Draw	Geokinetics	OS	1987	2nd Round Applicant	16		- -
047	Wolf Den	Geokinetics	OS	1994	Producing Pilot; 2nd Round Applicant	50		- -
047	Cottonwd.Wash	Magic Circle Energy	OS	1988	On Hold; 2nd Round	32		- -
047	Paraho-Ute	Paraho Development	OS	1987	2nd Round Applicant	42		- -
047	White River	Sohio,Phillips,Sunco	OS	1993	Site Preparation	106		18,000
047	Sohio	Sohio Shale Oil	TS	1991	Conceptual	20		- -
047	Syntana	Synthetic Oil	OS	1994	DDA completed; Need Land Exchange	50		8,500
047	Sand Wash	Tosco	OS	1989	Leasehold; Planning	45		- -
047	Western	Western Tar Sands	TS	NA	Leasehold			- -
UTAH TOTAL						536	277	26,500

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WESTERN STATES WATER COUNCIL

ESTIMATED WATER USE FOR SYNFUEL PROJECTS

State County	Project	Operator	(1) Type	(2) Year	(3) Present Status	(4) Production 10^3BPD	Capacity 10^6SCFD	Water AF/Year
Texas 48-								
161	Freestone	Dow Chemical	CG		Discussion		-	
201	Baytown Refinery	Exxon	CL/CG	1981	Operating Research Pilot Plant	Bench Scale	Flared	0
201	(High BTU Gas)	TENN-U	CG		Discussion		-	
223	Yantis	Phillips Coal	CG		In Planning		250	7,000
323	(Tar Sands)	San Miguel	TS		Discussion	Unknown	-	
423	Troup	Exxon	CG	-	Cancelled (Own site)		-	
439	In Situ Gasification	Texas Utilities	CG	-	Abandoned Pilot Plant		-	
TEXAS TOTAL						-	250	7,000

TABLE IV

WESTERN STATES WATER COUNCIL

ESTIMATED WATER USE FOR SYNFUEL PROJECTS

State County	Project	Operator	(1) Type	(2) Year	(3) Present Status	(4) Production Capacity 10^3BPD	(4) Production Capacity 10^6SCFD	Water AF/Year
WYOMING 56-								
005	Rocky Hill	ARCO	CG/L		Experimental Testing			NS
005	Hampshire	Hampshire Energy	CL	1985	Negotiating with Synfuels Corp			- -
005	Mobil	Mobil Oil	CL	-	On Hold	-		- -
005	ThunderbirdII	Wold-Jenkins	CG		2nd Round Applicant			- -
007	Cherokee	Rocky Mtn Energy	CG	-	On Hold		125	- -
007		World Energy	CG		2md Round Applicant			- -
009	Wycoal Gas	Peabody Coal	CG	1987	Panhandle Eastern Withdrew		300	9,600
033	Lake DeSmet	Texaco	CG	-	Cancelled		250	- -
WYOMING TOTAL						- -	675	9,600
SIX STATE TOTAL						1,286	1,327	70,100

(1) Plant Type: CG = Coal Gasification; CL = Coal Liquification; CO = Coal-Oil Mixture; OS = Oil Shale; TS = Tar Sand.

(2) Operational Year as listed in the 1981 WESTPO Report, Energy Activity in the West.

(3) Project Status as listed in the yet to be published 1982 WESTPO Report, Resource Activity in the West.

(4) Production Capacity estimates from the yet to be published 1982 WESTPO Report, Supplemented by estimates reported in various news media sources.

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	ARIZONA		04-							
APS	Undertermined	GT	000	Oil	DR			50		5-87
SRP	Coronado 1	ST	001	Coal	ET	350		350		
SRP	Coronado 2	ST	001	Coal	ET	350		350		
SRP	Coronado 3	ST	001	Coal	ET			350		5-91
TEP	Springerville 1	ST	001	Coal	ET			350		6-85
TEP	Springerville 2	ST	001	Coal	ET			350		6-87
TEP	Springerville 3	ST	001	Coal	ET			350		6-91
AEPC	Aepco 1	ST	003	Coal	ET			275		1-90
AEPC	Apache CC 1	CA	003	Oil	ET	75		75		
AEPC	Apache CC 1	CT	003	NG	ET	10		10		
AEPC	Apache GT 2	GT	003	Oil	ET	20		20		
AEPC	Apache ST 2	ST	003	Coal	ET	175		175		
AEPC	Apache GT 3	GT	003	Oil	ET	63		63		
AEPC	Apache ST 3	ST	003	Coal	ET	175		175		
APS	Douglas GT 1	GT	003	Oil	DR	21		21		
SRP	Navajo 1	ST	005	Coal	ET	750		750		
SRP	Navajo 2	ST	005	Coal	ET	750		750		
SRP	Navajo 3	ST	005	Coal	ET	750		750		
APS	Ocotillo 1	ST	013	Oil	ET	115		115		
APS	Ocotillo 2	ST	013	Oil	ET	115		115		
APS	Ocotillo GT 1	GT	013	Oil	DR	56		56		
APS	Ocotillo GT 2	GT	013	Oil	DR	56		56		

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	ARIZONA (Continued)		04-							
APS	Palo Verde 1	NP	013	Nuc	ET			1270		5-83
APS	Palo Verde 2	NP	013	Nuc	ET			1270		5-84
APS	Palo Verde 3	NP	013	Nuc	ET			1270		5-86
APS	Phoenix CC 1	CW	013	WH	UK	24		24		
APS	Phoenix CC 1	CT	013	Oil	ET	51		51		
APS	Phoenix CC 2	CW	013	WH	UK	24		24		
APS	Phoenix CC 2	CT	013	Oil	ET	51		51		
APS	Phoenix CC 3	CW	013	WH	UK	24		24		
APS	Phoenix CC 3	CT	013	Oil	ET	51		51		
APS	Phoenix 4	ST	013	Oil	ET	33		33		
APS	Phoenix 5	ST	013	Oil	ET	12		12		
APS	Phoenix 6	ST	013	Oil	ET	63		63		
APS	Phoenix GT 1	GT	013	Oil	DR	56		56		
APS	Phoenix GT 2	GT	013	Oil	DR	56		56		
SRP	Agua Fria 1	ST	013	NG	ET	111		111		
SRP	Agua Fria 2	ST	013	NG	ET	111		111		
SRP	Agua Fria 3	ST	013	NG	ET	180		180		
SRP	Agua Fria 4	GT	013	Oil	DR	69		69		
SRP	Agua Fria 5	GT	013	Oil	DR	64		64		
SRP	Agua Fria 6	GT	013	Oil	DR	64		64		
SRP	Crosscut	ST	013	Oil	ET	32		32		
SRP	Kyrene 1	ST	013	NG	ET	34		34		
SRP	Kyrene 2	ST	013	NG	ET	70		70		
SRP	Kyrene 3	GT	013	NG	DR	51		51		
SRP	Kyrene 4	GT	013	NG	DR	51		51		
SRP	Kyrene 5	GT	013	NG	DR	47		47		
SRP	Kyrene 6	GT	013	NG	DR	47		47		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	ARIZONA (Continued)		04-							
SRP	San Tan 1	CW	013	WH	ET	24		24		
SRP	San Tan 1	CT	013	Oil	ET	48		48		
SRP	San Tan 2	CW	013	WH	ET	24		24		
SRP	San Tan 2	CT	013	Oil	ET	48		48		
SRP	San Tan 3	CW	013	WH	ET	24		24		
SRP	San Tan 3	CT	013	Oil	ET	48		48		
SRP	San Tan 4	CW	013	WH	ET	24		24		
SRP	San Tan 4	CT	013	Oil	ET	48		48		
APS	Cholla 1	ST	017	Coal	CP	116		116		
APS	Cholla 2	ST	017	Coal	CP	235		235		
APS	Cholla 3	ST	017	Coal	ET	245		245		
APS	Cholla 4	ST	017	Coal	ET	350		350		
APS	Cholla 5	ST	017	Coal	ET			340		6-90
APS	Undetermined	Unk	017	Unk	ET			150		6-91
TEP	Demoss Petrie 1	ST	019	Oil	ET	15		15		
TEP	Demoss Petrie 2	ST	019	Oil	ET	13		13		
TEP	Demoss Petrie 3	ST	019	Oil	ET	24		24		
TEP	Demoss Petrie 4	ST	019	Oil	ET	46		46		
TEP	Demoss Petrie GT 1	GT	019	Oil	DR	47		47		
TEP	Irvington 1	(ST	019	Oil	ET	81				
		(		Coal				81		5-87
TEP	Irvington 2	(ST	019	Oil	ET	81				
		(		Coal				81		5-87
TEP	Irvington 3	(ST	019	Oil	ET	104				
		(		Coal				104		5-86
TEP	Irvington 4	(ST	019	Oil	ET	156				
		(		Coal				156		5-85
TEP	Irvington GT 1	GT	019	Oil	DR	24		24		
TEP	Irvington GT 2	GT	019	Oil	DR	25		25		
TEP	Irvington GT 3	GT	019	Oil	DR	25		25		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	ARIZONA (Continued)		04-							
TEP	North Loop GT 1	GT	019	Oil	DR	25		25		
TEP	North Loop GT 2	GT	019	Oil	DR	25		25		
TEP	North Loop GT 3	GT	019	Oil	DR	23		23		
TEP	North Loop GT 4	GT	019	Oil	DR	25		25		
APS	Saguaro 1	ST	021	Oil	ET	115		115		
APS	Saguaro 2	ST	021	Oil	ET	99		99		
APS	Saguaro GT 1	GT	021	Oil	DR	55		55		
APS	Saguaro GT 2	GT	021	Oil	DR	55		55		
CUC	Citizens 1-4	IC	023	Oil	UK	3		3		
SCE	Axis GT 1	GT	027	Oil	DR	22		22		
APS	Yucca 1	ST	027	Oil	ET	75		75		
APS	Yucca GT 1	GT	027	Oil	DR	22		22		
APS	Yucca GT 2	GT	027	Oil	DR	22		22		
APS	Yucca GT 3	GT	027	Oil	DR	57		57		
APS	Yucca GT 4	GT	027	Oil	DR	56		56		
	Subtotals			Oil		2,635	14.8	2,263	10.3	
				NG		712	5.3	712	5.3	
				Coal		4,246	49.7	6,683	78.7	
				Nuc				3,810	57.2	
				Other		168	1.1	318	2.9	
	Subtotal					7,761	70.9	13,786	154.4	
	Not Listed			Hydro		2,127		2,127		
	ARIZONA TOTAL					9,888	70.9	15,913	154.4	

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA		06-							
PG&E	Generic Biomass	ST	000	Bio	UK			25		6-89
PG&E	Generic Biomass	CG	000	Bio	UK			25		6-90
PG&E	Generic Biomass	CG	000	Bio	UK			25		6-91
PG&E	Generic Cogeneration	CG	000	Bio	UK			25		6-89
PG&E	Generic Cogeneration	CG	000	Bio	UK			25		6-90
PG&E	Generic Cogeneration	CG	000	Bio	UK			25		6-91
PG&E	Hot Water Geothermal	GE	000	GST	GC			50		1-90
PG&E	Hot Water Geothermal	GE	000	GST	GC			50		1-91
PG&E	Hot Water Geothermal	GE	000	GST	GC			50		1-92
SCE	Cogeneration	CG	000	Unk	UK			20		8-82
SCE	Large Cogeneration	CG	000	Unk	UK			75		6-86
SCE	Large Cogeneration	CG	000	Unk	UK			75		6-87
SCE	Large Cogeneration	CG	000	Unk	UK			75		6-88
SCE	Large Cogeneration	CG	000	Unk	UK			75		6-89
SCE	Large Cogeneration	CG	000	Unk	UK			75		6-90
SCE	Small Cogeneration	CG	000	WH	UK			8		1-82
SCE	Small Cogeneration	CG	000	Unk	UK			26		8-83
SCE	Small Cogeneration	CG	000	Unk	UK			40		8-84
SCE	Small Cogeneration	CG	000	Unk	UK			22		8-85
SCE	Small Cogeneration	CG	000	Unk	UK			30		6-91
PG&E	Oakland 1	GT	001	Oil	DR	54		54		
PG&E	Oakland 2	GT	001	Oil	DR	54		54		
PG&E	Oakland 3	GT	001	Oil	DR	54		54		
PG&E	Avon	CG	013	Oil	UK	46		46		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA (Cont.)		06-							
PG&E	Crown Zellerback	CG	013	NG	UK			35		1-84
PG&E	Contra Costa 1	ST	013	Oil	OT	116		116		
PG&E	Contra Costa 2	ST	013	Oil	OT	116		116		
PG&E	Contra Costa 3	ST	013	Oil	OT	116		116		
PG&E	Contra Costa 4	ST	013	Oil	OT	117		117		
PG&E	Contra Costa 5	ST	013	Oil	OT	115		115		
PG&E	Contra Costa 6	ST	013	Oil	OT	340		340		
PG&E	Contra Costa 7	ST	013	Oil	OT	340		340		
PG&E	Martinez	CG	013	Oil	UK	46		46		
PG&E	Oleum 1	CG	013	Oil	UK	41		41		
PG&E	Oleum 2	CG	013	Oil	UK	46		46		
PG&E	Pittsburg 1	ST	013	Oil	SW	153		153		
PG&E	Pittsburg 2	ST	013	Oil	SW	163		163		
PG&E	Pittsburg 3	ST	013	Oil	SW	153		153		
PG&E	Pittsburg 4	ST	013	Oil	SW	163		163		
PG&E	Pittsburg 5	ST	013	Oil	SW	325		325		
PG&E	Pittsburg 6	ST	013	Oil	SW	325		325		
PG&E	Pittsburg 7	ST	013	Oil	SW	720		720		
PG&E	Union Oil	CG	013	WH	UK			28		12-84
PG&E	Humbolt Bay 1	ST	023	Oil	SW	52		52		
PG&E	Humbolt Bay 2	ST	023	Oil	SW	53		53		
PG&E	Wood Waste	ST	023	Bio	UK			40		6-84
IID	Brawley GT 1	GT	025	Oil	DR	9		9		
IID	Brawley GT 2	GT	025	Oil	DR	9		9		
IID	Brawley Diesel 1-8	IC	025	Oil	DR	12		12		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	CALIFORNIA (Cont)		06-							
IID	El Centro 1	ST	025	Oil	ET	22		22		
IID	El Centro 2	ST	025	Oil	ET	30		30		
IID	El Centro 3	ST	025	Oil	ET	48		48		
IID	El Centro 4	ST	025	Oil	ET	80		80		
IID	Rockwood GT 1	GT	025	Oil	DR	25		25		
IID	Rockwood GT 2	GT	025	Oil	DR	25		25		
LDWP	N Brawley 2	GE	025	GST	ET			44		10-88
LDWP	N Brawley 3	GE	025	GST	ET			44		10-89
SCE	Geothermal 1	GE	025	GST	UK			5		6-84
SCE	Geothermal 2	GE	025	GST	UK			9		6-84
SCE	Geothermal 3	GE	025	GST	UK			47		11-84
SCE	Geothermal 4	GE	025	GST	UK			52		6-87
SCE	Geothermal 5	GE	025	GST	UK			52		6-88
SCE	Geothermal 6	GE	025	GST	UK			52		6-89
SCE	Geothermal 7	GE	025	GST	UK			156		6-90
SDGE	Geothermal 1	GE	025	GST	UK			37		1-88
SDGE	Niland 1	GE	025	GST	UK			24		1-84
SDGE	Niland 2	GE	025	GST	UK			49		1-85
PG&E	Farmer Co-op	CG	029	Bio	UK	2		2		
PG&E	First Chowchilla	GT	029	NG	UK			10		12-82
PG&E	Kern 1	ST	029	Oil	OT	74		Ø		1-89
PG&E	Kern 2	ST	029	Oil	OT	106		Ø		1-89
PG&E	Lousiana Pacific	CG	029	Bio	UK			25		6-82

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA (Cont.)		06-							
PG&E	Lousianna Pac.-Stand.	CG	029	Bio	UK			3		4-82
PG&E	Oil Field Cogen	GG	029	Oil	UK	1		1		
PG&E	Oil Field /Ref Cogen	CG	029	Oil	UK			100		7-84
PG&E	Oil Field/Ref Cogen	CG	029	Oil	UK			100		7-85
PG&E	Oil Field/Ref Cogen	CG	029	Oil	UK			100		7-86
PG&E	Oil Field/Ref Cogen	CG	029	Oil	UK			130		7-87
PG&E	So Cal Cymric	CG	029	NG	UK			3		1-82
PG&E	So Cal Kern	CG	029	Oil	UK			4		6-82
PG&E	So Cal Taft	CG	029	NG	UK			5		1-82
PG&E	SUP Farming	ST	029	Bio	UK			5		7-82
PG&E	Ten Section 1	CG	029	Oil	UK			3		11-82
PG&E	Ten Section 2	CG	029	Oil	UK			5		1-86
CDWR	Bottle Rock	GE	033	GST	GC			55		6-84
PG&E	Geysers 16	GE	033	GST	GC			110		6-85
PG&E	Geysers 19	GE	033	GST	GC			55		6-88
PG&E	Geysers 21	GE	033	GST	GC			110		12-88
CDWR	Honey Lake Hybrid	CG	035	Bio	UK			55		12-86
BURB	Magnolia 2	CW	037	WH	DR			10		5-83
BURB	Magnolia 3	ST	037	Oil	ET	21		Ø		10-83
BURB	Magnolia 4	ST	037	Oil	ET	28		Ø		10-87
BURB	Magnolia 5	GT	037	Oil	DR	22		22		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA (Cont.)		06-							
BURB	Olive 1	ST	037	Oil	ET	46		46		
BURB	Olive 2	ST	037	Oil	ET	53		53		
BURB	Olive 3	GT	037	Oil	DR	24		24		
BURB	Olive 4	(GT	037	Oil	DR	31				
		(CT		NG	DR			33		3-83
GLEN	Grayson 1	CW	037	WH	ET	11		11		
GLEN	Grayson 2	CW	037	WH	ET	12		12		
GLEN	Grayson 3	ST	037	Oil	ET	21		Ø		7-88
GLEN	Grayson 4	ST	037	Oil	ET	47		47		
GLEN	Grayson 5	ST	037	Oil	ET	49		49		
GLEN	Grayson 6	GT	037	Oil	DR	23		23		
GLEN	Grayson 7	GT	037	Oil	DR	30		30		
GLEN	Grayson 8	CT	037	Oil	DR	75		75		
LDWP	Cogeneration	CG	037	Unk	UK			50		6-83
LDWP	Cogeneration	CG	037	Unk	UK			80		6-85
LDWP	Harbor 1	ST	037	Oil	SW	72		Ø		6-87
LDWP	Harbor 2	ST	037	Oil	SW	67		Ø		6-88
LDWP	Harbor 3	ST	037	Oil	SW	86		Ø		6-89
LDWP	Harbor 4	ST	037	Oil	SW	86		Ø		6-89
LDWP	Harbor 5	ST	037	Oil	SW	86		86		
LDWP	Harbor 6	GT	037	Oil	SW	19		19		
LDWP	Harbor 7	GT	037	Oil	SW	19		19		
LDWP	Harbor 8	GT	037	Oil	SW	19		19		
LDWP	Harbor 9	GT	037	Oil	SW	19		19		
LDWP	Haynes 1	ST	037	Oil	SW	222		222		
LDWP	Haynes 2	ST	037	Oil	SW	232		232		
LDWP	Haynes 3	ST	037	Oil	SW	220		220		
LDWP	Haynes 4	ST	037	Oil	SW	227		227		
LDWP	Haynes 5	ST	037	Oil	SW	341		341		
LDWP	Haynes 6	ST	037	Oil	SW	341		341		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA (Cont.)		06-							
LDWP	Scattergood 1	ST	037	Oil	SW	179		179		
LDWP	Scattergood 2	ST	037	Oil	SW	179		179		
LDWP	Scattergood 3	ST	037	NG	SW	284		284		
LDWP	Valley 1	ST	037	Oil	ET	94		94		
LDWP	Valley 2	ST	037	Oil	ET	101		101		
LDWP	Valley 3	ST	037	Oil	ET	164		164		
LDWP	Valley 4	ST	037	Oil	ET	160		160		
PASA	Broadway 1	ST	037	Oil	ET	45		Ø		1-90
PASA	Broadway 2	ST	037	Oil	ET	45		45		
PASA	Broadway 3	ST	037	Oil	ET	71		71		
PASA	Glenarm 1	GT	037	Oil	ET	26		26		
PASA	Glenarm 2	GT	037	Oil	ET	26		26		
PASA	Glenarm 9	ST	037	Oil	ET	45		Ø		1-83
SCE	Alamitos 1	ST	037	Oil	SW	175		Ø		1-86
SCE	Alamitos 2	ST	037	Oil	SW	175		Ø		1-86
SCE	Alamitos 3	ST	037	Oil	SW	320		320		
SCE	Alamitos 4	ST	037	Oil	SW	320		320		
SCE	Alamitos 5	ST	037	Oil	SW	480		480		
SCE	Alamitos 6	ST	037	Oil	SW	480		480		
SCE	Alamitos 7	GT	037	Oil	SW	133		133		
SCE	El Segundo 1	ST	037	Oil	SW	175		Ø		1-86
SCE	El Segundo 2	ST	037	Oil	SW	175		Ø		1-86
SCE	El Segundo 3	ST	037	Oil	SW	335		335		
SCE	El Segundo 4	ST	037	Oil	SW	335		335		
SCE	Garden State 1	CG	037	Oil	ET	12		12		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	CALIFORNIA (Cont.)		06-							
SCE	Long Beach 8 cc	CT	037	Oil	SW	226		226		
SCE	Long Beach 8 cc	CW	037	WH	SW	77		77		
SCE	Long Beach 9 cc	CT	037	Oil	SW	169		169		
SCE	Long Beach 9 cc	CW	037	WH	SW	58		58		
SCE	Long Beach 11	ST	037	Oil	SW	106		Ø		1-85
SCE	Proctor Gamble	CG	037	NG	UK			8		1-82
SCE	Redondo Beach 1	ST	037	Oil	SW	74		Ø		1-85
SCE	Redondo Beach 2	ST	037	Oil	SW	74		Ø		1-85
SCE	Redondo Beach 3	ST	037	Oil	SW	70		Ø		1-85
SCE	Redondo Beach 4	ST	037	Oil	SW	74		Ø		1-85
SCE	Redondo Beach 5	ST	037	Oil	SW	175		Ø		1-86
SCE	Redondo Beach 6	ST	037	Oil	SW	175		Ø		1-86
SCE	Redondo Beach 7	ST	037	Oil	SW	480		480		
SCE	Redondo Beach 8	ST	037	Oil	SW	480		480		
PG&E	Biomass Cpl	ST	039	Bio	UK			50		10-84
PG&E	Moss Landing 1	ST	053	Oil	SW	116		Ø		1-91
PG&E	Moss Laneing 2	ST	053	Oil	SW	115		115		
PG&E	Moss Landing 3	ST	053	Oil	SW	117		117		
PG&E	Moss Landing 4	ST	051	Oil	SW	117		117		
PG&E	Moss Landing 5	ST	053	Oil	SW	117		117		
PG&E	Moss Landing 6	ST	053	Oil	SW	739		739		
PG&E	Moss Landing 7	ST	053	Oil	SW	739		739		
PG&E	Moss Lndg.Gas Expand.	CG	053	NG	UK			10		6-85
PG&E	Texaco	CG	053	Oil	UK			233		1-87
PG&E	Napa State Hosp. 1	CG	055	NG	UK			2		1-82
PG&E	Napa State Hosp. 2	CG	055	NG	UK			1		6-82

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	CALIFORNIA (Cont.)		06-							
SCE	Huntington Beach 1	ST	059	Oil	SW	215		215		
SCE	Huntington Beach 2	ST	059	Oil	SW	215		215		
SCE	Huntington Beach 3	ST	059	Oil	SW	215		90		1-87
SCE	Huntington Beach 4	ST	059	Oil	SW	225		Ø		1-91
SCE	Huntington Beach 5	GT	059	Oil	DR	133		133		
SPP	Kings Beach	IC	061	Oil	DR	17		17		
SPP	Portola	IC	063	Oil	DR	6		6		
IID	Coachella GT 1	GT	065	Oil	DR	20		20		
IID	Coachella GT 2	GT	065	Oil	DR	20		20		
IID	Coachella GT 3	GT	065	Oil	DR	20		20		
IID	Coachella GT 4	GT	065	Oil	DR	20		20		
PG&E	Biomass Imotek	ST	067	Bio	UK			8		1-82
PG&E	Sierra Pacific	CG	067	Bio	UK	6		6		
SMUD	Rancho Seco 1	NP	067	Nuc	ET	875		875		
SCE	Cool Water 1	ST	071	Oil	ET	65		65		
SCE	Cool Water 2	ST	071	Oil	ET	81		81		
SCE	Cool Water 3 CC	CT	071	Oil	ET	136		136		
SCE	Cool Water 3 CC	CA	071	WH	ET	105		105		
SCE	Cool Water 4 CC	CT	071	Oil	ET	136		136		
SCE	Cool Water 4 CC	CA	071	WH	ET	105		105		
SCE	Etiwanda 1	ST	071	Oil	ET	132		Ø		1-86
SCE	Etiwanda 2	ST	071	Oil	ET	132		Ø		1-86
SCE	Etiwanda 3	ST	071	Oil	ET	320		320		
SCE	Etiwanda 4	ST	071	Oil	ET	320		320		
SCE	Etiwanda 5	GT	071	Oil	ET	126		126		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	CALIFORNIA (Cont.)		06-							
SCE	Highgrove 1	ST	071	Oil	ET	32		Ø		1-86
SCE	Highgrove 2	ST	071	Oil	ET	33		Ø		1-86
SCE	Highgrove 3	ST	071	Oil	ET	44		Ø		1-86
SCE	Highgrove 4	ST	071	Oil	ET	45		Ø		1-86
SCE	Ivanpah 1	ST	071	Coal	ET			500		6-91
SCE	San Bernardino 1	ST	071	Oil	ET	63		Ø		1-86
SCE	San Bernardino 2	ST	071	Oil	ET	63		Ø		1-86
SCE	San Onofre 1	NP	073	Nuc	SW	436		436		
SCE	San Onofre 2	NP	073	Nuc	SW			1100		6-82
SCE	San Onofre 3	NP	073	Nuc	SW			1100		7-83
SDGE	Division GT 1	GT	073	Oil	DR	16		16		
SDGE	El Cajon GT 1	GT	073	Oil	DR	17		17		
SDGE	Encina 1	ST	073	Oil	SW	100		100		
SDGE	Encina 2	ST	073	Oil	SW	102		102		
SDGE	Encina 3	ST	073	Oil	SW	108		108		
SDGE	Encina 4	ST	073	Oil	SW	287		287		
SDGE	Encina 5	ST	073	Oil	SW	320		320		
SDGE	Encina GT 1	GT	073	Oil	DR	16		16		
SDGE	Kearny GT 1	GT	073	Oil	DR	17		17		
SDGE	Kearny GT 2 (ABCD)	GT	073	Oil	DR	65		65		
SDGE	Kearny GT 3 (ABCD)	GT	073	Oil	DR	65		65		
SDGE	Miramar GT 1 (AB)	GT	073	Oil	DR	38		38		
SDGE	Naval Station GT 1	CG	073	Oil	DR	23		23		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA (Cont.)		06-							
SDGE	North Island GT 1	GT	073	Oil	DR	21		21		
SDGE	North Island GT 2	CG	073	Oil	DR	20		20		
SDGE	NTC GT 1	CG	073	Oil	UK	16		16		
SDGE	Rohr GT 1	CG	073	Oil	UK	1		1		
SDGE	Silver Gate 1	ST	073	Oil	SW	38		38		
SDGE	Silver Gate 2	ST	073	Oil	SW	64		64		
SDGE	Silver Gate 3	ST	073	Oil	SW	64		64		
SDGE	Silver Gate 4	ST	073	Oil	SW	64		64		
SDGE	South Bay 1	ST	073	Oil	SW	140		140		
SDGE	South Bay 2	ST	073	Oil	SW	148		148		
SDGE	South Bay 3	ST	073	Oil	SW	198		198		
SDGE	South Bay 4	ST	073	Oil	SW	220		220		
SDGE	South Bay GT 1	GT	073	Oil	DR	18		18		
SDGE	Station B	ST	073	Oil	SW	90		90		
PG&E	Hunter's Point 1	GT	075	Oil	SW	49		49		
PG&E	Hunter's Point 2	ST	075	Oil	SW	107		Ø		1-91
PG&E	Hunter's Point 3	ST	075	Oil	SW	107		Ø		1-91
PG&E	Hunter's Point 4	ST	075	Oil	SW	163		163		
PG&E	Potrero 3	ST	075	Oil	SW	207		207		
PG&E	Potrero 4	GT	075	Oil	DR	49		49		
PG&E	Potrero 5	GT	075	Oil	DR	49		49		
PG&E	Potrero 6	GT	075	Oil	DR	49		49		
PG&E	Sld Waste Recovery	ST	075	Ref	UK			40		10-75

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA (Cont.)		06-							
PG&E	Cogen-Diam. Sunsweet	CA	077	Bio	UK	5		5		
PG&E	Diablo Canyon 1	NP	079	Nuc	SW			1,084		8-82
PG&E	Diablo Canyon 2	NP	079	Nuc	SW			1,106		4-83
PG&E	Morro Bay 1	ST	079	Oil	SW	163		163		
PG&E	Morro Bay 2	ST	079	Oil	SW	163		163		
PG&E	Morro Bay 3	ST	079	Oil	SW	338		338		
PG&E	Morro Bay 4	ST	079	Oil	SW	338		338		
PG&E	Pyro Sol	CG	081	Ref	UK			4		1-82
SCE	Ellwood 1	GT	083	Oil	DR	48		48		
SNCL	Cogeneration	CG	085	NG	DR	6		6		
PG&E	Lockheed Sunnyvale	CG	085	NG	UK			50		11-83
PG&E	Biomass Hudson Lumber	ST	089	Bio	UK			6		10-82
CDWR	South Geysers	GE	097	GST	GC			55		7-85
NCPA	Geothermal Proj. 1	GE	097	GST	GC			53		9-82
NCPA	Geothermal Proj. 2	GE	097	GST	GC			53		9-82
PG&E	Oxy Geothermal	GE	097	GST	GC			80		6-84
PG&E	Geysers 1	GE	097	GST	GC	11		11		
PG&E	Geysers 2	GE	097	GST	GC	13		13		
PG&E	Geysers 3	GE	097	GST	GC	27		27		
PG&E	Geysers 4	GE	097	GST	GC	27		27		
PG&E	Geysers 5	GE	097	GST	GC	53		53		
PG&E	Geysers 6	GE	097	GST	GC	53		53		

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	CALIFORNIA (Cont)		06-							
PG&E	Geysers 7	GE	097	GST	GC	53		53		
PG&E	Geysers 8	GE	097	GST	GC	53		53		
PG&E	Geysers 9	GE	097	GST	GC	53		53		
PG&E	Geysers 10	GE	097	GST	GC	53		53		
PG&E	Geysers 11	GE	097	GST	GC	106		106		
PG&E	Geysers 12	GE	097	GST	GC	106		106		
PG&E	Geysers 13	GE	097	GST	GC	135		135		
PG&E	Geysers 14	GE	097	GST	GC	110		110		
PG&E	Geysers 15	GE	097	GST	GC	55		55		
PG&E	Geysers 17	GE	097	GST	GC			110		12-82
PG&E	Geysers 18	GE	097	GST	GC			110		5-83
PG&E	Geysers 20	GE	097	GST	GC			110		3-86
PG&E	Geysers 22	GE	097	GST	GC			110		6-88
PG&E	Geysers 23	GE	097	GST	GC			110		6-89
PG&E	Geysers 24	GE	097	GST	GC			110		6-91
PG&E	Wild Well Geo. Proj	GE	097	GST	GC			5		6-84
SMUD	Geothermal 1	GE	097	GST	GC			55		12-83
SMUD	Geothermal 2	GE	097	GST	GC			55		1-87
MID	McClure 1	GT	099	Oil	DR	49		49		
MID	MCClure 2	GT	099	Oil	DR	49		49		
PG&E	Compressor Cogen	CG	103	WH	UK			4		2-82
SCE	Mandalay 1	ST	111	Oil	SW	215		215		
SCE	Mandalay 1	ST	111	Oil	SW	215		215		
SCE	Mandalay 3	GT	111	Oil	SW	140		140		
SCE	Ormond Beach 1	ST	111	Oil	SW	750		750		
SCE	Ormond Beach 2	ST	111	Oil	SW	750		750		

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	CALIFORNIA (Cont.)		06-							
PG&E	Cogeneration	CG	113	Oil	UK	3		3		
	Subtotals			Oil		24,199	35.0	21,530	29.3	
				NG		290	NS	437	.7	
				Coal				500	6.0	
				Nuc		1,311	13.1	5,701	13.1	
				Other		1,289	1.6	4,435	35.6	
	Subtotal					27,089	49.7	32,603	84.7	
	Not Listed			Hydro		10,319		13,342		
				Sun				395		
				Wind				246		
				Other				65		
	CALIFORNIA TOTAL					37,408	49.7	46,651	84.7	

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	COLORADO		08-							
PSC	Cherokee 1	ST	001	Coal	ET	104		104		
PSC	Cherokee 2	ST	001	Coal	ET	107		107		
PSC	Cherokee 3	ST	001	Coal	ET	158		158		
PSC	Cherokee 4	ST	001	Coal	ET	339		339		
PSC	Cherokee Diesel	IC	001	Oil	DR	3		3		
PSC	Alamosa 4	ST	003	NG	ET	2		Ø		9-83
PSC	Alamosa 5	ST	003	NG	ET	5		Ø		9-83
PSC	Alamosa 6	ST	003	NG	ET	10		Ø		9-83
PSC	Alamosa Terminal 1	GT	003	NG	DR	16		16		
PSC	Alamosa Terminal 2	GT	003	NG	DR	14		14		
PSC	Valmont 1-4	ST	013	NG	CP	72		72		
PSC	Valmont 5	ST	013	Coal	CP	169		169		
PSC	Valmont 6	GT	013	NG	DR	44		44		
USUC	Delta 1	IC	029	NG	DR	1		1		
USUC	Delta 6	IC	029	NG	DR	1		1		
USUC	Delta 7	IC	029	NG	DR	2		2		
PSC	Arapahoe 1	ST	031	Coal	ET	45		45		
PSC	Arapahoe 2	ST	031	Coal	ET	45		45		
PSC	Arapahoe 3	ST	031	Coal	ET	45		45		
PSC	Arapahoe 4	ST	031	Coal	ET	101		101		
PSC	Zuni 1	ST	031	NG	ET	42		42		
PSC	Zuni 2	ST	031	NG	ET	68		68		
CCS	George Birdsall 1	ST	041	NG	ET	17		17		
CCS	George Birdsall 2	ST	041	NG	ET	17		17		
CCS	George Birdsall 3	ST	041	NG	ET	23		23		

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	COLORADO (Continued)		08-							
CCS	Martin Drake 1	ST	041	NG	ET	4		4		
CCS	Martin Drake 3	ST	041	NG	ET	4		4		
CCS	Martin Drake 4	ST	041	NG	ET	10		10		
CCS	Martin Drake 5	ST	041	Coal	ET	52		52		
CCS	Martin Drake 6	ST	041	Coal	ET	80		80		
CCS	Martin Drake 7	ST	041	Coal	ET	138		138		
CCS	R D Nixon 1	ST	041	Coal	ET	201		201		
SCPC	W N Clark 1	ST	043	Coal	OT	19		19		
SCPC	W N Clark 2	ST	043	Coal	OT	24		24		
TSGT	Burlington 1	GT	063	Oil	DR	50		50		
TSGT	Burlington 2	GT	063	Oil	DR	50		50		
PRPA	Rawhide 1	ST	069	Coal	ET			250		4-84
PSC	Cameo 1	ST	077	Coal	OT	24		24		
PSC	Cameo 2	ST	077	Coal	OT	49		49		
PSC	Fruita 1	GT	077	NG	DR	17		17		
CUEA	Craig 2	ST	079	Coal	ET	417		417		
CUEA	Craig 1	ST	081	Coal	ET	417		417		
CUEA	Craig 3	ST	081	Coal	ET			400		10-83
CUEA	Southwest 1	ST	083	Coal	ET			400		10-87
CUEA	Southwest 2	ST	083	Coal	ET			400		10-89
CUEA	Bullock 1	ST	085	Coal	ET	6		6		
CUEA	Bullock 2	ST	085	Coal	ET	6		6		

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	COLORADO (Continued)		08-							
CUEA	Nucla 1	ST	085	Coal	ET	12		12		
CUEA	Nucla 2	ST	085	Coal	ET	12		12		
CUEA	Nucla 3	ST	085	Coal	ET	12		12		
PSC	Pawnee 1	ST	087	Coal	ET	485		485		
SCPC	Rocky Ford 1	ST	089	NG	ET	8		8		
SCPC	Rocky Ford Diesel	IC	089	Oil	DR	10		10		
LUB	Lamar Plt 2	ST	099	NG	OT	3		Ø		1-91
LUB	Lamar Plt 3	IC	099	Oil	OT	1		1		
LUB	Lamar Plt 4	IC	099	Oil	OT	1		1		
LUB	Lamar Plt 5	ST	099	NG	OT	6		Ø		1-91
LUB	Lamar Plt 6	ST	099	NG	OT	28		28		
PSC	Southeast 1	ST	099	Coal	ET			485		4-87
PSC	Southeast 2	ST	099	Coal	ET			485		4-89
PSC	Comanche 1	ST	101	Coal	ET	325		325		
PSC	Comanche 2	ST	101	Coal	ET	335		335		
SCPC	Pueblo 2	ST	101	NG	CP	8		Ø		7-91
SCPC	Pueblo 3	ST	101	NG	CP	19		19		
SCPC	Pueblo Diesels	IC	101	Oil	DR	10		10		
CUEA	Hayden 1	ST	107	Coal	ET	184		184		
CUEA	Hayden 2	ST	107	Coal	ET	262		262		
PSC	Fort Lupton 1	GT	123	NG	DR	40		40		
PSC	Fort Lupton 2	GT	123	NG	DR	40		40		
PSC	Ft St Vrain 1	NP	123	Nuc	ET	200		275		4-86

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	COLORADO (Continued)		08-							
TSGT	Republican River 1	GT	125	Oil	DR	65		65		
TSGT	Republican River 2	GT	125	Oil	DR	65		65		
TSGT	Republican River 3	GT	125	Oil	DR	65		65		
	Subtotals			Oil		320	NS	320	NS	
				NG		521	3.2	487	3.0	
				Coal		4,173	48.3	6,593	77.1	
				Nuc		200	3.0	275	4.1	
	Subtotal					5,214	54.5	7,675	84.2	
	Not Listed			Hydro		691		890		
	COLORADO TOTAL					5,905	54.5	8,565	84.2	

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	IDAHO		16-							
IPC	Cogen No. 1	CG	000	Unk	UK			15		6-85
IPC	Cogen No. 2	CG	000	Unk	UK			20		6-87
IPC	Cogen No. 3	CG	000	Unk	UK			20		6-89
IPC	Cogen No. 4	CG	000	Unk	UK			25		6-89
IPC	Tamarak	GC	003	Bio	ET			5		6-83
IPC	Wood River	GT	013	NG	DR	50		50		
BF	Bonners Ferry	IC	021	Oil	DR	2		2		
	Subtotals			Oil		2	NS	2	NS	
				NG		50	NS	50	NS	
				Other				85	.4	
	Subtotal			.		52	NS	137	.4	
	Not Listed			Hydro		2,446		2,912		
	IDAHO TOTAL					2,498	NS	3,049	.4	

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	MONTANA		30-							
MPC	Thermal	ST	013	Coal	ET			330		7-89
MDU	Miles City GT	GT	017	NG	DR	21		21		
MDU	Glendive	ST	021	NG	OT	6		6		
MDU	Glendive GT	GT	021	NG	DR	26		26		
MDU	Lewis & Clark	ST	083	Coal	OT	44		44		
MPC	Colstrip 1	ST	087	Coal	ET	330		330		
MPC	Colstrip 2	ST	087	Coal	ET	330		330		
MPC	Colstrip 3	ST	087	Coal	ET			700		1-84
MPC	Colstrip 4	ST	087	Coal	ET			700		7-85
MPC	Combination Turbine	GT	093	Unk	UK			50		11-87
MPC	Combustion Turbine	GT	093	Unk	UK			50		11-89
MPC	Corette	ST	111	Coal	OT	180		180		
	Subtotals			NG		53	NS	53	NS	
				Coal		884	8.6	2,614	29.2	
				Other				100	.4	
	Subtotal					937	8.6	2,767	29.6	
	Not Listed			Hydro		2,664		3,291		
	MONTANA TOTAL					3,601	8.6	6,058	29.6	

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	NEVADA		32-							
SPP	Geothermal 1	GE	000	GST	UK			50		6-87
SPP	Geothermal 2	GE	000	GST	UK			50		6-87
SPP	Fallon	IC	001	NG	DR	2		2		
NEVP	Allen 1	ST	003	Coal	ET			500		5-86
NEVP	Allen 2	ST	003	Coal	ET			500		5-87
NEVP	Allen 3	ST	003	Coal	ET			500		5-88
NEVP	Clark 1	ST	003	NG	ET	42		42		
NEVP	Clark 2	ST	003	NG	ET	66		66		
NEVP	Clark 3	ST	003	NG	ET	67		67		
NEVP	Clark 4	GT	003	NG	DR	59		59		
NEVP	Clark 5	GT	003	NG	DR	70		70		
NEVP	Clark 6	GT	003	NG	DR	70		70		
NEVP	Clark 7	GT	003	NG	DR	70		70		
NEVP	Clark 8	GT	003	NG	DR			70		5-82
NEVP	Reid Gardner 1	ST	003	Coal	ET	110		110		
NEVP	Reid Gardner 2	ST	003	Coal	ET	110		110		
NEVP	Reid Gardner 3	ST	003	Coal	ET	110		110		
NEVP	Reid Gardner 4	ST	003	Coal	ET			250		5-83
NEVP	Sunrise 1	ST	003	NG	ET	80		80		
NEVP	Sunrise 2	GT	003	NG	DR	69		69		
NEVP	Westside Diesel	IC	003	Oil	DR	30		30		
SCE	Mohave 1	ST	003	Coal	ET	790		790		
SCE	Mohave 2	ST	003	Coal	ET	790		790		

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	NEVADA (Continued)		32-							
SNEV	Stauffer Chemical	ST	003	NG	ET	10		10		
SNWV	Stauffer Chemical	GT	003	NG	DR	15		15		
SPP	Valmy 1	ST	013	Coal	ET	250		250		
SPP	Valmy 2	ST	013	Coal	ET			250		10-84
SPP	Winnemucca	GT	013	NG	DR	15		15		
SPP	Battle Mtn	IC	015	Oil	DR	6		6		
SPP	Battle Mtn	IC	015	Oil	DR	2		2		
SPP	Fort Churchill 1	ST	019	NG	CP	110		110		
SPP	Fort Churchill 2	ST	019	NG	CP	110		110		
SPP	Gabbs	IC	023	Oil	DR	5		5		
SPP	Brunswick	IC	025	Oil	DR	6		6		
SPP	Tracy 1	ST	031	NG	CP	53		53		
SPP	Tracy 2	ST	031	NG	ET	83		83		
SPP	Tracy 3	ST	031	NG	ET	110		110		
SPP	Tracy Turbines	GT	031	Oil	DR	22		22		
SPP	Valley Road	IC	031	Oil	DR	6		6		
LDWP	White Pine 1	ST	033	Coal	ET			750		6-89
LDWP	White Pine 2	ST	033	Coal	ET			750		6-90
	Subtotals			Oil		77	NS	77	NS	
				NG		1,101	7.4	1,171	7.4	
				Coal		2,160	25.7	5.660	67.4	
				Other				100	5.3	
	Subtotal					3,338	33.1	7,008	80.1	
	Not Listed			Hydro		174		174		
	NEVADA TOTAL					3,938	33.1	7,182	80.1	

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	NEW MEXICO		35-							
PNM	Person 1	ST	001	NG	ET	18		18		5-99
PNM	Person 2	ST	001	NG	ET	18		18		5-99
PNM	Person 3	ST	001	NG	ET	28		28		
PNM	Person 4	ST	001	NG	ET	32		32		
PNM	Prager 7	ST	001	NG	ET	6		6		
PNM	Prager 8	ST	001	NG	ET	5		5		
PNM	Prager 9	ST	001	NG	ET	11		11		
PNM	Reeves 1	ST	001	NG	ET	50		50		
PNM	Reeves 2	ST	001	NG	ET	50		50		
PNM	Reeves 3	ST	001	NG	ET	75		75		
SWPS	Roswell 7	ST	005	NG	ET	10		Ø		12-88
EPE	Rio Grande 3	ST	013	Oil	ET	18		Ø		1-89
EPE	Rio Grande 4	ST	013	Oil	ET	33		Ø		1-90
EPE	Rio Grande 5	ST	013	Oil	ET	33		Ø		1-90
EPE	Rio Grande 6	ST	013	Oil	ET	48		48		
EPE	Rio Grande 7	ST	013	Oil	ET	48		48		
EPE	Rio Grande 8	ST	013	Oil	ET	150		150		
SWPS	Carlsbad 2	ST	015	NG	ET	7		Ø		12-86
SWPS	Carlsbad 3	ST	015	NG	ET	20		Ø		12-89
SWPS	Carlsbad 4	ST	015	NG	ET	20		Ø		12-91
SWPS	Carlsbad 5	GT	015	NG	UK	16		16		
SWPS	Cunningham 1	ST	025	NG	ET	71		71		
SWPS	Cunningham 2	ST	025	NG	ET	196		196		
SWPS	Maddox 2	GT	025	NG	UK	66		Ø		6-88
LAS	Las Alamos Station	ST	028	NG	ET	16		16		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	NEW MEXICO (Cont.)		35-							
PEGT	Escalante 1	ST	031	Coal	ET			210		6-84
PEGT	Escalante 2	ST	031	Coal	ET			210		10-88
SWPS	Tucumcari 3,4,6,8,9	IC	037	NG	DR	14		Ø		12-91
PEGT	Algondones 1	ST	043	NG	ET	15		Ø		1-89
PEGT	Algondones 2	ST	043	NG	ET	15		Ø		1-89
PEGT	Algondones 3	ST	043	NG	ET	15		Ø		1-89
USUC	Farmington 1	ST	045	NG	ET	16		16		
USUC	Farmington 2	ST	045	NG	ET	8		8		
USUC	Farmington 3	ST	045	NG	ET	3		3		
USUC	Farmington 4	ST	045	NG	ET	3		3		
APS	Four Corners 1	ST	045	Coal	CP	175		175		
APS	Four Corners 2	ST	045	Coal	CP	177		177		
APS	Four Corners 3	ST	045	Coal	CP	220		220		
APS	Four Corners 4	ST	045	Coal	CP	800		785		7-83
APS	Four Corners 5	ST	045	Coal	CP	800		785		1-84
PNM	New Mexico Station	ST	045	Coal	ET			490		5-90
PNM	San Juan 1	ST	045	Coal	ET	314		314		
PNM	San Juan 2	ST	045	Coal	ET	306		306		
PNM	San Juan 3	ST	045	Coal	WD	476		468		5-82
PNM	San Juan 4	ST	045	Coal	ET			472		5-82
PNM	Las Vegas 1	GT	047	NG	DR	20		20		
PNM	Santa Fe 1	ST	049	NG	ET	5		5		
PNM	Santa Fe 2	ST	049	NG	ET	6		6		

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	NEW MEXICO (Cont.)		35-							
	Subtotals			Oil		330	3.5	246	2.6	
				NG		835	7.8	653	6.6	
				Coal		3,268	28.0	4,612	44.1	
	Subtotal					4,433	39.3	5,511	53.3	
	Not Listed			Hydro		24		36		
	NEW MEXICO TOTAL					4,457	39.3	5,547	53.3	

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	OREGON		41-							
PGE	Sumit 1	IC	005	Oil	UK	3		3		
PGE	Sumit 2	IC	005	Oil	UK	3		3		
PGE	Beaver 1-6	CT	009	NG	DR	352		352		
PGE	Beaver 7	CW	009	WH	UK	141		141		
PGE	Trojan	NP	009	Nuc	ET	1,080		1,080		
EWEB	Weyco Energy Center	CG	039	Bio	UK	24		24		
PGE	Bethel 1-2	GT	047	Oil	DR	103		103		
PGE	Boardman	ST	049	Coal	CP	530		530		
	Subtotals			Oil		109	NS	109	NS	
				NG		352	2.1	352	2.1	
				Coal		530	5.0	530	5.0	
				Nuc		1,080	16.2	1,080	16.2	
				Other		165	1.0	165	1.0	
	Subtotal					2,236	24.3	2,236	24.3	
	Not Listed			Hydro		7,844		9,182		
	OREGON TOTAL					10,080	24.3	11,418	24.3	

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS		48-							
EPE	Undetermined	ST	000	Coal	ET			75		5-90
HOLP	Undetermined	ST	000	Unk	UK			600		4-91
SAAN	Undetermined	ST	000	Coal	UK			500		4-91
TEES	Diesels	IC	000	Oil	DR	3		3		
TEPL	Undetermined	UK	000	Unk	UK			600		7-87
TEPL	Undetermined	UK	000	Unk	UK			600		7-89
TMPP	Undesig. (San Miguel)	ST	013	Coal	ET			400		6-89
TMPP	Undesig. (San Miguel)	ST	013	Coal	ET			200		6-91
LOCR	Sim Gideon 1	ST	021	NG	CP	140		140		
LOCR	Sim Gideon 2	ST	021	NG	CP	140		140		
LOCR	Sim Gideon 3	ST	021	NG	CP	340		340		
PSOK	Oklaunion(Lake Kemp)	ST	023	Coal	ET			640		1-87
TMPP	W.R. Poage 1	ST	027	NG	OT	12		12		
TMPP	W.R. Poage 2	ST	027	NG	OT	12		12		
SAAN	J.T. Deely 1	ST	029	Coal	CP	418		418		
SAAN	J.T. Deely 2	ST	029	Coal	CP	418		418		
SAAN	Mission Road 1	ST	029	NG	ET	23		23		
SAAN	Mission Road 2	ST	029	NG	ET	23		23		
SAAN	Mission Road 3	ST	029	NG	ET	100		100		

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WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
SAAN	Leon Creek 1	ST	029	NG	ET	31		31		
SAAN	Leon Creek 2	ST	029	NG	ET	31		31		
SAAN	Leon Creek 3	ST	029	NG	ET	65		65		
SAAN	Leon Creek 4	ST	029	NG	ET	100		100		
SAAN	W.B. Tuttle 1	ST	029	NG	ET	65		65		
SAAN	W.B. Tuttle 2	ST	029	NG	ET	100		100		
SAAN	W.B. Tuttle 3	ST	029	NG	ET	100		100		
SAAN	W.B. Tuttle 4	ST	029	NG	ET	160		160		
SAAN	V.H. Braunig 1	ST	029	NG	CP	220		220		
SAAN	V.H. Braunig 2	ST	029	NG	CP	230		230		
SAAN	V.H. Braunig 3	ST	029	NG	CP	400		400		
SAAN	O.W. Sommers 1	ST	029	NG	CP	430		430		
SAAN	O.W. Sommers 2	ST	029	NG	CP	430		430		
TMPP	Bryan 3	ST	041	NG	ET	12		12		
TMPP	Bryan 4	ST	041	NG	ET	22		22		
TMPP	Bryan 5	ST	041	NG	ET	25		25		
TMPP	Bryan 6	ST	041	NG	ET	50		50		
TMPP	Bryan 7	ST	041	NG	ET	21		21		
TMPP	Bryan - Dansby	ST	041	NG	CP	100		100		
TMPP	Texas A&M 2	ST	041	NG	ET	1		1		
TMPP	Texas A&M 3	ST	041	NG	ET	3		3		
TMPP	Texas A&M 4	ST	041	NG	ET	5		5		
TMPP	Texas A&M 5	ST	041	NG	ET	11		11		
TMPP	Texas A&M 6	GT	041	NG	ET	14		14		
CEPL	Joslin 1	ST	057	NG	SW	240		240		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS(Continued)		48-							
BROV	Silas Ray 5	ST	061	NG	ET	21		21		
BROV	Silas Ray 6	ST	061	NG	ET	22		22		
BROV	Silas Ray 7	GT	061	NG	ET	11		11		
BROV	Silas Ray 8	GT	061	NG	ET	42		42		
CEPL	LaPalma 4	ST	061	NG	ET	22		22		
CEPL	LaPalma 5	ST	061	NG	ET	22		22		
CEPL	LaPalma 6	ST	061	NG	ET	150		150		
CEPL	LaPalma 7	GT	061	NG	ET	50		50		
HOLP	Cedar Bayou 1	ST	071	NG	SW	750		750		
HOLP	Cedar Bayou 2	ST	071	NG	SW	750		750		
HOLP	Cedar Bayou 3	ST	071	NG	SW	750		750		
TEPL	Stryker Creek 1	ST	073	NG	CP	175		175		
TEPL	Stryker Creek 2	ST	073	NG	CP	500		500		
TEPL	Stryker Creek Dsl. 1	IC	073	Oil	DR	2		2		
TEPL	Stryker Creek Dsl. 2	IC	073	Oil	DR	2		2		
TEPL	Stryker Creek Dsl. 3	IC	073	Oil	DR	2		2		
TEPL	Stryker Creek Dsl. 4	IC	073	Oil	DR	2		2		
TEPL	Stryker Creek Dsl. 5	IC	073	Oil	DR	2		2		
WETU	Oak Creek 1	ST	081	NG	CP	81		81		
TEPL	Collin	ST	085	NG	ET	153		Ø		12-91
WETU	Rio Pecos 4	CT	103	NG	ET	4		4		
WETU	Rio Pecos 5	ST	103	NG	ET	36		36		
WETU	Rio Pecos 6	ST	103	NG	ET	95		95		
DAPL	Dallas 3	ST	113	NG	ET	75		Ø		9-88
DAPL	Dallas 9	ST	113	NG	ET	70		Ø		9-38

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
DAPL	Lake Hubbard 1	ST	113	NG	CP	375		375		
DAPL	Lake Hubbard 2	ST	113	NG	CP	515		515		
DAPL	Mountain Creek 2	ST	113	NG	CP	33		33		
DAPL	Mountain Creek 3	ST	113	NG	CP	70		70		
DAPL	Mountain Creek 6	ST	113	NG	CP	115		Ø		9-89
DAPL	Mountain Creek 7	ST	113	NG	CP	125		125		
DAPL	Mountain Creek 8	ST	113	NG	CP	550		550		
DAPL	North Lake 1	ST	113	NG	CP	175		175		
DAPL	North Lake 2	ST	113	NG	CP	175		175		
DAPL	North Lake 3	ST	113	NG	CP	350		350		
DAPL	Parkdale 1	ST	113	NG	CP	87		87		
DAPL	Parkdale 2	ST	113	NG	CP	115		Ø		9-90
DAPL	Parkdale 3	ST	113	NG	CP	125		Ø		9-90
TMPP	Denton 1	ST	121	NG	ET	12		12		
TMPP	Denton 2	ST	121	NG	ET	12		12		
TMPP	Denton 3	ST	121	NG	ET	25		25		
TMPP	Denton 4	ST	121	NG	ET	60		60		
TMPP	Denton 5	ST	121	NG	ET	60		60		
EPE	Copper Station 1	GT	141	NG	DR	69		67		1-85
EPE	Newman 1	(ST	141	NG	ET	82				
		(		Oil	ET			75		1-90
EPE	Newman 2	(ST	141	NG	ET	82				
		(		Oil	ET			75		1-90
EPE	Newman 3	(ST	141	NG	ET	103				
		(		Oil	ET			96		1-90
EPE	Newman 4	(CT	141	NG	ET	52				
		(		Oil	ET			50		1-90

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
EPE	Newman 4	CT	141	NG	ET	52		52		
EPE	Newman 4	CW	141	WH	ET	93		93		
SOEP	Knox Lee 1	ST	143	NG	CP	36		Ø		12-86
SOEP	Knox Lee 2	ST	143	NG	CP	38		38		
SOEP	Knox Lee 3	ST	143	NG	CP	36		36		
SOEP	Knox Lee 4	ST	143	NG	CP	83		83		
SOEP	Knox Lee 5	ST	143	NG	CP	344		344		
TEPL	Valley 1	ST	147	NG	CP	175		175		
TEPL	Valley 2	ST	147	NG	CP	550		550		
TEPL	Valley 3	ST	147	NG	CP	375		375		
LOCR	F.P.P. 1	ST	149	Coal	CP	550		550		
LOCR	F.P.P. 2	ST	149	Coal	CP	550		550		
LOCR	F.P.P. 3	ST	149	Coal	CP			400		6-88
HOLP	W.A. Parish 1	ST	157	NG	CP	169		169		
HOLP	W.A. Parish 2	ST	157	NG	CP	174		174		
HOLP	W.A. Parish 3	ST	157	NG	CP	278		278		
HOLP	W.A. Parish 4	ST	157	NG	CP	555		555		
HOLP	W.A. Parish 5	ST	157	Coal	CP	660		660		
HOLP	W.A. Parish 6	ST	157	Coal	CP	660		660		
HOLP	W.A. Parish 7	ST	157	Coal	CP	570		570		
HOLP	W.A. Parish 8	ST	157	Coal	CP			540		5-83
HOLP	W.A. Parish GT 1	GT	157	NG	DR	14		14		
TUCS	Big Brown 1	ST	161	Coal	CP	575		575		
TUCS	Big Brown 2	ST	161	Coal	CP	575		575		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
ST&M	Pearsall 1	ST	163	NG	ET	25		25		
ST&M	Pearsall 2	ST	163	NG	ET	25		25		
ST&M	Pearsall 3	ST	163	NG	ET	25		25		
SWPS	Denver City 4	ST	165	NG	ET	50		50		
HOLP	P.H. Robinson 1	ST	167	NG	SW	441		441		
HOLP	P.H. Robinson 2	ST	167	NG	SW	441		441		
HOLP	P.H. Robinson 3	ST	167	NG	SW	565		565		
HOLP	P.H. Robinson 4	ST	167	NG	SW	750		750		
HOLP	P.H. Robinson GT 1	GT	167	NG	DR	13		13		
CEPL	Coleto Creek 1	ST	175	Coal	CP	559		559		
SWPS	Celanese 1	GT	179	WH	DR	10		Ø		12-90
SWPS	Celanese 2	ST	179	WH	DR	25		25		
TMPP	Gibbons Creek 1	ST	185	Coal	CP			400		6-83
WETU	Lake Pauline 1	ST	197	NG	CP	19		19		
WETU	Lake Pauline 2	ST	197	NG	CP	27		27		
HOLP	Champion 1	ST	201	NG	DR	6		6		
HOLP	Champion 2	ST	201	NG	DR	4		4		
HOLP	Champion 3	ST	201	NG	DR	12		12		
HOLP	Deepwater 7	(ST (CT	201 201	NG NG	SW SW	167		110		6-83
HOLP	Greens Bayou 1	ST	201	NG	ET	70		70		
HOLP	Greens Bayou 2	ST	201	NG	ET	70		70		
HOLP	Greens Bayou 3	ST	201	NG	ET	112		112		
HOLP	Greens Bayou 4	ST	201	NG	ET	112		112		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
HOLP	Greens Bayou 5	ST	201	NG	ET	398		398		
HOLP	Greens Bayou 73	GT	201	NG	ET	56		56		
HOLP	Greens Bayou 74	GT	201	NG	ET	56		56		
HOLP	Greens Bayou 81	GT	201	NG	ET	64		64		
HOLP	Greens Bayou 82	GT	201	NG	ET	64		64		
HOLP	Greens Bayou 83	GT	201	NG	ET	64		64		
HOLP	Greens Bayou 84	GT	201	NG	ET	64		64		
HOLP	Hiram Clarke 1	ST	201	NG	ET	44		44		
HOLP	Hiram Clarke 2	ST	201	NG	ET	44		44		
HOLP	Hiram Clarke 3	ST	201	NG	ET	77		77		
HOLP	Hiram Clarke 4	ST	201	NG	ET	77		77		
HOLP	Hiram Clarke GT 1	GT	201	NG	ET	13		13		
HOLP	Hiram Clarke GT 2	GT	201	NG	ET	13		13		
HOLP	Hiram Clarke GT 3	GT	201	NG	ET	13		13		
HOLP	Hiram Clarke GT 4	GT	201	NG	ET	13		13		
HOLP	Hiram Clarke GT 5	GT	201	NG	ET	13		13		
HOLP	Hiram Clarke GT 6	GT	201	NG	ET	13		13		
HOLP	Sam Bertron 1	ST	201	NG	SW	174		174		
HOLP	Sam Bertron 2	ST	201	NG	SW	174		174		
HOLP	Sam Bertron 3	ST	201	NG	SW	230		230		
HOLP	Sam Bertron 4	ST	201	NG	SW	230		230		
HOLP	Sam Bertron GT 1	GT	201	NG	DR	23		23		
HOLP	Sam Bertron GT 2	GT	201	NG	DR	13		13		
HOLP	Webster 1	ST	201	NG	SW	109		109		
HOLP	Webster 2	ST	201	NG	SW	109		109		
HOLP	Webster 3	ST	201	NG	SW	375		375		
HOLP	Webster GT 1	GT	201	NG	SW	13		13		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	TEXAS (Continued)		48-							
HOLP	T.H. Wharton 1	ST	201	NG	ET	71		71		
HOLP	T.H. Wharton 2	ST	201	NG	ET	229		229		
HOLP	T.H. Wharton 3	CW	201	WH	ET	81		81		
HOLP	T.H. Wharton 4	CW	201	WH	ET	81		81		
HOLP	T.H. Wharton 31	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 32	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 33	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 34	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 41	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 42	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 43	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 44	CT	201	NG	ET	39		39		
HOLP	T.H. Wharton 51	GT	201	NG	ET	58		58		
HOLP	T.H. Wharton 52	GT	201	NG	ET	58		58		
HOLP	T.H. Wharton 53	GT	201	NG	ET	58		58		
HOLP	T.H. Wharton 54	GT	201	NG	ET	58		58		
HOLP	T.H. Wharton 55	GT	201	NG	ET	58		58		
HOLP	T.H. Wharton 56	GT	201	NG	ET	58		58		
HOLP	T.H. Wharton GT 1	GT	201	NG	ET	13		13		
SOEP	Pirkey 1	ST	203	Coal	CP			640		2-85
WETU	Paint Creek 1	ST	207	NG	CP	34		34		
WETU	Paint Creek 2	ST	207	NG	CP	34		34		
WETU	Paint Creek 3	ST	207	NG	CP	53		53		
WETU	Paint Creek 4	ST	207	NG	CP	110		110		
SWPS	Canadian 1,2,3,4,5	IC	211	NG	DR	6		6		
HOLP	Malakoff 1	ST	213	Coal	ET	600		600		4-88
HOLP	Malakoff 2	ST	213	Coal	ET	600		600		4-89

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
TEPL	Trinidad 5	ST	213	NG	CP	70		Ø		12-91
TEPL	Trinidad 6	ST	213	NG	CP	240		240		
TEPL	Trinidad Diesel 1	IC	213	Oil	DR	2		2		
TEPL	Trinidad Diesel 2	IC	213	Oil	DR	2		2		
TUCS	Forrest Grove	ST	213	Coal	CP			750		1-89
CEPL	Bates 1	ST	215	NG	ET	72		72		
CEPL	Bates 2	ST	215	NG	ET	104		104		
TEPL	De Cordova	ST	221	NG	CP	775		775		
TEPL	Commerce Diesels	IC	231	Oil	DR	6		Ø		12-84
TMDP	Greenville Steam 1	ST	231	NG	CP	18		18		
TMPP	Greenville Steam 2	ST	231	NG	CP	25		25		
TMPP	Greenville Steam 3	ST	231	NG	CP	42		42		
TMPP	Greenville Dsl. 1-8	IC	231	Oil	DR	15		15		
SWPS	Riverview 5	CA	233	NG	ET	30		30		
SWPS	Riverview 6	CT	233	NG	ET	25		25		
GUSU	Neches 3	ST	245	NG	OT	27		27		
GUSU	Neches 4	ST	245	NG	OT	46		46		
GUSU	Neches 5	ST	245	NG	OT	66		66		
GUSU	Neches 6	ST	245	NG	OT	66		66		
GUSU	Neches 7	ST	245	NG	OT	111		111		
GUSU	Neches 8	ST	245	NG	OT	111		111		
WETU	Fort Phantom 1	ST	253	NG	CP	155		155		
WETU	Fort Phantom 2	ST	253	NG	CP	200		200		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
SWPS	Plant X 1	ST	279	NG	ET	48		48		
SWPS	Plant X 2	ST	279	NG	ET	102		102		
SWPS	Plant X 3	ST	279	NG	ET	103		103		
SWPS	Plant X 4	ST	279	NG	ET	189		189		
SWPS	Tolk 1	ST	279	Coal	ET			508		6-82
SWPS	Tolk 2	ST	279	Coal	ET			508		6-85
HOLP	Limestone 1(Oak Kn.)	ST	293	Coal	CP			700		4-86
HOLP	Limestone 2(Oak Kn.)	ST	293	Coal	CP			700		4-87
LOCR	Thomas Ferguson 1	ST	299	NG	CP	430		430		
SWPS	Jones 1	ST	303	NG	ET	243		243		
SWPS	Jones 2	ST	303	NG	ET	243		243		
SWPS	SPS 6 (Holly Ave.)	ST	303	Coal	ET			600		6-89
TEPL	Lake Creek 1	ST	309	NG	CP	87		Ø		12-91
TEPL	Lake Creek 2	ST	309	NG	CP	230		230		
TEPL	Lake Creek Diesel 1	IC	309	Oil	DR	2		2		
TEPL	Lake Creek Diesel 2	IC	309	Oil	DR	2		2		
TEPL	Lake Creek Diesel 3	IC	309	Oil	DR	2		2		
TEPL	Tradinghouse 1	ST	309	NG	CP	565		565		
TEPL	Tradinghouse 2	ST	309	NG	CP	775		775		
SOEP	Wilkes 1	ST	315	NG	CP	177		177		
SOEP	Wilkes 2	ST	315	NG	CP	351		351		
SOEP	Wilkes 3	ST	315	NG	CP	351		351		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	TEXAS (Continued)		48-							
HOLP	South Texas Proj. 1	NP	321	Nuc	CP			1,250		4-84
HOLP	South Texas Proj. 1	NP	321	Nuc	CP			1,250		4-86
TEPL	Sandow 4	ST	331	Coal	CP	545		545		
TEES	Morgan Creek 2	ST	335	NG	CP	22		Ø		1-91
TEES	Morgan Creek 3	ST	335	NG	CP	44		Ø		1-91
TEES	Morgan Creek 4	ST	335	NG	CP	70		70		
TEES	Morgan Creek 5	ST	335	NG	CP	175		175		
TEES	Morgan Creek 6	ST	335	NG	CP	500		500		
GUSU	Lewis Creek 1	ST	339	NG	CP	265		265		
GUSU	Lewis Creek 2	ST	339	NG	CP	265		265		
SWPS	Moore County 2	ST	341	NG	ET	19		Ø		12-91
SWPS	Moore County 3	ST	341	NG	ET	48		48		
SOEP	Lone Star 1	ST	343	Oil	CP	50		50		
SOEP	Lone Star 2	GT	343	Oil	DR	13		13		
SOEP	Lone Star 3	GT	343	Oil	DR	13		13		
SOEP	Lone Star 4	GT	343	Oil	DR	14		14		
WETU	Matador 1	IC	345	Oil	DR	1		1		
CEPL	Davis 1	ST	355	NG	SW	322		322		
CEPL	Davis 2	ST	355	NG	SW	329		329		
CEPL	Lon Hill 1	ST	355	NG	ET	69		69		
CEPL	Lon Hill 2	ST	355	NG	ET	69		69		
CEPL	Lon Hill 3	ST	355	NG	ET	153		153		
CEPL	Lon Hill 4	ST	355	NG	ET	243		243		

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
CEPL	Nueces Bay 5	ST	355	NG	SW			30		1-84
CEPL	Nueces Bay 6	ST	355	NG	SW	164		164		
CEPL	Nueces Bay 7	ST	355	NG	SW	323		323		
GUSU	Sabine 1	ST	361	NG	SW	230		230		
GUSU	Sabine 2	ST	361	NG	SW	230		230		
GUSU	Sabine 3	ST	361	NG	SW	430		430		
GUSU	Sabine 4	ST	361	NG	SW	568		568		
GUSU	Sabine 5	ST	361	NG	SW	488		488		
TMPP	R.W. Miller 1	ST	363	NG	CP	75		75		
TMPP	R.W. Miller 2	ST	363	NG	CP	116		116		
TMPP	R.W. Miller 3	ST	363	NG	CP	200		200		
TMPP	North Texas 1	ST	367	NG	CP	18		18		
TMPP	North Texas 2	ST	367	NG	CP	18		18		
TMPP	North Texas 3	ST	367	NG	CP	40		40		
SWPS	Harrington 1	ST	375	Coal	ET	333		333		
SWPS	Harrington 2	ST	375	Coal	ET	351		351		
SWPS	Harrington 3	ST	375	Coal	ET	360		360		
SWPS	Nichols 1	ST	375	NG	ET	107		107		
SWPS	Nichols 2	ST	375	NG	ET	106		106		
SWPS	Nichols 3	ST	375	NG	ET	244		244		
WETU	Presidio 1,2,3,5,6	IC	377	Oil	DR	2		2		
TEPL	River Crest	ST	387	NG	C	110		Ø		12-91
TEPL	Twin Oak 1	ST	395	Coal	CP			562		2-88
TEPL	Twin Oak 2	ST	395	Coal	CP			563		2-90

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)	48-								
TMPP	Garland-Newman 1	ST	397	NG	ET	9		Ø		6-85
TMPP	Garland-Newman 2	ST	397	NG	ET	9		Ø		6-85
TMPP	Garland-Newman 3	ST	397	NG	ET	17		17		
TMPP	Garland-Newman 4	ST	397	NG	ET	17		17		
TMPP	Garland-Newman 5	ST	397	NG	ET	42		42		
TMPP	Garland-Olinger 1	ST	397	NG	CP	75		75		
TMPP	Garland-Olinger 2	ST	397	NG	CP	110		110		
TMPP	Garland-Olinger 3	ST	397	NG	CP	146		146		
TUCS	Unassigned(MillCreek)	ST	401	Coal	CP			750		1-90
TUCS	Unassigned(Millcreek)	ST	401	Unk	CP			650		1-91
TEPL	Martin Lake 1	ST	401	Coal	CP	750		750		
TEPL	Martin Lake 2	ST	401	Coal	CP	750		750		
TEPL	Martin Lake 3	ST	401	Coal	CP	750		750		
TUCS	Martin Lake 4	ST	401	Coal	CP			750		1-90
TUCS	Comanche Peak 1	NP	425	Nuc	CP			1150		6-84
TUCS	Comanche Peak 2	NP	425	Nuc	CP			1150		12-85
TEES	Eagle Mountain 1	ST	439	NG	CP	115		115		
TEES	Eagle Mountain 2	ST	439	NG	CP	175		175		
TEES	Eagle Mountain 3	ST	439	NG	CP	375		375		
TEES	Handley 1	ST	439	NG	CP	45		Ø		1-91
TEES	Handley 2	ST	439	NG	CP	80		Ø		1-91
TEES	Handley 3	ST	439	NG	CP	400		400		
TEES	Handley 4	ST	439	NG	CP	425		425		
TEES	Handley 5	ST	439	NG	CP	425		425		

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
TEES	North Main 4	ST	439	NG	ET	80		80		
WETU	Abilene 1	ST	441	NG	ET	8		8		
WETU	Abilene 2	ST	441	NG	ET	18		18		
TEPL	Monticello 1	ST	449	Coal	CP	575		575		
TEPL	Monticello 2	ST	449	Coal	CP	575		575		
TEPL	Monticello 3	ST	449	Coal	CP	750		750		
SOEP	Welsh 1	ST	449	Coal	CP	528		528		
SOEP	Welsh 2	ST	449	Coal	CP	528		528		
WETU	San Angelo 1	CT	451	NG	CP	24		24		
WETU	San Angelo 2	ST	451	NG	CP	103		103		
WETU	Concho 3	ST	451	NG	ET	15		15		
WETU	Concho 4	ST	451	NG	ET	35		35		
AUST	Decker 1	ST	453	NG	CP	325		325		
AUST	Decker 2	ST	453	NG	CP	400		400		
AUST	Holly 1	ST	453	NG	CP	100		Ø		1-91
AUST	Holly 2	ST	453	NG	CP	100		100		
AUST	Holly 3	ST	453	NG	CP	165		165		
AUST	Holly 4	ST	453	NG	CP	190		190		
AUST	Seaholm 5	ST	453	NG	CP	20		Ø		1-85
AUST	Seaholm 6	ST	453	NG	CP	20		Ø		1-85
AUST	Seaholm 7	ST	453	NG	CP	20		Ø		1-86
AUST	Seaholm 8	ST	453	NG	CP	20		Ø		1-86
AUST	Seaholm 9	ST	453	NG	CP	20		Ø		1-89

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	TEXAS (Continued)		48-							
CEPL	Victoria 3	ST	469	NG	OT	38		38		
CEPL	Victoria 4	ST	469	NG	OT	58		58		
CEPL	Victoria 5	ST	469	NG	OT	153		153		
CEPL	Victoria 6	ST	469	NG	OT	221		221		
ST&M	Sam Rayburn 1	GT	469	NG	OT	11		11		
ST&M	Sam Rayburn 2	GT	469	NG	OT	11		11		
ST&M	Sam Rayburn 3	ST	469	NG	OT	26		26		
TEES	Permian Basin 1	ST	475	NG	ET	13		Ø		1-91
TEES	Permian Basin 2	ST	475	NG	ET	13		Ø		1-91
TEES	Permian Basin 3	ST	475	NG	ET	13		Ø		1-91
TEES	Permian Basin 4	ST	475	NG	ET	13		Ø		1-91
TEES	Permian Basin 5	ST	475	NG	ET	115		115		
TEES	Permian Basin 6	ST	475	NG	ET	540		540		
CEPL	Laredo 1	ST	479	NG	ET	32		32		
CEPL	Laredo 2	ST	479	NG	ET	32		32		
CEPL	Laredo 3	ST	479	NG	ET	99		99		
WETU	Oklaunion 1	ST	487	Coal	ET			465		12-86
TEES	Graham 1	ST	503	NG	CP	240		240		
TEES	Graham 2	ST	503	NG	CP	375		375		
	Subtotals			Oil		210	.5	498	3.4	
				NG		38,556	276.8	36,774	259.7	
				Coal		13,530	133.9	24,181	240.3	
				Nuc				4,800	57.6	
				Other		290	1.6	2,730	14.3	
	Subtotal					52,586	414.2	68,983	575.3	
	Not Listed			Hydro		278		278		
	Texas Total					52,864	414.2	69,261	575.3	

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	UTAH		49-							
UPLC	Milford 1	GE	001	GST	ET			20		6-84
USUC	Logan City 2-6	IC	005	Oil	OT	5		5		
UPLC	Carbon 1	ST	007	Coal	ET	66		66		
UPLC	Carbon 2	ST	007	Coal	ET	105		105		
USUC	Bountiful City 1-9	IC	011	NG	ET	8		8		
DGT	Bonanza 1	ST	013	Coal	ET			400		12-84
UPLC	Hunter 1	ST	015	Coal	ET	390		390		
UPLC	Hunter 2	ST	015	Coal	ET	390		390		
UPLC	Hunter 3	ST	015	Coal	ET			400		6-83
UPLC	Hunter 4	ST	015	Coal	ET			400		6-85
UPLC	Huntington 1	ST	015	Coal	ET	400		400		
UPLC	Huntington 2	ST	015	Coal	ET	415		415		
UPLC	Cal-Pac 1	ST	021	Coal	OT	4		4		
UPLC	Cal-Pac 2	ST	021	Coal	OT	4		4		
UPLC	Cal-Pac 2-7	IC	021	Oil	OT	4		4		
LDWP	Intermountain 1	ST	027	Coal	ET			750		7-86
LDWP	Intermountain 2	ST	027	Coal	ET			750		7-87
LDWP	Intermountain 3	ST	027	Coal	ET			750		7-88
LDWP	Intermountain 4	ST	027	Coal	ET			750		7-89
UPLC	Gadsby 1	ST	035	NG	ET	66		66		
UPLC	Gadsby 2	ST	035	Coal	ET	75		75		
UPLC	Gadsby 3	ST	035	Coal	ET	105		105		

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	UTAH (Continued)		49-							
USUC	Murray City 1-4	IC	035	NG	ET	7		7		
UPLC	Hale 2	ST	049	Coal	OT	45		45		
USUC	Provo City 1-4	ST	049	Coal	OT	14		14		
UPLC	Little Mountain	GT	057	NG	ET	15		15		
	Subtotals			Oil		9	NS	9	NS	
				NG		96	1.7	96	.7	
				Coal		2,013	23.4	6,213	73.3	
				Other				20	1.1	
	Subtotal					2,118	24.1	6,338	75.1	
	Not Listed			Hydro		188		216		
	UTAH TOTAL					2,306	24.1	6,554	75.1	

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FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982		Jan 1992		Add Date
						MW	10^3 AF	MW	10^3 AF	
	WASHINGTON		53-							
BPA	Hanford 1	NP	005	Nuc	OT	420		Ø		6-83
BPA	Hanford 2	NP	005	Nuc	OT	420		Ø		6-83
BPA	WNP 1	NP	005	Nuc	ET			1,250		6-86
BPA	WNP 2	NP	005	Nuc	ET			1,100		2-84
PSPL	Skagit 1	NP	005	Nuc	ET			1,275		1-91
WWPC	Othello	GT	021	Oil	DR	28		28		
BPA	WNP 3	NP	027	Nuc	ET			1,240		12-86
PSPL	South Whidbey	GT	029	Oil	DR	27		27		
PSPL	Frederickson 1	GT	033	NG	DR	89		89		
PSPL	Frederickson 2	GT	033	NG	DR	89		89		
PSPL	Shuffleton 1	ST	033	Oil	OT	43		43		
PSPL	Shuffleton 2	ST	033	Oil	OT	43		43		
SCL	Lake Union 1	ST	033	Oil	OT	7		7		
SCL	Lake Union 2	ST	033	Oil	OT	8		8		
SCL	Lake Union 3	ST	033	Oil	OT	11		11		
PPL	Centralia 1	ST	041	Coal	ET	640		640		
PPL	Centralia 2	ST	041	Coal	ET	640		640		
WWPC	Creston 1	ST	043	Coal	ET			500		7-88
WWPC	Creston 2	ST	043	Coal	ET			500		1-90
PSPL	Crystal Mountain	IC	053	Oil	DR	3		3		

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Power System	Station Name & Unit	Unit Type	Loc.	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	WASHINGTON (Cont.)		53-							
WWPC	Northeast 1 & 2	GT	063	NG	DR	58		58		
WWPC	Kettle Falls	ST	065	Bio	ET			42		9-83
PSPL	Whitehorn 1	GT	073	Oil	DR	67		67		
PSPL	Whitehorn 2	GT	073	NG	DR	89		89		
PSPL	Whitehorn 3	GT	073	NG	DR	89		89		
	Subtotals			Oil		237	.4	237	.4	
				NG		414	NS	414	NS	
				Coal		1,280	15.2	2,280	27.1	
				Nuc		840	3.4	4,865	73.0	
				Other				42	.5	
	Subtotal					2,771	19.0	7,838	101.0	
	Not Listed			Hydro		20,105		20,596		
				Wind		7		7		
	WASHINGTON TOTAL					22,883	19.0	28,441	101.0	

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Power System	Station Name & Unit	Unit Type	Loc	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	WYOMING		56-							
BHPL	Neil Simpson 5	ST	005	Coal	DR	15		15		
PPL	Wyodak 1	ST	005	Coal	DR	315		315		
PPL	Wyodak 2	ST	005	Coal	ET			315		12-88
PPL	Dave Johnson 1	ST	009	Coal	OT	100		100		
PPL	Dave Johnson 2	ST	009	Coal	OT	100		100		
PPL	Dave Johnson 3	ST	009	Coal	ET	220		220		
PPL	Dave Johnson 4	ST	009	Coal	ET	330		330		
PSC	Cheyenne Diesel 1	IC	021	Oil	DR	2		2		
PSC	Cheyenne Diesel 2	IC	021	Oil	DR	2		2		
PSC	Cheyenne Diesel 3	IC	021	Oil	DR	2		2		
PSC	Cheyenne Diesel 4	IC	021	Oil	DR	2		2		
PSC	Cheyenne Diesel 5	IC	021	Oil	DR	2		2		
UPLC	Naughton 1	ST	023	Coal	ET	160		160		
UPLC	Naughton 2	ST	023	Coal	ET	220		220		
UPLC	Naughton 3	ST	023	Coal	ET	330		330		
BEPC	Laramie River 1	ST	031	Coal	ET			550		4-82
BEPC	Laramie River 2	ST	031	Coal	ET	550		550		
BEPC	Laramie River 3	ST	031	Coal	ET			550		1-82
PPL	Jim Bridger 1	ST	037	Coal	ET	500		500		
PPL	Jim Bridger 2	ST	037	Coal	ET	500		500		
PPL	Jim Bridger 3	ST	037	Coal	ET	500		500		
PPL	Jim Bridger 4	ST	037	Coal	ET	500		500		

Table V

WESTERN STATES WATER COUNCIL 1982 REPORT

FRESH WATER USE BY ELECTRICAL GENERATION PLANTS

Power System	Station Name & Unit	Unit Type	Loc	Prima Fuel	Cool Sys.	Jan 1982 MW	Jan 1982 10^3 AF	Jan 1992 MW	Jan 1992 10^3 AF	Add Date
	WYOMING (Cont.)		56-							
BHPL	Osage 1	ST	045	Coal	ET	10		10		
BHPL	Osage 2	ST	045	Coal	ET	10		10		
BHPL	Osage 3	ST	045	Coal	ET	10		10		
BHPL	Osage IC	IC	045	Oil	DR	1		1		
	Subtotals			Oil		11	NS	11	NS	
				Coal		4,370	46.4	5,785	63.2	
	Subtotal					4,381	46.4	5,796	63.2	
	Not Listed			Hydro		259		259		
				Wind				104		
	WYOMING TOTAL					4,640	46.4	6,159	63.2	

REFERENCES

Abbey, David. "Energy Production and Water Resources in the Colorado River Basin." Natural Resources Journal. 1979.

Abbey, David. Water Use for Coal Gasification: How Much is Appropriate? Los Alamos Scientific Laboratory LA-8060-Ms. Los Alamos NM. 1981.

Abbey, David, Lee Brown and Fred Roach. The Role of Water in Energy Development. Los Alamos National Laboratory. Los Alamos NM. 1982.

Abbey, David and V. Loose. Water Supply and Demand in an Energy Supply Model. U.S. Dept. of Energy Report DOE/EV/10180-2. 1980.

Abbey, David and F. Lucero. "Water Related Planning and Design at Energy Firms." U.S. Department of Energy Report DOE/EV/10180-1. 1980.

Amend, John et al. An Interdisciplinary Teacher's Guide to Water for Energy. Water and Man, Inc. Salt Lake City, UT. 1979.

American Association for the Advancement of Science. "Energy, Water, and the West." National Conference of State Legislatures, Office of Science and Technology, Denver, CO. May, 1976.

American Society of Civil Engineers. Proceedings : Conference on Water and Energy, Technical and Policy Issues. New York, N.Y. 1982.

Anderson, Orson L. (principal investigator). "Study of Alternative Locations of Coal-Fired Electric Generating Plants" (for the Department of Water Resources). The Institute of Geophysics and Planetary Physics, University of California, Los Angeles, California, 1977.

Arizona State Fuel and Energy Office. Proceedings, Conference on Water Requirements for Lower Colorado River Basin Energy Needs. University of Arizona, Tucson, AZ. May, 1975. (Includes: Steiner, W. E. "Water for Energy as Related to Water Rights in the Colorado River Basin.")

Assistant Secretary for Environment, Office of Technology Impacts. Synthetic Fuels and the Environment: An Environmental and Regulatory Impacts Analysis (review draft). U.S. Department of Energy, Washington, D.C., 1980.

Aten, R.E., et al. "Impact of Energy Development on Groundwater." Journal of the Hydraulics Division, ASCE, Vol. 104, No. HYZ. February, 1978.

Baram, Michael S. Environmental Law and the Siting of Facilities: Issues in Land Use and Coastal Zone Management. Ballinger Publishing Company, Cambridge, MA. 1976.

Bartz, J. and J. Maulbetsch. "Are Dry Cooled Plants a Feasible Alternative?" Mechanical Engineering. October, 1981.

Bennett, William S.; Kerr, Donald M.; and Kolstad, Charles D. WESCO Coal Gasification Plans: Navajo Considerations. Informal Report (LA-6247-MS) for Regional Energy Assessment Program. Los Alamos Scientific Laboratory of the University of California, Los Alamos, NM. February, 1976.

Bishop, A. B. et al. Water As a Factor In Energy Resources Development, Utah Water Research Laboratory, Utah State University, Logan, UT. 1975.

Bishop, A. Bruce; Klemetson, Stanley L.; Torpy, Michael F.; McKee, Mac Energy Development v. Water Quality in the Upper Colorado and Upper Missouri River Basins. Informal Report (LA-7574-MS) for Regional Energy Assessment Program. Los Alamos Scientific Laboratory, University of California, Los Alamos. NM. 1979.

Boris, Constance M. and John V. Krutilla: Water Rights and Energy Development in the Yellowstone River Basin. The John Hopkins University Press. Baltimore, MD. 1980.

Brion, Denis J. A Compendium of Water Allocation Law in the Eastern United States (unpublished Department of Energy manuscript). 1979.

Brown, Lee, et al. "Water Reallocation, Market Proficiency, Conflicting Social Values" (draft report). John Muir Institute, March 1, 1980.

Byrne, Chris and Alison Wilson. Summary of Western States Energy Legislation 1975-1980. Western Interstate Energy Board. Denver, CO. 1980.

California Energy Commission. Constraints and Opportunities for Power Plant Siting: Technical Issues. Staff Report to California Energy Commisssion, Sacramento, CA. November, 1979.

California Energy Commission, Electrical Generation Technical Assessment Manual. Sacramento, CA. 1979.

California Energy Commission. Power Plant Siting Policy Paper. California Energy Commission, Sacramento, CA. November, 1978.

Colorado Department of Natural Resources. The Coal and Oil Shale Resources of the Upper Colorado River Basin. Denver, CO. 1979.

Colorado Department of Natural Resources, Office of the Executive Director. The Availability of Water for Oil Shale and Coal Gasification Development in the Upper Colorado River Basin (draft summary report). Report to the U.S. Water Resources Council, Denver, CO. 1979.

Davis, G. H. and Wood, L. A. Water Demands for Expanding Energy Development. U.S.G.S. Circular 703, Reston, VA. 1974.

Dewsnup and Jensen. A Summary-Digest of State Water Laws. National Water Commission, 1973.

Diemer, J. A. and Wengert, N. Water for Energy: An Approach to Comprehensive Impact Assessment. New Mexico State University, Water Resources Bulletin, Vol. 13, No. 5. October, 1977.

Ditton, Robert B.; Seymour, John L.; and Swanson, Gerald C. Coastal Resources Management. Lexington Books. Lexington, MA. 1977.

Dobson, Jerome E. and Shepherd, Alf D. Water Availability for Energy in 1985 and 1990. Oak Ridge National Laboratory, Oak Ridge, TN. 1979.

DuMars, Charles T. Federal Conditions on Availability of Water for Energy in the Energy-Producing Rocky Mountain States. Natural Resources Center, University of New Mexico, School of Law, Albuquerque, NM. 1979.

Electric Power Research Institute. "Access To Shale Oil." Journal. Palo Alto, CA. 1980.

Electric Power Research Institute. Proceedings: Workshop on Water Supply for Electric Energy. Palo Alto, CA. 1980.

Electric Reliability Council of Texas. Coordinate Bulk Power Supply Programs. U.S. Dept. of Energy Form EP-411. 1982.

Energy Transportation Systems Inc. "The ETSI Coal Slurry Pipeline. Silent, Safe, and Out of Sight." (No Date).

Environmental Policy Institute. Dreams into Dollars: A Review of Five Candidates for Synthetic Fuels Corporation Assistance.

Exxon Corporation. The Role of Synthetic Fuels in the U.S. Energy Future. Houston, TX. 1981.

Flug, Walker, Skogerboe and Smith. The Impact of Energy Development on Water Resources in the Upper Colorado River Basin. U.S. Office of Water Resources Research and Technology Report. 1977.

Geraghty and Miller, Inc. Availability of Water for the Development of a Coal Liquification Industry. ERDA Report No. FE-1752-18, Washington, D.C. 1977.

Gertsch, W. Darrell. An Assessment of Water Resources in Utah and Nevada for a Proposed Electric-Power Generating Station. Informal Report (LA-6670-MS) for Regional Energy Assessment Program. Los Alamos Scientific Laboratory of the University of California. Los Alamos, NM. 1977.

Gertsch, W. Darrell, et al. Water Requirements for Future Energy Development in the West: State Perspectives. Los Alamos Scientific Laboratory. 1977.

Gibbs, P. Q. "Availability of Water for Coal Conversion." Bureau of Reclamation, Billings, Montana. Journal of Water Resource Planning and Management Division, ESCE, Vol. 102, No. WR2. November, 1976.

Gillette, E. R., ed. Energy, Water, and the West. National Conference of State Legislatures, Denver, Colorado, May, 1976.

Gisser, Micha; Lansford, Robert R.; Evans, Mark; Gorman, William D.; Creel, Bobby J.; and Wolf, Yuval. Water: Agriculture vs. Energy Development in the Four Corners Area. Informal Report (LA-7643-MS). Los Alamos Scientific Laboratory, Los Alamos, NM. 1979.

Gisser, M., R. Lansford, W. Gorman, B. Creel and M. Evans. "Water Trade-Off Between Electric Energy and Agriculture in the Four Corners Area." Water Resources Research. June, 1979.

Gloyna, E., Woodson, H. and Drew, H. "Water Management by the Electric Power Industry," Water Resources Symposium Number Eight, Center for Research in Water Resources, The University of Texas at Austin, TX. 1975.

Goldstein, D.J., H. Gold and R.F. Probstein. Costs of Wastewater Disposal in Coal Gasification and Oil Shale Processing. Water Purification Associates. 1979.

Gould, George. State Water Law in the West: Implications for Energy Development. Informal Report, LA-7588-MS, Los Alamos Scientific Laboratory. 1979.

Grainey, Michael W. and Kubichek, David A. "Electric Utility Regulation: New Directions in Environmental and Energy Law." Denver Law Journal. 1979.

Hamilton, Michael S. "Power Plant Sitings: A Literature Survey." 19 Natural Resources Journal 75, 1979.

Hansen, D.C. "Water Available for Energy--Upper Colorado River Basin." Utah State Engineer's Office, Salt Lake City, Utah. Journal of the Water Resource Planning and Management Division, ASCE, Vol. 102, No. WR2, November, 1976.

Harte, J. and El-Gasseir, M. "Energy and Water." University of California, Berkeley, California. Science, Vol. 199, No. 4329, February 10, 1978.

Hines, N. William. "Water Laws Affecting Energy Development in the Central West" (unpublished). Argonne National Laboratory, 1978.

Hittman Associates, Inc. California Electricity Prices in the 1980's. California Council for Environmental & Economic Balance. San Francisco, CA. 1980.

Hoffman, Herman William, Jr. Water for Lignite Development in Texas. (Unpublished Paper). Texas Water Development Board. Austin, TX. 1976.

Hoffman, Herman William, Jr. The Impact of Lignite Strip Mining and Use on Water Resources in Texas - A Brief Overview. (Unpublished Paper). Texas Water Development Board. Austin, TX. 1978.

Hoffman, Bill and Charles Chandler. Will Texas Have Enough Water for the Elctric Utility Industry? Texas Water Development Board. Austin, TX. (No Date).

Hu, M., G. Paulenco and G. Englesson, 1978. "Water Consumption and Cost for Various Steam Electric Power Plant Cooling Systems." U.S. EPA Report, EPA-600/7-78-157. 1978.

Humm and Selig. "Water Availability for Energy Industries in Water Scarce Areas: Case Studies and Analysis" (unpublished Department of Energy manuscript). March 1, 1979.

Ingram, Helen; Laney, Nancy; and McCain, John R. "Managing a Limited Resource: The Political Constraints on Water Policy in the Four Corners States." Utah Law Review. 1979.

Jacoby, Gordon, Jr. Overview of Water Requirements for Electric Power Generation. Lake Powell Research Project Interim Report. Presented at the Symposium, "Water Requirements for Lower Colorado River Basin Energy Needs." Tucson, Arizona, May 8-9, 1975.

Karadi, Gabor M. and Krizek, Raymond J., editors. Water for Energy Development. From the Conference on Water for Energy Development, Asilomar, California, December, 1976.

Keith, J. E., et al. The Impact of Energy Resource Developments on Water Resources Allocations. Utah Water Research Laboratory, Logan, Utah, NTIS - PB-286135. 1978.

Kilpatrick, F. A. Energy Development Scenarios and Water Demands and Supplies--An Overview. U.S. Geological Survey Report, 77-697. U.S. G.S., Reston, VA. 1977.

Kneese, A. V. and Brown, F. L. "Water Demands for Energy Development." Natural Resources Lawyer. 1975.

League of Women Voters Education Fund. "Coastal Zone Management Program." Washington, D.C. 1975

Leung, Paul and Raymond E. Moore. Water Consumption Determination for Steam Power Plant Cooling Towers: A Heat-and-Mass Balance Method. American Society of Mechanical Engineers. 1969.

Loble, Henry and Loble, C. Bruce. "The Rocky Road to Water for Energy." North Dakota Law Review. 1976.

Martz and Grazis. "Interstate Transfers of Water and Water Rights--The Slurry Issue." Rocky Mountain Mineral Law Institute. 1977.

McMahan, Ronald L. and Porter B. Bennett. Energy Activity in the West. Western Governors Policy Office. Denver, CO. 1981.

Mid-continent Area Power Pool. Regional Reliability Council Coordinated Bulk Power Supply Program. U.S. Dept. of Energy Form EP-411. 1982.

Morris, Glen E. The Economic Impact of Synfuels Development in the Upper Colorado River Basin. Los Alamos Scientific Laboratory. 1979.

Mountain West & WESTPO. Resource Activity in the West. Western Governors Policy Office. Denver, CO. 1982.

Muys, J. C. "Legal Problems Involved in Developing Water Supplies for Energy Development." Natural Resources Lawyer. 1975.

National Petroleum Council. Report of the Water Availability Task Force. National Petroleum Council, Washington, D.C. 1974.

National Wildlife Federation. The Impacts of Synthetic Fuels Development. Washington, D.C. 1981.

Nevens, T. et al. Predicted Costs of Environmental Controls for a Commercial Oil Shale Industry. Denver Research Institute, COO-5107-1. Denver, CO. 1979.

Noble, et al. Improving Regulatory Effectiveness in Federal/State Siting Actions. Need for Power: Determinants in the State Decision Making Processes. NUREG CR-0022, March, 1978 (updated February 26, 1979), Appendix D. Center for Natural Areas, Washington, D.C.

Oklahoma University Science and Public Policy Program. Energy From the West: Policy Analysis Report. U.S. Interagency Energy/Environment R & D Program. EPA-600/7-79-083. 1979.

Oklahoma University Science and Public Policy Program. Energy From the West: Water Policy Report. (An unpublished draft prepared for EPA). Norman OK. 1980.

Oklahoma University Science and Public Policy Program. Water Availability Issues in Synthetic Fuels Production. Norman OK. 1979.

Oklahoma University Science and Public Policy Program. Energy from the West: A Technology Assessment of Western Energy Resource Development. (Report prepared for EPA). Norman, OK. 1982.

Olpin, Owen; Tarlock, A. Dan; and Austin, Carl F. "Geothermal Development and Western Water Law." Utah Law Review 733, 1979, pp. 773-887.

Olpin, Owen and Tarlock, A. Dan. "Water That is Not Water." 13 Land and Water Law Review 391. 1978.

Plotkin, S. E., et al. "Water and Energy in the Western Coal Lands." Office of Technological Assessment, Washington, D.C. Water Resources Bulletin, Vol. 15, No. 1, February, 1979.

Probstein, R. F. and Gold, Harris. Water in Synthetic Fuel Production: The Technology and Alternatives. MIT Press, Cambridge, MA, 1978.

Probstein, R. F. and Hicks, R. E. Synthetic Fuels. McGraw and Hill Book Co. New York City, N.Y. 1982.

Radian Corporation. An Investigation of the Potential for Utilization of Saline Groundwater in Energy-Related Processes. ERDA, Washington, D.C. (FE-2444-1. 1977.

Rickert, D. A.; Ulman, W. J.; and Hampton, E. R., editors. Synthetic Fuels Development: Earth-Science Considerations. U.S. Printing of the Interior/ Geological Survey. U.S. Government Printing Office, Washington, D.C., 1979.

Ross, R. H. and Lewis, E. B. A. Survey of State Views on Water for Energy in the Eastern United States for 1975, 1985, and 2000 (draft report). Oak Ridge National Laboratory, Oak Ridge, Tennessee. 1976.

Sato, Sho and Crocker, Thomas D. "Property Rights to Geothermal Resources." 6 Ecology Law Quarterly. 1977.

Shepherd, Alf D. Energy Competition for Water in Potential Water Availability Problem Basins: Water-Use Patterns, Costs of Water, and Conceptual Allocation Model (draft report). A progress report to the Applied Analysis Branch, Environmental Impacts Division, U.S. Department of Energy. Oak Ridge National Laboratory, Oak Ridge, Tennessee. 1979.

Southwest Power Pool. Regional Reliability Council Coordinated Bulk Power Supply Program. U.S. Dept. of Energy form EP-411. 1982.

Stansbury, Michael R. and Joseph E. Patton. "Will Synfuel Development Drain the West Dry?" The Consulting Engineer. February, 1982.

Stephenson, Barbara and Utton, Albert. "The Challenge of Mine Dewatering to Western Water Law and the New Mexico Response." 15 Land and Water Law Review 445, 1980.

Stockdale, Richard G. "Report to the State Engineer on the Madison Limestone as it Relates to the Energy Transportation Systems Inc. Coal-Slurry Pipeline Project," September 17, 1974.

Templer, O. W. Institutional Constraints on Water Resource Development in Arid Lands. International Symposium, 1974. ICASALS Publication No. 76-6. Lubbock, Texas. 1976.

Texas Water Development Board. Preliminary Evaluation of Water Consumption by the Steam-Electric Power Generation Industry in Texas, 1970-2000. Austin, TX. 1974.

Texas Department of Water Resources. Water Use, Projected Water Requirments, and Related Data and Information for the Standard Metropolitan Statistical Areas in Texas. LP-141. Austin, TX. 1981.

The John Muir Institute, Inc. Institutional Constraints on Alternative Water for Energy: A Guidebook for Regional Assessments. U.S. Dept. of Energy. DOE/EV/10180-01. Washington, D.C. 1980.

The White House. Energy for Rural America. 1979.

Thomas, J. F. Water Conservation With In Situ Oil Shale Development. University of California at Berkeley, Lawrence Livermore Laboratory, Berkeley, CA. 1976

Trelease, Frank J. "Legal Problems in the Allocation and Transfer of Water to Electric Utilities." Paper for Electric Power Research Institute, Workshop on Water Supply for Electric Energy, Palo Alto, California, March 19-21. 1980

Trelease, Frank J. "The Changing Water Market for Energy Production." McGeorge School of Law, Sacramento, California. Journal of Contemporary Law, Vol. 5, No. 1. Winter, 1978.

U.S. Bureau of Reclamation. Impacts on the Lower Colorado River Region Resulting from Alternative Levels of Emerging Energy Development in the Upper Colorado River Region. Washington, D.C. 1979.

U.S. Bureau of Reclamation. Saline Water Use and Disposal Opportunities. Washington, D.C. 1981.

U.S. Bureau of Reclamation. Westwide Study. Washington, D.C. 1975.

U.S. Comptroller General, General Accounting Office. Water Supply Should Not Be An Obstacle to Meeting Energy Development Goals. Report to the Congress of the United States. U.S. General Accounting Office, Washington, D.C. 1980.

U.S. Department of Energy. Ground Water and Energy. Summary report of the Department of Energy's National Workshop, Albuquerque, New Mexico, May, 1980.

U.S. Department of Energy. Synthetic Fuels and the Environment: An Environmental and Regulatory Impacts Analysis (review draft). 1980.

U.S. Department of Energy. A Survey of Coal Mining Capacity in the West. Washington, D.C. 1979.

U.S. Department of Energy. Institutional Constraints on Alternate Water for Energy. Washington D.C. 1980.

U.S. Fish and Wildlife Service. A Report on the Use of a Regional Reconnaissance Methodology to Determine Instream Flow Effects As Applied to the Analysis of Impacts of Coal and Oil Shale Technologies' Water Requirements on Instream Flow Uses for Fisheries and Recreational Activities in the Upper Colorado River Basin. Washington, D.C. 1979.

U.S. Geological Survey. Synthetic Fuels Development, Earth-Science Considerations. Edited by D. A. Rickert, W. J. Ulman, and E. R. Hampton. U.S. Government Printing Office, Washington, D.C., 1979.

U.S. National Bureau of Standards. Counties and County Equivalents of the States of the United States. X3-31-1973. Washington, D.C. 1979.

U.S. News & World Report. "Water: Will We Have Enough To Go Around." June 29, 1981.

U.S. Office of Technology Assessment. Water Availability for Synthetic Fuels, An Assessment of Current Studies. Washington, D.C. 1981.

U.S. Water Resources Council. Synthetic Fuels Development in the Upper Colorado Region. Washington, D.C. 1981.

Weatherford, Gary, Karen Nordi, Frank Osterhaudt and Fred Roach. Acquiring Water Energy: Institutional Aspects. Water Resources Publications. Little, CO. 1982.

Western Coal Development Monitoring System. A Survey of Coal Mining Capacity in the West. U.S. Department of Energy. DOE/RA-0045. 1980.

Western Interstate Energy Board. Geothermal Guidebook. Denver, CO. 1980.

Western Interstate Energy Board. Special Report on Synthetic Fuels Development in the West. Denver, CO. 1979.

Western States Water Council. Bibliography of Selected Reports and Ongoing Studies Relating to Water Requirements for Energy Resource Development. Salt Lake City, UT. 1976.

Western States Water Council. Water for Western Energy Development Update. Salt Lake City, UT. 1977.

Western Systems Coordinating Council. Coordinated Bulk Power Supply Program, 1981-1991. U.S. Dept. of Energy, Form EP-411. 1982.

Willardson, Anthony. Western Oil Shale Development and Federal Water Policy. (Unpublished Paper). Salt Lake City, UT. 1981.

Williams, T. T. "Water Conflicts in Western Coal Development." Montana State University, Boseman, Montana. Journal of the Water Resource Planning and Management Division, ASCE, Volume 2, No. WR2, November, 1976.

Wolak, F., R. Bivins, C. Kolstad and M. Stein. Documentation of the Los Alamos Coal and Utility Modeling System. Los Alamos National Laboratory, LA-8863-MS. Los Alamos, NM. 1981.

Zeigler, Harmon. "The Effects of Lobbying: A Comparative Assessment." Public Opinion and Public Policy. Norman Luttbeg, ed. Dorsey Press. Homewood, IL: 1974.