8.14 Water Resources

The Henrietta Peaker Project (HPP) consists of a 91.4-megawatt (MW) (net), natural-gas-fired, simple-cycle power plant located approximately 10 miles southwest of Lemoore, California, on a seven-acre portion of a 20-acre parcel owned by GWF Energy LLC. The HPP will interconnect to the existing adjacent Pacific Gas and Electric Company (PG&E) Henrietta Substation through a new 550-foot 70-kilovolt (kV) transmission line supported on two new transmission poles. Other linear facilities include an approximately 16.5-foot water interconnection pipeline (from the site property boundary) and a 2.2-mile Southern California Gas Company natural gas interconnection pipeline. Additionally, approximately five acres will be used for temporary construction laydown and parking.

The affected environment of the HPP is described in terms of regional water resources and the identified water supply. The potential impacts that may result from the HPP are described with regard to state water policy, surface water (floodwater and stormwater), and groundwater. Cumulative and indirect impacts and mitigation measures are also addressed below. The laws, ordinances, regulations, and standards (LORS) that apply to the use and conservation of water resources are presented in Section 8.14.5.

8.14.1 Affected Environment

The HPP facility will be constructed on previously disturbed agricultural property. The area immediately surrounding the site is predominantly used for agricultural purposes. A closed trucking transfer station is located approximately one mile south of the site. The nearest residences are condominiums on the Naval Air Station (NAS) Lemoore property, bordering State Route (SR) 198, approximately 0.5 miles east of the intersection of SR 198 and 25th Avenue (the base entrance), and approximately 1.5 miles northeast of the project site. The water supply for the HPP will be provided by Westlands Water District and Kings County.

8.14.1.1 Regional Water Resources

Climate and Precipitation. The Lemoore-Hanford area is Mediterranean-subtropical, with mild winters and dry summers. Most of the yearly precipitation falls between the months of October and May. Table 8.14-1 lists the average monthly maximum temperatures,

the average monthly minimum temperatures, and the average monthly rainfall recorded at the Hanford weather station from 1927 through 2000. Average annual rainfall is 8.18 inches.

Regional Water Use and Supply. Within Kings County, water needs are supplied by groundwater and surface water. Total annual water use in Kings County is 1,400,000 acre-feet (456 billion gallons). Approximately 32 to 35 percent of the total use is from groundwater; the remainder of the water comes from surface water supplies, which include the Kings River and the State Water Project (Kings County Planning Department, 1998).

Geologic Setting and Groundwater. The HPP site is located in the Tulare Lake Groundwater Basin, which underlies portions of Kings and Tulare Counties. This groundwater basin has a surface area of approximately 524,800 acres and a storage capacity of 1,500,000 acre-feet. Annual average extraction for agriculture is 648,000 acre-feet. Annual extraction for urban uses, which include industrial uses, is 24,000 acre-feet.

The aquifer system in the vicinity of the site generally consists of an upper and a lower aquifer, which are separated by a relatively thick clay layer of regional extent called the Corcoran Clay member of the Tulare Formation (shown as E-clay on Figure 8.15-5). The Corcoran Clay, part of the modified E-clay in the San Joaquin Valley, is approximately 450 feet below ground surface (bgs) and 50 to 100 feet thick. The Corcoran Clay is a silty, diatomaceous clay with low permeability and is one of the largest confining bodies in the area, underlying an area of approximately 5,000 square miles. In general, clay zones are impermeable aquitards that restrict vertical and lateral movement of groundwater. Movement of groundwater through soil can be retarded or terminated by aquitards. Several clay beds were deposited in a lake that once occupied the San Joaquin Valley trough. These many fine-grained lenses located throughout the valley have a combined thickness of several thousand feet.

Within the vicinity of the HPP site, the upper aquifer generally consists of interbedded sands and clays that contain water under unconfined or semiconfined conditions. The lower aquifer underlies the Corcoran Clay and also consists of interbedded sands and clays. Although the Corcoran Clay is believed to be a competent barrier between the upper and the lower aquifers, the Corcoran Clay pinches out and disappears to the north and east of the HPP site. Where the Corcoran Clay disappears, the lower aquifer is no longer isolated from the upper

aquifer. Historically, when a groundwater supply well has been drilled and completed in the area, the casing has commonly not been cemented across the clay. Thus, many wells have been completed in both the upper and the lower aquifers, providing hydraulic communication between the two aquifers. Water level data from 1971 and 1987 indicate that the static pressure of groundwater is approximately equal in both the lower aquifer and the upper aquifer in the area near Hanford due to the presence of these wells. These data indicate that the aquifers are not confined. As of spring 1999, the groundwater elevation in these aquifers was located at approximately 80 feet bgs, though well depths to groundwater vary from 50 to over 150 feet bgs within the general area (Mills, 2000a). Depth to groundwater measured by Kleinfelder at the proposed HPP site was 6 feet bgs as stated in their geotechnical report of June 2001 (see Appendix H1-3). For more information on the hydrogeology of the HPP site, see Section 8.15.1.2.

Surface Water. The HPP site is located within the Tulare Lake Hydrogeologic Basin, which consists of the drainage area of the southern San Joaquin Valley. The basin is interior draining, with no normal outlet to the Pacific Ocean, except in years of extreme rainfall when flood-release water from the Kings River flows north into the San Joaquin River Basin via the Fresno Slough.

To the north, the Kings River is one of four major rivers that supply fresh surface water to the basin. Historically, the Kings River flowed into its delta, consisting of a number of parallel channels on the northeast side of Tulare Lake. These channels, as well as the lake itself, were shallow and largely temporary, forming only during the late winter and spring and disappearing by mid-summer. Many of these channels were removed during the installation of agricultural operations. The south fork of the Kings River is approximately six miles east of the HPP site. The closest point of the historic Tulare Lake bed is approximately eight miles southeast of the site.

Surface water is used within the basin primarily for municipal, agricultural, and industrial purposes. In addition to the rivers, State Water Project (SWP) and federal Central Valley Project (CVP) water is imported into the basin through the California Aqueduct. These sources provide water to agricultural lands, cities, and industries throughout the central San

Joaquin Valley region. The closest ditch to the HPP site is the Crescent Ditch, which is parallel to the Avenal Cutoff on its southeast side, approximately 0.7 miles to the southeast. A series of sewage treatment system stormwater detention basins, approximately 275 acres in extent, are located approximately 0.5 miles east of the HPP site. These ponds are owned and operated by NAS Lemoore and serve to dispose of effluent from the NAS Lemoore sewage treatment plant located on the base.

8.14.1.2 Water Supply for the Proposed HPP

The water supply source for the proposed HPP will be SWP and CVP surface water from Westlands Water District and Kings County. Both the SWP and CVP water will be delivered to the HPP site by the Westlands Water District from an existing pipeline and standpipe located adjacent to the site. GWF Energy LLC has completed the following agreements to secure the delivery of the HPP proposed water supply:

1. A contract with Westlands Water District to deliver 44 acre-feet of CVP Entitlement to the HPP site
2. An agreement with Kings County under which the entity will deliver 200 acre-feet per year of its SWP entitlement for use by HPP
3. A wheeling agreement with Westlands Water District to deliver the Kings County SWP water to the HPP site

Water for the site will be pumped from the Westlands Water District's standpipe (number 30380-30-935), located adjacent to the northwest corner of the HPP site.

The HPP's simple-cycle unit does not include a cooling tower and will therefore have a minimal water demand. The average annual water consumption for the HPP, assuming 8,000 hours of operation, will be 150 acre-feet per year. The HPP average daily flow rate is 148,000 gallons per day. Water used by the combustion turbines for evaporative cooling (for power augmentation), emission control (water injections for control of nitrogen oxides), and turbine compressor washing will be treated using microfiltration, a multistage reverse osmosis system, electro-deionization, and mechanical vapor recompression. The firewater system and plant service water requirements will be provided from the untreated raw water storage tank. Bottled water will be delivered to the HPP site for drinking.

8.14.2 Environmental Consequences

This section evaluates the potential impacts of the HPP on water resources, including groundwater, surface water use and storage, and the supply of surface water from local water districts to the HPP site. Consistency with state water policy and power plant cooling water policy are also examined.

Consistent with the California Environmental Quality Act (CEQA) Guidelines, the HPP will have a significant effect on the environment if it impacts the water resources in any of the following ways:

- Substantially degrades water quality;
- Contaminates a public water supply;
- Substantially degrades or depletes groundwater resources;
- Interferes substantially with groundwater recharge;
- Encourages activities that result in the use of large amounts of water;
- Uses water in a wasteful manner;
- Causes substantial flooding, erosion, or siltation; or
- Substantially diminishes habitat for fish, wildlife, or plants.

Project-related impacts and their significance are described below. The cumulative and indirect impacts on water resources are discussed in 8.14.3. Figures 8.14-1 and 8.14-2 illustrate the water balance for the annual average and maximum daily cases under the HPP. Table 8.14-2 provides general water quality information for the source proposed for HPP supply water.

Impacts to Groundwater. The HPP will not use groundwater from the area and thus will not have any impact on local or regional groundwater supplies. The onsite stormwater detention basin will only contain "noncontact" stormwater and therefore will not cause an impact on local and regional groundwater.

Impacts on Surface Water Use and Storage. Potential surface water impacts resulting from the HPP include the disruption of surface runoff patterns during the construction phase and stormwater management during the operations and maintenance phase.

During construction of the HPP, approximately 12 acres will be disturbed at the HPP site. Seven acres will be permanently altered for the HPP site and 5 acres will be temporarily disturbed for material and equipment staging and parking during construction.

During construction of a natural gas pipeline, approximately seven acres will be disturbed. The natural gas pipeline route crosses the Crescent Ditch south of the Avenal Cutoff and parallels a tributary ditch along the east side of 25th Avenue. No project features will be located within the 100-year floodplain, as shown on Figure 8.14-3. No surface water bodies are present within the immediate vicinity of the site.

The HPP site is relatively flat. Grading during construction of the HPP will alter existing drainage patterns on the site. Surface water runoff will be directed around the construction site to the maximum extent feasible to minimize excess erosion and pollutant loading. The drainage patterns of areas disturbed during the construction of the HPP linear facilities will be re-established after construction. Existing roadways will be used to the maximum extent possible; if additional temporary roadways are required, they will be sited and graded to minimize erosion and disturbance to runoff patterns. Best engineering management practices and drainage control will be implemented to minimize impacts from construction activities. A stormwater monitoring program will also be implemented for construction activities at the HPP site prior to the commencement of construction. In addition, erosion and sediment controls will be implemented in compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity and all other applicable LORS. These controls will be identified in a Stormwater Pollution Prevention Plan (SWPPP) to be prepared prior to the start of construction.

Runoff from the HPP site during construction will not contribute significantly to existing watershed runoff. The nearest surface water body to the HPP site is the NAS Lemoore sewage treatment system stormwater detention basin complex, which contains water year-round. The water in these ponds is not allowed to flow into the watershed drainage network. The

nearest drainage facility is the Crescent Ditch, which carries water intermittently, depending on the season. Average annual rainfall for the Lemoore-Hanford area is low (8.18 inches). Runoff from the HPP site during the construction period will continue to make a minor contribution to surface water in the project vicinity. With implementation of proper stormwater pollution prevention controls, no significant adverse impacts on surface water are anticipated.

Following completion of project construction, contact stormwater runoff (from equipment areas on the site) associated with the operation and maintenance phase will be controlled and contained within the HPP site. This runoff will be confined within the site and be routed to an oil-water separator. The water from the oil-water separator will be recycled on site or disposed of off site. Any oil separated from the oil-water separator will be diverted to a waste oil tank and periodically disposed of off site. The HPP site will be graded to ensure that all noncontact stormwater runoff is collected and drained to the onsite stormwater detention basin. The drainage system for the HPP site has been designed to manage the stormwater runoff resulting from a maximum 10-year, 10-day rainfall event. Drainage at the HPP site will also be designed to prevent flooding of permanent facilities and roads. Facilities that do not discharge stormwater to the waters of the United States do not require a permit under the General Permit.

Processed wastewater from the HPP will be recycled to reduce the HPP water supply requirements. Wastewater from this system will be recycled or disposed of off site in accordance with applicable LORS.

Impacts on Local, CVP, and SWP Water Supplies. Process and firewater requirements for the HPP will be met by Westlands Water District and Kings County. The average annual water requirement for the HPP is estimated at 150 acre-feet, based on 8,000 hours of operation per year. The CVP water entitlement on the 20 acres acquired by GWF is 44 acre-feet per year. The additional water for the HPP will be supplied by Kings County. The 200 acre-feet of SWP entitlement to be transferred to the HPP, along with the 44-acre-foot CVP entitlement, significantly exceeds the projected plant water supply requirements. Because the water to be supplied for the operation of the HPP is held under pre-existing SWP and CVP contracts, the project will not exert an additional or new demand upon SWP or CVP water and

will therefore not cause a significant impact on local or regional water supplies from the California Aqueduct.

Consistency With State Water Policy. The volume of water that will be used for the HPP represents a small fraction of the current beneficial use of the state's inland waters. Use of water from the California Aqueduct for the HPP will not adversely impact the Sacramento–San Joaquin Delta. Water is provided to the canal through a series of water rights agreements that will not be affected by the project. Water will be supplied to the HPP under existing SWP and CVP contracts and will not represent a new demand on either system. The project will not alter the flow of surface or ground water into the Delta and will not impact Delta outflow or water quality objectives.

Consistency With State Power Plant Cooling Water Policy. The State Water Resources Control Board's (SWRCB) policy regarding power plant cooling water indicates preferences for the sources of the water (SWRCB, 1975). Before concluding that it is necessary to use surface water as cooling water for the HPP, GWF evaluated other potential sources of water, based on SWRCB policy to determine whether these sources will be environmentally sound and economically feasible. The following process water supply alternatives were considered and rejected:

- *Effluent from the NAS Lemoore sewage treatment system and evaporation ponds.* Effluent from the sewage treatment plant does not meet the water quality criteria for the HPP and would require costly water treatment in order to be useful. In addition, a pipeline exceeding two miles in length would need to be constructed. Effluent from the closer evaporation ponds would have even poorer water quality due to the effects of evaporation and would be even more expensive to treat.

- *Wastewater from industrial facilities in the area.* There are no facilities in the area that generate a wastewater stream of sufficient quality. The closest industrial facility with sufficient quantity is over eight miles from the site. However, the quality of the water from this facility does not meet the water quality requirements of the HPP.

- *Drilling an onsite water supply well.* Concerns over the local and regional drawdown of the aquifer underlying the HPP site, the difficulty of providing for groundwater recharge to mitigate the project impacts, and the relatively

poor quality of water sampled from existing water supply wells near the HPP site led to the rejection of the onsite supply well option.

All of these options were rejected as economically unsound. The existing SWP and CVP contracts and the HPP site proximity to the Westlands Water District water supply pipeline makes the surface water option the most economical and efficient water source for the HPP.

8.14.3 Cumulative and Indirect Impacts on Water Resources

The HPP is not expected to have significant cumulative or indirect impacts on water resources. There are no current plans to construct additional industrial facilities in the project vicinity that will require substantial water supplies. Proposals for new facilities will undergo separate environmental review, and any water resource impacts will be evaluated and mitigated.

8.14.4 Mitigation Measures

Though no significant adverse water resources impacts are expected to result from HPP construction and operation, this section discusses mitigation measures that will be implemented by GWF to minimize potential adverse but less-than-significant impacts to surface water and groundwater.

8.14.4.1 Mitigation of Surface Water Impacts

GWF will take these actions during the construction and operation of the HPP to minimize impacts to surface water quality:

- Project design and construction practices will minimize soil erosion during construction and operation of all HPP facilities. Soil erosion will be minimized by implementing recommendations of the U.S. Natural Resource Conservation Service in Hanford and from the *California Stormwater Best Management Practice Handbook*. All best management practices to be implemented during construction will be installed according to specifications contained in a SWPPP prepared for the project prior to the start of construction.

- Contact stormwater from the HPP will be collected within confined areas and routed to the oil-water separator. Water from the oil-water separator will be reused on site. Oil from the oil-water separator will be disposed of off site in accordance with applicable LORS.

- Equipment refueling and maintenance during construction will be performed within designated areas in a way that is consistent with best management practices. Spill contingency plans will be prepared and followed.

8.14.5 Laws, Ordinances, Regulations, and Standards

The LORS applicable to the HPP are discussed in this section and are summarized in Table 8.14-3.

8.14.5.1 Federal LORS

Clean Water Act, as amended (Title 40 of the Code of Federal Regulations [CFR], Parts 112, 122, and 125): The Clean Water Act has the objective to restore and maintain the chemical, physical, and biological properties of the nation's surface waters. The Clean Water Act authorizes the U.S. Environmental Protection Agency to regulate discharges of wastewater and stormwater into any surface water body by issuing NPDES permits and pretreatment standards. These regulations apply to stormwater and any other point-source discharges released during construction and operation of any industry or activity that disturbs five acres or more.

In California, the administering authority for issuing and enforcing these permits has been delegated to the SWRCB (described below). The Central Valley Regional Water Quality Control Board (CVRWQCB) will issue and have oversight of the General Construction Activity Stormwater Permit for construction of the proposed HPP. The General Industrial Activity Stormwater Permit is not applicable to the operation of the HPP, because contact stormwater will be collected and recycled on site as makeup water.

Resource Conservation and Recovery Act of 1976, 40 CFR Part 260 et seq: The Resource Conservation and Recovery Act (RCRA) seeks to prevent surface and

groundwater contamination by issuing permits and establishing guidelines to track and control the handling and disposal of hazardous waste and hazardous materials.

In California, the administering agency for issuing and enforcing these permits is the California Department of Toxic Substances Control (DTSC). Region I of the DTSC will issue and have oversight of any RCRA permits required for the proposed HPP.

8.14.5.2 State LORS

California Constitution, Article 10, Section 2: Article 10 of the California Constitution prohibits waste or unreasonable use of water. The article also regulates the method of use and diversion of water. The administering agency is the SWRCB.

California Environmental Quality Act, Public Resources Code Section 21000 et seq.; CEQA Guidelines, 14 California Code of Regulations (CCR) Section 15000 et seq., Appendix G: CEQA establishes guidelines that define water resources impacts. Appendix G contains definitions of projects that may be considered to cause significant impacts to water resources. The administering agency for the CEQA is the California Energy Commission (CEC).

California Porter-Cologne Water Quality Control Act (1998); California Water Code, Sections 13000–14957, Division 7, Water Quality: The Porter-Cologne Water Quality Control Act authorizes implementation of a statewide program to control the quality of all waters of the state. The act establishes the state and regional water quality control boards as the state agencies with the primary responsibilities for coordinating and controlling water quality. The siting, operation, and closure of waste disposal sites are regulated. The CVRWQCB requires that wastes and disposal site be classified, and that discharges comply with groundwater protection and monitoring requirements, as set forth in RCRA.

The CEC, the SWRCB, and CVRWQCB have authority and oversight of water quality issues for the proposed project.

California Water Code, Sections 13260–13269; 23 CCR Chapter 9: The Water Code requires that a waste discharge report be filed regarding any waste discharge

requirements where a discharge can affect the quality of any waters. The discharge requirements will support enforcement of relevant water quality protection objectives for the Water Quality Control Plan and applicable federal technology-based effluent standards. The discharge requirements may also incorporate requirements based on Clean Water Act Section 402(p) to address construction activities. The administering agency is the CVRWQCB. The HPP is not required to obtain waste discharge requirements because it will not discharge wastes that will affect water quality.

California Water Code, Sections 13271–13272; 23 CCR Sections 2250–2260: The California Water Code requires that releases of specified quantities of hazardous substances, sewage, or petroleum products be reported if the release is likely to result in discharge to waters of the state. Where the release or threat of discharge affects surface waters, hazardous substances and reportable quantities are defined in 40 CFR Section 116.5 under Section 311(b)(2) of the Clean Water Act. Where the release or threat of discharge affects groundwater, hazardous substances are defined as the substances listed as hazardous under the California Hazardous Waste Control Act, Health and Safety Code Sections 2510 and 2520, and the reportable quantities are those specified in 40 CFR Part 302. Releases of hazardous quantities are not anticipated as a result of operation of the proposed HPP; however, if releases occur, reporting requirements specified in this code will be followed.

The administering agency is the CVRWQCB and the California Office of Emergency Services.

Water Quality Control Policy – Use and Disposal of Inland Waters Used for Power Plant Cooling: The SWRCB requires alternative sources of water to be evaluated when fresh inland waters are used for power plant cooling. Alternative sources must be shown to be environmentally undesirable or economically unsound. The SWRCB also requires an analysis of the impacts that the use of inland waters for power plant cooling will have on Delta outflow and Delta water quality objectives.

California Public Resources Code, Section 25523(a); 20 CCR Sections 1752, 1752.5, 2300–2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (1): These sections of the Public Resources Code allow the CEC to include requirements to ensure

protection of environmental quality in its decision on an AFC. These sections also require information to be submitted to the CEC regarding water resources and water quality protection. The administering agency is the CEC.

8.14.5.3 Local Authorities and Administering Agencies

Resource Conservation District: Soil resource policies, which are intended to maintain agricultural productivity, are administered largely by the Resource Conservation District rather than by Kings County. To avoid increased erosion, recommendations for handling of soil during grading and construction will be obtained from the local Resource Conservation District.

8.14.6 LORS Compliance

Compliance with applicable LORS is summarized in Table 8.14-3. Construction and operation of the proposed HPP, including the plant, the switchyard, the transmission line, the natural gas pipeline, water supply pipeline, and any other associated facilities, will comply with all applicable hydrology and water quality LORS.

8.14.7 Required Permits and Approvals

A Notice of Intent will be filed with the CVRWQCB for coverage under the California General Permit for Stormwater Discharges Associated with Construction Activity by December 2001.

8.14.8 Proposed Conditions of Certifications

Proposed conditions of certification are contained in Appendix K. These conditions are proposed in order to ensure compliance with applicable LORS and/or to reduce potentially significant impacts to less-than-significant levels.

8.14.9 Involved Agencies and Agency Contacts

Agency	Contact/Title	Responsibilities	Telephone
Central Valley Regional Water Quality Control Board 3614 East Ashlan Ave. Fresno, CA 93726	Doug Patterson, Senior Water Resource Control Engineer	In charge of the Industrial, Wastewater, and Stormwater Unit (including General Construction Activity Stormwater Permit and General Industrial Activities Stormwater Permit)	(559) 445-5116
Westlands Water District P. O. Box 6056 Fresno, CA 93703	Thad Bettner, Director	Water Supply	(559) 241-6215
Kings County 1400 West Lacey Blvd. Hanford, CA 93230	Larry Spikes, County Administrative Officer	Water Supply	(559) 582-3211
Tulare Lake Water Storage District 1100 Whitley Ave. Corcoran, CA 93242	Mike Nordstrom	Attorney and responsible party for district transfers	(559) 992-3118

8.14.10 References

California Department of Water Resources, Division of Operations and Maintenance 2001, Water Quality at Selected SWP Locations, June, 2001. From website (www.omwq.water.ca.gov/wqmon.html).

California Department of Water Resources, Division of Operations and maintenance, 2001. Pesticides, Herbicides, and Other Organic Substances Detected at Selected SWP Locations, March, 2001. From website (www.omwq.water.ca.gov/pest.html).

Durfee, Kevin, 2000. Personal communication from Kevin Durfee, Western Regional Climatic Data Center, to T. Cudzilo, URS/Radian, March.

Kings County Planning Agency, 1999. Flood data from Federal Emergency Management Administration (FEMA) National Flood Insurance Program, May 1996, provided on Kings County Planning Agency website at http://www.countyofkings.com/planning/.

Kings County Planning Department, 1998. Kings County General Plan. Updated.

State Water Resources Control Board (SWRCB), 1975. *Water Quality Control Policy: Use and Disposal of Inland Waters Used for Powerplant Cooling.*

U.S. Geological Survey (USGS), 1998. *Environmental Setting of the San Joaquin-Tulare Basins, California.*

U.S. Geological Survey (USGS), 1998. *Water Quality in the San Joaquin-Tulare Basins, California, 1992-95*

Western Regional Climatic Data Center. Climate information obtained from http://www/wrcc/dri/edu.

TABLES

Table 8.14-1
Monthly Climate Summary at Lemoore-Hanford
for December 1, 1927 through July 31, 2000

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (degrees F)	54.4	61.5	67.5	75.4	83.6	91.0	97.3	95.7	90.0	80.4	66.3	55.2	76.5
Average Min. Temperature (degrees F)	35.5	38.7	42.2	46.5	52.4	58.1	62.3	60.4	55.6	47.7	38.6	34.8	47.7
Average Total Precipitation (inches)	1.56	1.55	1.47	0.72	0.23	0.07	0.01	0.01	0.14	0.37	0.81	1.23	8.18

Note: Percentages of possible observations for period of record: maximum temperature, 98.4%; minimum temperature, 98.1%; precipitation, 98.8%; snowfall, 98.2%.
Source: Western Regional Climate Center website, 2001.

Table 8.14-2
Surface Water Requirements and Source Water Quality for the HPP

California Aqueduct (SWP) Needs of HPP	
Maximum Daily Water Requirements for the HPP	
Flow (gpd)	152,000
Flow (gpm)	105.7
Average Daily Water Requirements for the HPP	
Flow (gpd)	148,000
Flow (gpm)	102.7

Quality Parameters (mg/L unless otherwise indicated)[1,2]	
Calcium	20
Hardness	95 (as $CaCO_3$)
Antimony	<0.005
Alkalinity	71 (as $CaCO_3$)
Total Dissolved Solids	253
Specific Conductance	410 (microSiemens/cm)
Sulfate	33
Chloride	56
Arsenic	0.002
Beryllium	<0.001
Boron	0.2
Fluoride	<0.01
Chromium	0.006
Copper	0.002
Iron	0.047
Lead	<0.001
Selenium	not reported
Magnesium	11
Manganese	<0.005
Turbidity	10.2 (NTU)
Phosphorus-Total	0.12
Phosphorus-Ortho	0.08
Sodium	43
Zinc	<0.005
Bromide	0.16
Nitrite+Nitrate	0.66 (as N)
Carbon-Total Organic	not reported
Carbon-Dissolved Organic	not reported
Diuron	0.6 (micrograms/L)
Simazine	0.08 (micrograms/L)
Diazinon	0.01 (micrograms/L)
2,4-Dichlorophenylacetic acid	0.365 (micrograms/L)

[1] Sampled at Check 21 (California Aqueduct near Kettleman City) in March and June, 2001.
[2] Reported by the California Department of Water Resources, 2001.

mg/L = milligrams per liter (equivalent to parts per million)
gpd = gallons per day
gpm = gallons per minute
NTU = turbidity units

Table 8.14-3
Summary of LORS and Compliance for Water Resources

Jurisdiction	Authority	Administering Agency	Requirements & Compliance	AFC Conformance Section
Federal	Clean Water Act, 40 CFR Parts 111,122, and 125	RWQCB Central Valley Region (authority deferred from U.S. EPA to RWQCB)	Stormwater management practices during construction must follow best management practices. Completed applications and fees must be submitted prior to construction.	8.14.5.1
	Resource Conservation and Recovery Act	California Department of Toxic Substances Control, Region 1	Hazardous material and hazardous waste must be handled, tracked, and reported in conformance with permits issued for the facility. Potential water resources impacts will be monitored through any permits issued.	8.14.5.1
State	California Constitution, Article 10, Section 2	RWQCB Central Valley Region	Minimization of consumptive water use through recycling of process wastewater; water uses combined where feasible in facility design and process operations.	8.14.2, 8.11.5.2
	California Porter-Cologne Water Quality Control Act, California Water Code §§ 13000–14957, Division 7, Water Quality	CEC, RWQCB Central Valley Region	Siting, operation, and closure of waste disposal points. Requires submission of waste and site classification for any waste discharge permit required.	8.14.5.2
	CEQA, Public Resources Code Section 2100 et seq.; CEQA Guidelines, 14 CCR § 15000 et seq., Appendix G	CEC	Water resources impacts identified and mitigation measures detailed in this document.	8.14.5.2

Table 8.14-3 (continued)
Summary of LORS and Compliance for Water Resources

Jurisdiction	Authority	Administering Agency	Requirements & Compliance	AFC Conformance Section
State	California Water Code, Sections 13260–13269; 23 CCR Chapter 9; Sections 13271–13272; 23 CCR Sections 2250–2260	RWQCB Central Valley Region and California Office of Emergency Services	Construction activity stormwater management will be addressed under the construction activities general permit. Industrial stormwater is exempt from the general permit. Reporting of any accidental leaks or spills related to discharge piping and connections will be conducted in compliance with the Water Code.	8.14.5.2, 8.14.6
	Water Quality Control Policy: Use and Disposal of Inland Waters Used for Power Plant Cooling	RWQCB Central Valley Region	Evaluation of alternative water sources for cooling water was performed; potential impacts to the Delta were evaluated.	8.14.2, 8.14.5.2
	California Public Resources Code § 25523(a); 20 CCR §§1752, 1752.5, 2300–2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (1)	California Energy Commission	Requires AFC to include information on water resources and water quality protection.	8.14.5.2

CEQA = California Environmental Quality Act
CCR = California Code of Regulations
CEC = California Energy Commission
CFR = Code of Federal Regulations
RWQCB = Regional Water Quality Control Board

FIGURES