CHAPTER 13: POWER

Introduction

Prior to 1977, the Bureau of Reclamation (Reclamation) managed the generation of power at Federal Reclamation projects to provide power for project purposes and marketed surplus power excess to project requirements. This chapter begins with a discussion of the transfer of the power marketing function from Reclamation to the Department of Energy's (DOE) Western Area Power Administration (Western) after the creation of the Department of Energy in 1977. This chapter then addresses power-related matters of interest throughout the Colorado River Basin, and describes actions taken by Reclamation's Upper Colorado Region and Lower Colorado Region to carry out Reclamation's power responsibilities.

Reclamation continues to be responsible for power generation and for matters relating to project use power. Project use power is power generated as part of a Federal Reclamation project to serve project use requirements, as for example, the pumping needs of the project. Reclamation's responsibilities relating to project use power include determination of project use power requirements, and development of project use power rates.

Due to the interrelated nature of power generation and marketing, Reclamation and Western are both party to numerous contracts entered into during the period from 1979 through 2008. Many of the contracts discussed in this chapter have been assigned different contract numbers by the respective agencies. The contract numbers referenced in this chapter are those assigned by Reclamation.

Western Area Power Administration

The Department of Energy Organization Act, Public Law (Pub. L.) No. 95-91, 91 Stat. 565 (1977) (DOE Act), established DOE by the reorganization of energy functions within the Federal government to ensure a coordinated national energy policy. Section 302(a)(1)(E) of the DOE Act transfers to the Secretary of Energy "the power marketing functions of the Bureau of Reclamation, including the construction, operation, and maintenance of transmission lines and attendant facilities." Since 1977, power generated by Reclamation that is surplus to project needs has been marketed by DOE under rates set by DOE.

Western was created under Section 302(a)(3) of the DOE Act. In accordance with Section 302(a)(3), Western, acting through its Administrator and on behalf of the Secretary of Energy, exercises the power marketing functions transferred to DOE from the Upper and Lower Colorado Regions of Reclamation. Reclamation entered into several agreements with Western to implement the transfer of functions and to define the responsibilities of the agencies. Two of these agreements are described in more detail below.

Master Agreement and Finance Working Agreement

By memorandum dated November 26, 1979, the Commissioner of Reclamation (then temporarily named the Water and Power Resources Service) and the Administrator of Western agreed to guidelines that would govern the transfer of functions and property pursuant to the DOE Act. The memorandum provided that certain property would be excepted from the transfer, stating that "Western and Service agree that Service should retain ownership of the CAP transmission lines and the Navajo power entitlement." On March 26, 1980, the two agencies entered into the Agreement Between Water and Power Resources Service [now Bureau of Reclamation], Department of the Interior, and Western Area Power Administration, Department of Energy, later designated as Reclamation Contract No. 0-AG-30-P1037 (Master Agreement). The Master Agreement implemented the guidelines agreed to in the November 1979 memorandum and formalized the transfer of functions and property from Reclamation to Western. Specific details to coordinate operations between Reclamation and Western have been developed as the need arises.

After 1977, with Reclamation retaining project oversight and power generating functions and with the power marketing function transferred to Western, the agencies developed interagency procedures to ensure the appropriate disposition of power revenues. Reclamation and Western entered into the Informal Working Agreement Between the Bureau of Reclamation and Western Area Power Administration for Budget and Finance and Accounting Matters in 1983 (Finance Working Agreement), and agreed to maintain, to the extent practicable, separate books of account for each project or, at each agency's option, to maintain accounts at a lower level which could be consolidated to the project level. The Finance Working Agreement addressed Western's disposition of power marketing revenues into the Treasury for Federal Reclamation projects and the allocation of such revenues for Reclamation and Western program requirements.

Memorandum of Understanding Between the Bureau of Reclamation and the Federal Energy Regulatory Commission

Reclamation is authorized under the Act of April 16, 1906, Pub. L. No. 59-103, 34 Stat. 116 (1906) (Town Sites and Power Development Act), and the Reclamation Project Act of 1939, Pub. L. No. 76-260, 53 Stat. 1187 (1939), to grant leases of power privilege to non-Federal entities for the development of hydroelectric power on Reclamation projects. The Federal Energy Regulatory

Commission (FERC) is authorized under Title IV of the DOE Act to issue permits and licenses to non-Federal entities for the development of hydroelectric power projects under its jurisdiction.

A dispute regarding the respective roles of the two agencies with respect to jurisdiction over hydropower development came before the Tenth Circuit Court of Appeals in *Uncompahgre Valley Water Users Ass'n* v. *Federal Energy Regulatory Commission*, 785 F.2d 269 (10^{th} Cir. 1986), *cert. denied sub nom. Town of Norwood* v. *Uncompahgre Valley Water Users Ass'n*, 479 U.S. 829 (1986). The *Uncompahgre* decision, which held in favor of Reclamation under the particular circumstances of *Uncompahgre*, is discussed in Chapter 12. Following the *Uncompahgre* decision, FERC and Reclamation developed the Memorandum of Understanding between the Federal Energy Regulatory Commission and the Bureau of Reclamation, Department of the Interior, for Establishment of Processes for the Early Resolution of Issues Related to the Timely Development of Non-Federal Hydroelectric Power at Bureau of Reclamation Facilities (MOU), dated November 6, 1992, to address jurisdictional issues. The MOU is published in the *Federal Register* at 58 Fed. Reg. 3269 (January 8, 1993).

The MOU sets forth a process for the agencies to resolve differences with respect to jurisdiction over either applications for a permit or license or requests for a lease of power privilege.

Upper Basin Power

The Colorado River Storage Project (CRSP) was authorized by the Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956) (CRSPA). A discussion of CRSPA is located in *Updating the Hoover Dam Documents 1978*, Chapters I(H) and V. CRSPA's text is set forth in Appendix 1 H.1 of the same volume.

The CRSPA authorized four initial storage units: (1) Glen Canyon Unit, consisting of a dam, reservoir, and powerplant on the Colorado River in the States of Arizona and Utah; (2) Navajo Unit, consisting of a dam and reservoir on the San Juan River in the States of Colorado and New Mexico; (3) Flaming Gorge Unit, consisting of a dam, reservoir, and powerplant on the Green River in the States of Utah and Wyoming; and (4) the Curecanti Unit, consisting of Blue Mesa, Morrow Point, and Crystal dams, reservoirs, and powerplants on the Gunnison River in the State of Colorado. The Curecanti Unit was renamed the Wayne N. Aspinall Unit in 1980 in honor of United States Representative Wayne N. Aspinall from Colorado.

Colorado River Storage Project Powerplant Capacity

Since 1979, the generating capacity of the CRSP powerplants has increased through the replacement of the original windings in the generators and other work. As of December 31, 2008, the generating capacities are as follows:

- The Glen Canyon Powerplant capacity for eight generators is 1,320 megawatts (MW).

- The Flaming Gorge Powerplant capacity for three generators is 151.5 MW.

- The combined powerplant capacity on the Aspinall Unit is 282.9 MW and includes two generators at Blue Mesa with a combined capacity of 86.4 MW, two generators at Morrow Point with a combined capacity of 165 MW, and one generator at Crystal with a capacity of 31.5 MW.

In addition, Federal powerplants were also constructed at some of the CRSP participating projects. A 10-MW powerplant was constructed at Fontanelle Dam of the Seedskadee Project in Wyoming. Two powerplants (McPhee, at 1.3 MW; and Towaoc, at 11.5 MW) were included in the Dolores Project in Colorado.

Generating capacity has also been increased through the construction of additional non-Federal hydrogeneration facilities. In general, a non-Federal entity must obtain a lease of power privilege from Reclamation to operate any hydrogeneration facilities at a CRSP facility. An exception to this requirement is at Navajo Dam where, under the CRSP Act, the authorization was limited to "dam and reservoir only." Instead, a powerplant with a capacity of 30 MW was constructed at Navajo Dam under a license issued by FERC on October 15, 1985. The powerplant is owned and operated by the City of Farmington, New Mexico.

Other non-Federal development includes a 0.12-MW powerplant added to the Lemon Dam on the Florida Project in Colorado, under a lease of power privilege granted by Reclamation to the Florida Water Conservancy District on July 15, 1988. The 10.5-MW Olmsted Powerplant and water rights were acquired under condemnation for the Central Utah Project, Utah. A private 13-MW powerplant has been constructed at Jordanelle Dam on the Central Utah Project under a 40-year lease of power privilege granted by Reclamation to the Central Utah Water Conservancy District and Heber Light and Power on July 19, 2005.

Colorado River Storage Project Transmission

The CRSPA, as amended, provides that project powerplants and transmission facilities shall be operated in conjunction with other Federal powerplants, present and potential, so as to produce the greatest practicable amount of power and energy that can be sold at firm power and energy rates. Pursuant to these statutory provisions, a high-voltage transmission grid was constructed, which interconnected the CRSP powerplants and participating projects with other

Reclamation projects and with public and private utilities in the CRSP power marketing area, which includes the States of Arizona, Nevada, Colorado, New Mexico, Utah, Wyoming, and Nebraska.

After the transmission and power marketing functions of Reclamation were transferred to Western, the initial CRSP transmission system constructed by Reclamation was extended by Western. The CRSP transmission system now includes major transmission lines consisting of approximately 869 miles of 345-kilovolt (kV) transmission lines, 944 miles of 230-kV transmission lines, 307 miles of 138-kV transmission lines, and 135 miles of 115-kV transmission lines. The CRSP transmission system also includes 31 substations. The CRSP transmission system is operated and maintained by Western, and Western enters into contracts covering interconnection and transmission service with utilities in the CRSP power marketing area.

Colorado River Storage Project Power Marketing

Western's Colorado River Storage Project Management Center markets CRSP power with power from Reclamation's Collbran Project (Upper and Lower Molina Powerplants, respectively, located on Bonham Reservoir and Plateau Creek in Colorado) and the Rio Grande Project (Elephant Butte Powerplant on the Rio Grande River in New Mexico). The combined projects are marketed together by Western as the Salt Lake City Area Integrated Projects. The rates are evaluated each year, utilizing Reclamation and Western data, to ensure that revenues are adequate to meet the projects' operation, maintenance, replacement, and repayment obligations and to maintain an adequate balance in the Upper Colorado River Basin Fund authorized in CRSPA.

Lower Basin Power

The actions of Reclamation's Lower Colorado Region to carry out power-related responsibilities for Hoover Dam (the Boulder Canyon Project) and for Parker and Davis Dams (the Parker-Davis Project) are discussed in this chapter. The authorizations for these dams are described in *The Hoover Dam Documents 1948*, Chapters IV and XII, respectively. Reclamation's actions in connection with Headgate Rock Dam, authorized under the same statutory provisions as Parker Dam, and Reclamation's actions in connection with the Siphon Drop Powerplant are also discussed in this chapter. Reclamation is responsible for the Federal interest in the Navajo Project and for the Central Arizona Project (CAP) transmission system, both authorized under the Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968) (CRBPA or Basin Project Act). Reclamation's actions to carry out power-related responsibilities under the Basin Project Act are discussed in this chapter. The discussion of Reclamation's Lower Colorado Region power-related actions concludes with a description of actions in the Yuma, Arizona, area.

Hoover Power Operations

The Los Angeles Department of Water and Power (LADWP) and Southern California Edison Company operated the Hoover Powerplant from 1937 until the late 1980s under Contract Ilr-1333, dated May 29, 1941. See *The Hoover Dam Documents 1948*, Appendix 902. When the contract with the California agencies terminated, Reclamation took over operations. Letter Agreement No. 6-07-30-P1011 between Reclamation and LADWP, effective June 1, 1985, through May 31, 1989, provided for LADWP to train Reclamation personnel in the specifics of operating and maintaining the Hoover Powerplant. Reclamation, Western, and LADWP later entered into Contract No. 1-CS-30-P1100, dated June 16, 1992, which provided for the sale and consolidation of the LADWP facilities and the consolidation of Federal switchyards to deliver power from the Hoover Powerplant to Western's Mead 230-kV substation.

Reclamation and Western also entered into Interagency Agreement No. 7-07-30-P1015, dated May 28, 1987, to improve the efficiency of Hoover Powerplant and Mead Substation operations, and Interagency Agreement No. 3-AG-30-P1177, dated April 26, 2004, for Western to maintain and replace, as necessary, the Hoover Dam 230-kV electrical facilities.

Hoover Power Generation and Marketing Regulations

In 1986, the Secretary of the Interior (Secretary) terminated the General Regulations for Lease of Power, adopted April 25, 1930, and amended November 16, 1931, and the General Regulations for Generation and Sale of Power, adopted May 20, 1941, and replaced these with new regulations that reflected the 1977 separation of the power generation and marketing functions between Reclamation and Western. The 1931 regulations, as amended, are set forth as Appendix 601 to *The Hoover Dam Documents 1948*, and are discussed in Chapter VI of that volume. The 1941 regulations are set forth as Appendix 901 to that volume, and are discussed in Chapter IX of that volume.

The Secretary adopted the General Regulations for Power Generation, Operation, Maintenance, and Replacement at the Boulder Canyon Project, Arizona/Nevada on June 3, 1986, published in the *Federal Register* at 51 Fed. Reg. 23960 (July 1, 1986) and effective July 31, 1986. The 1986 regulations, set forth at 43 CFR Part 431, address Reclamation's power generation responsibilities, define the procedures to be used by Reclamation to provide contractors and Western with cost data and power generation estimates associated with operation of the project, set forth procedures relating to administration and management of the Colorado River Dam Fund established under the Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928), and provide dispute resolution procedures.

The Hoover Power Plant Act of 1984

Title I of the Hoover Power Plant Act of 1984, Pub. L. No. 98-381, 98 Stat. 1333 (1984) (Hoover Power Plant Act), authorized the Secretary to increase the capacity of existing Hoover Powerplant generating equipment and appurtenances in an uprating program to provide an additional 503 MW of capacity. Section 105 of the Hoover Power Plant Act required that the uprating program be undertaken with funds advanced to the Secretary of the Interior by the non-Federal entities that contracted with the Secretary of Energy to purchase the additional capacity. The initial advance funding for the uprating program was provided by Interim Contract No. 6-07-30-P1009, dated March 11, 1986, among Reclamation, Western, the Arizona Power Authority, the California cities of Anaheim, Azusa, Banning, Burbank, Colton, Glendale, Pasadena, Riverside, and Vernon, and the Colorado River Commission of Nevada. This contract was superseded by individual contracts between the electric service contractors and Reclamation for the advancement of funds.

The Hoover Power Plant Act further authorized a Hoover Dam and Powerplant visitor facilities program to include improved parking, visitor facilities, elevators, and roadways, which, as part of the Boulder Canyon Project, would ultimately be funded by the electric service contractors. The Secretary was also authorized under the Hoover Power Plant Act to construct a Colorado River bridge crossing immediately downstream from Hoover Dam to alleviate traffic congestion and reduce safety hazards. The Hoover Power Plant Act provided that the bridge would not be part of the Boulder Canyon Project and would not be funded or repaid from the Colorado River Dam Fund established under the Boulder Canyon Project Act, or from the Lower Colorado River Basin Development Fund (Development Fund) established under the Basin Project Act.

The original Boulder Canyon Project electric service contracts were to expire on May 31, 1987. The Hoover Power Plant Act directed the Secretary of Energy to enter into renewal contracts to replace these contracts and to place under contract the additional capacity resulting from the uprating program. Western issued the General Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects on May 3, 1983, published in the *Federal Register* at 48 Fed. Reg. 20872 (May 9, 1983). These criteria were amended to conform to the Hoover Power Plant Act and, as amended, were published in the *Federal Register* at 49 Fed. Reg. 50582 (December 28, 1984). Western adopted the General Regulations for the Charges for the Sale of Power from the Boulder Canyon Project on November 14, 1986. These regulations are published in the *Federal Register* at 51 Fed. Reg. 43124 (November 28, 1986) and set forth at 10 Code of Federal Regulations (CFR) Part 904. The regulations became effective June 1, 1987. Western then entered into new electric service contracts, as provided for in the Hoover Power Plant Act, to expire on September 30, 2017.

As a means to resolve financial and oversight issues relating to the administration of the new Boulder Canyon Project electric service contracts, Reclamation, Western, and the Boulder Canyon Project electric service contractors entered into the Implementation Agreement, Contract No. 5-CU-30-P1128, effective

February 17, 1995. This agreement primarily addressed principal payments, uprating credits, annual rate adjustments, and billing and payment procedures.

Title II of the Hoover Power Plant Act required that each long-term firm power service contract entered into or amended by Western after August 17, 1985, require the purchaser to develop and implement an energy conservation program. Title II was amended by the Energy Policy Act of 1992, Pub. L. No. 102-486, Section 114, 106 Stat. 2799 (1992) to require purchasers of electric energy under long-term firm power service contracts to implement integrated resource planning as defined in that statute.

Parker-Davis Project

In a memorandum dated October 5, 1995, Reclamation's Lower Colorado Region informed the Parker-Davis Project electric service and transmission service contractors that Reclamation intended to reduce its request for fiscal year 1997 Federal appropriations for the operation, maintenance, and replacement of Reclamation's portion of Parker-Davis Project generation facilities, and to eliminate appropriation requests for Parker-Davis Project funding beginning in fiscal year 1998. Reclamation and Western then sought and received advance funding for such activities directly from the contractors for project use power and for firm electric service. (Project use power is power generated as part of a Federal Reclamation project to serve project use requirements. The firm electric service contractors contract with Western for the Parker-Davis Project power that is surplus to project requirements.)

Reclamation's and Western's actions resulted in several Parker-Davis Project contracts relating to project use power, including:[1]

- An Agreement in Principle for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1135, among Reclamation, Western, Wellton-Mohawk Irrigation and Drainage District (WMIDD), Yuma County Water Users' Association (YCWUA), Yuma Mesa Irrigation and Drainage District (YMIDD), Yuma Irrigation District (YID) and Unit "B" Irrigation and Drainage District (Unit "B"), effective July 2, 1996. This contract recognized project use power as having first priority with respect to Parker-Davis Project generation and transmission. The Agreement in Principle terminated upon execution of Contract No. 6-CU-30-P1136.

- The Joint Participation Contract for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1136 (Joint Participation Contract), dated October 18, 1996, among Reclamation, Western, WMIDD, YCWUA, YMIDD, YID, and Unit "B." This contract appointed WMIDD and YCWUA as Aggregate Power Managers with the responsibility for the aggregation of resources and loads to permit efficient scheduling, use, and

[1] In these contracts, project use power is referred to as priority use power, and the amount of project use power available was increased from 39 MW to 40.5 MW.

delivery. The Aggregate Power Managers participate in the development of Reclamation's and Western's annual work plans, 10-year plans, and decisionmaking regarding the extent to which the work plans will be advance funded.

- Amendment No. 1 to the Joint Participation Contract, effective October 1, 1998, which superseded and replaced the 1996 Joint Participation Contract, specified the authority and duties of the Aggregate Power Managers, other districts, Reclamation, and Western and involves the parties more fully in the planning and participative process.

- Amendment No. 2 to the Joint Participation Contract, dated May 27, 2005, which restated and superseded Amendment No. 1, requires the Aggregate Power Managers to serve a pumping load relating to a San Luis Rey Indian water rights settlement (see discussion in Chapter 6 and Chapter 10) and allows the Aggregate Power Mangers to use project use power for their "full range of purposes." The San Luis Rey Indian Water Rights Settlement Act, Pub. L. No. 100-675, Title I, 102 Stat. 4000 (1988), provided for the settlement of the water rights claims of the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians in San Diego County, California. See Chapter 10. This statute was amended by the Act of October 27, 2000, Pub. L. No. 106-377, Appendix B, 114 Stat. 1441A-70 (2000) (Packard Amendment), to permit the Aggregate Power Managers to use project use power for their "full range of purposes" in exchange for annually supplying the power capacity and energy for a San Luis Rey Indian water rights settlement in amounts sufficient to convey up to 16,000 acre-feet per year of water conserved from the All-American Canal and Coachella Canal lining projects. Letter Agreement No. 3-CU-30-P1175, among Reclamation, WMIDD, and YCWUA, dated April 8, 2004, implements the Packard Amendment and is attached as a coterminous exhibit to Amendment No. 2 to the Joint Participation Contract.

- The Operating Contract for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1138, dated October 18, 1996, which was restated and superseded by Amendment No. 1, dated May 27, 2005 (Operating Contract), among Reclamation, Western, WMIDD, and YCWUA. This contract provides a partnership program to define, protect, and more efficiently and effectively utilize project use power. The Operating Contract was amended to comply with the Packard Amendment and to conform to other changes made to the Joint Participation Contract. Exhibits were added to identify the nonproject loads for WMIDD and YCWUA and to identify the San Luis Rey Indian water settlement load.

- Advancement of Funds Contract for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1137, among Reclamation, Western, and the Aggregate Power Managers (WMIDD and YCWUA), dated October 18, 1996, and superseded and replaced on October 1, 1998, by Amendment No. 1 to the Advancement of Funds Contract For Parker-Davis Project Generation Facilities, and as further amended by Amendment No. 2, which restated and superseded Amendment No. 1 on May 27, 2005. This contract sets forth an advance funding process for the Aggregate Power Managers and makes corrections and clarifications to be consistent with the Joint Participation Contract and the Operating Contract.

- Advancement of Funds Contract for Parker-Davis Project Generation Facilities, Contract No. 8-CU-30-P1148, among Reclamation, Western, and certain Parker-Davis Project Firm Electric Service Contractors, effective October 1, 1998. This contract provides for an advance funding process to ensure the availability and reliability of the Parker-Davis Project facilities and to maximize the benefits from those facilities. This contract superseded an interim advance funding agreement for fiscal year 1998. The contract does not have a termination date. The contract remains in effect until it terminates in accordance with its own terms, unless, with respect to an individual firm electric service contractor, that contractor's firm electric service contract for Parker-Davis Project power terminates first.

Headgate Rock Dam and Powerplant

Headgate Rock Dam, located on the Colorado River within the Colorado River Indian Reservation, about 15 miles downstream from Parker Dam, was completed in 1941. The original purpose of Headgate Rock Dam was to provide a water surface elevation sufficient to allow diversion into the Colorado River Indian Tribes' canal works. In 1984, under the authority of the Act of November 2, 1921, Pub. L. No. 67-85, 42 Stat. 208 (1921) (Snyder Act), $11 million was appropriated for Reclamation to design and construct the Headgate Rock Hydroelectric Project for the Bureau of Indian Affairs (BIA). Construction proceeded under Interagency Agreement No. 6-AA-30-04110, dated July 15, 1986, between Reclamation and BIA. The project has a total capacity of 19,500 kW provided by three 6,500-kW turbines operating at a net head of 13 to 20 feet with an average head of 15 feet.

Interagency Agreement No. 9-AA-30-07220, dated March 28, 1988, between Reclamation and BIA, provides that Reclamation, on behalf of BIA, will operate and maintain Headgate Rock Dam, the control gates, and the Headgate Rock Powerplant.

Interagency Agreement No. 1-AA-30-P1097, dated January 6, 1992, between Reclamation and BIA, coordinates and establishes consistent procedures for the safe and reliable operation and maintenance of Headgate Rock Powerplant, dam, and diversion facilities, switchyard, and associated transmission facilities. By memorandum dated May 20, 1997, Reclamation transferred the Headgate Rock Hydroelectric Project, including the powerplant, switchyard, and transmission line, from construction to operation and maintenance status and transferred the operation and maintenance responsibility to BIA. Reclamation provided training to BIA in the operation and maintenance of the project. At the request of BIA, Reclamation continued to provide occasional assistance to BIA in the operation and maintenance of the facility under Interagency Agreement No. 9-AA-30-07220 and was doing so as of December 31, 2008.

In October 1998, a penstock failure resulted in flooding of the powerhouse. All three units were rewound, equipment was repaired, and new digital governors were installed. The powerplant was put back online in stages and was fully back online in September 2000.

Siphon Drop Powerplant

Construction of the original Siphon Drop Powerplant is discussed in Chapter XII of *The Hoover Dam Documents 1948* (referred to as Syphon Drop Powerplant). The original Siphon Drop Powerplant was constructed as a feature of the Yuma Project in 1926 and was located at Siphon Drop on the Yuma Main Canal, just south of the All-American Canal. The Yuma Project was authorized under the Reclamation Act of 1902, Pub. L. No. 57-161, 32 Stat. 388 (1902). The powerplant had two units with a total capacity of 1,600 kW and was operated by YCWUA. The plant ceased operation in 1972 due to safety concerns.

In a letter agreement dated August 23, 1985, Reclamation and YCWUA agreed to the replacement of the Siphon Drop Powerplant in accordance with the designs and specifications approved by the United States. The replacement was constructed in a new location, along the All-American Canal, and came online in the latter part of 1987. The United States holds title to the Siphon Drop Powerplant. YCWUA operates, maintains, and repairs the replaced Siphon Drop Powerplant, which as of December 31, 2008, has a total nameplate rating of 4,500 kW.

Navajo Project

In accordance with the Basin Project Act, the Secretary of the Interior acquired an interest in capacity and energy from the Navajo Generating Station, a non-Federal thermal generating powerplant, and capacity in associated transmission facilities for the benefit of the CAP. See Chapter 5 for discussion of the CAP. The Navajo Project consists of the 24.3 percent Federal interest in the Navajo Generating Station and the Federal interest in associated transmission facilities. The Navajo Project transmission facilities include the Federal interest in the Western Transmission System, which runs from the Navajo Generating Station westward and then south to the McCullough Substation, and the Federal interest in the Southern Transmission System, which runs from the Navajo Generating

Station southward to the Westwing Substation. The physical features of the Navajo Project, including the western and southern transmission systems, are described in *Updating the Hoover Dam Documents 1978*, Chapter III, as are the early contracts associated with the project.

Additional Navajo Project agreements were executed between 1979 and 2008:

- The Navajo Project Navajo Generating Station Operating Agreement (No. 14-06-300-2539) was executed among the United States of America acting through the Secretary of Interior and Reclamation, Arizona Public Service Company (APS), LADWP, Nevada Power Company (NPC), Salt River Project Agricultural Improvement and Power District (SRP), and Tucson Gas & Electric Company (TG&E), on July 23, 1979, establishing the terms and conditions for operation and maintenance of the Navajo Generating Station and appointing SRP as Operating Agent of the Navajo Generating Station.

- The Navajo Project Western Transmission System Operating Agreement (No. 7-07-30-P0015) was executed among the United States of America acting through the Secretary of Interior and Reclamation, APS, LADWP, NPC, SRP, and TG&E, on July 23, 1979, establishing the terms and conditions for the operation and maintenance of the Navajo Project Western Transmission System. NPC was appointed Operating Agent of the Navajo Project western line facilities and is responsible for the line patrols and emergency repairs to the Navajo-McCullough 500-kV transmission line and for the maintenance of the Navajo Project western transmission microwave system. LADWP was appointed Operating Agent of the McCullough facilities and is responsible for switching, line loading, voltage levels, and operation of capacitors and reactors.

- The Navajo Project Southern Transmission System Operating Agreement (No. 14-06-300-2538) was executed among the United States of America acting through the Secretary of Interior and Reclamation, APS, LADWP, NPC, SRP, and TG&E, on July 23, 1979, establishing the terms and conditions for the operation and maintenance of the Navajo Project Southern Transmission System and appointing APS as Operating Agent.

- The McCullough 287 kV and 230 kV Switchyards Agreement (No. 5-07-30-P1005) was executed among the United States of America acting through the Secretary of Interior and Reclamation (then the Water and Power Resources Service), LADWP, and NPC, on August 18, 1981, establishing the terms under which LADWP, as Operating Agent of McCullough Substation, would coordinate construction of the 230-kV switchyard and transformer facilities necessary to accommodate the McCullough to Davis line constructed as part of the CAP.

Navajo Surplus

Section 303 of the Basin Project Act authorized the Secretary of the Interior to sell the power and energy acquired, but not needed, for the operation of the CAP at such prices as the Secretary may determine. Revenue from these sales is deposited to the Development Fund. As noted earlier, the Secretary's marketing functions were transferred to Western in 1977 with the creation of the United States Department of Energy.

The Hoover Power Plant Act, Section 107, provided additional guidance with respect to such sales, as discussed below, defining "Navajo surplus" as follows and expressly placing the marketing of Navajo surplus under the control of the Secretary of Energy:

> Subject to the provisions of any existing layoff contracts, electrical capacity and energy associated with the United States' interest in the Navajo generating station which is in excess of the pumping requirements of the Central Arizona project and any such needs for desalting and protective pumping facilities as may be required under section 101(b)(2)(B) of the Colorado River Basin Salinity Control Act of 1974 as amended (hereinafter in this Act referred to as "Navajo surplus") shall be marketed and exchanged by the Secretary of Energy pursuant to this section.

The statutory references to "desalting and protective pumping facilities" are to the Yuma Desalting Plant and the 242 Wellfield discussed in Chapter 4.

Navajo Power Marketing Plan

Section 107 of the Hoover Power Plant Act requires the Secretary of the Interior to adopt a plan, after consultation with representatives of the Secretary of Energy, the Governor of Arizona, and the Central Arizona Water Conservation District (CAWCD), "for the purposes of optimizing the availability of Navajo surplus and providing financial assistance in the timely construction and repayment of construction costs of authorized features of the Central Arizona project." Section 107 directs the Secretary of Energy to market Navajo surplus in accordance with the plan.

The Hoover Power Plant Act further provides that the revenues from the sale of Navajo surplus will be deposited to the Development Fund to be used to provide financial assistance in the repayment of construction costs for authorized features of the CAP. An additional rate component was also authorized to be collected for the purpose of repaying bonds issued by CAWCD to advance fund, among other things, the construction of New Waddell Dam.

The Secretary, acting through the Commissioner of Reclamation, adopted an Interim Navajo Power Marketing Plan on March 17, 1986, which was superseded by the Navajo Power Marketing Plan adopted on December 1, 1987. The 1987 plan was published in the *Federal Register* at 52 Fed. Reg. 48328

(December 21, 1987). Under this plan, contractors entering into long-term sales contracts for Navajo surplus were to be given a first opportunity when those contracts expired to enter into new long-term contracts for Navajo surplus.

Reclamation, CAWCD, and Western entered into an agreement titled Administration of the Contracts for Long-Term Sale and Exchange of Navajo Surplus Power, Agreement No. 0-CS-30-P1076, on May 15, 1990, to define the responsibilities of each agency with respect to the contracts for the sale or exchange of Navajo surplus. Navajo surplus was marketed to SRP under the 1987 plan through a series of three contracts, known as the Four-Party Agreements, as follows:

- Long-Term Sale of Navajo Surplus Power Central Arizona Project/Navajo Generating Station, Contract No. 0-CS-300-P1080, among Reclamation, Western, CAWCD, and SRP, executed on May 15, 1990, marketed 200 MW of Navajo surplus capacity and associated transmission to SRP, with annual deliveries of energy equal to 152,000 megawatt-hours (MWh).

- Long-Term Sale of Navajo Surplus Power Central Arizona Project/Navajo Generating Station, Contract No. 1-CS-30-P1102, among Reclamation, Western, CAWCD, and SRP, executed on August 27, 1991, marketed 150 MW of Navajo surplus capacity and associated transmission to SRP, with annual deliveries of energy equal to 114,000 MWh.

- Long-Term Sale of Remaining Navajo Surplus Power and Coordinated Operation of Power Systems Central Arizona Project, Contract No. 4-CS-300-P1125, among Reclamation, Western, CAWCD, and SRP, executed March 15, 1994, marketed the remaining Federal interest in Navajo Generating Station generation and the Federal interest in the Navajo Project western and southern transmission systems to SRP. This contract also provides for the operational integration of Navajo power with CAP's other power resources and provides for the coordinated operation of the SRP electric system with the CAP electric system, including transmission rights acquired by Reclamation to serve CAP needs.

The Four-Party Agreements each terminate on September 30, 2011. Western entered into a letter agreement with SRP on September 28, 2007, to market to SRP up to 220,800 MWh per year of the Navajo surplus power available during certain peak hours from June through August for the period from October 1, 2011, to September 30, 2031. Reclamation, Western, CAWCD, and SRP, in a letter agreement dated September 28, 2007, recognized this as an appropriate sale of Navajo surplus under the Hoover Power Plant Act of 1984. In this letter agreement, CAWCD concurred that this sale optimized the financial assistance available "for the purposes set forth in 43 United States Code 1543(f), as amended by the Arizona Water Settlements Act of 2004, Public Law 108-451."

Amended Navajo Power Marketing Plan

The Amended Navajo Power Marketing Plan was adopted by the Secretary of the Interior, acting through the Commissioner of Reclamation, on September 18, 2007, and was published in the *Federal Register* at 72 Fed. Reg. 54286 (September 24, 2007). The amended plan was developed by Reclamation in consultation with representatives of the Secretary of Energy (specifically, with Western), the Governor of Arizona (specifically, with the Arizona Department of Water Resources), and CAWCD to maximize revenues from the sale of Navajo surplus. Amending the plan to maximize revenues for deposit into the Development Fund was a precondition of the Stipulation for Judgment in the CAP repayment litigation. See Chapter 5. The entry of final judgment in accordance with the Stipulation for Judgment in the CAP repayment litigation was an enforceability requirement of Section 207(c)(1)(K) of the Arizona Water Settlements Act of 2004, Pub. L. No. 108-451, 118 Stat. 3478 (2004), which expanded the authorized uses of revenues deposited into the Development Fund.

The Navajo surplus which becomes available when the Four Party Agreements terminate on September 30, 2011, will be marketed under the Amended Navajo Power Marketing Plan.

Central Arizona Project Transmission System

The CAP transmission system is by design interconnected with other Federal transmission systems; in particular, those of the Navajo Project, the Parker-Davis Project, and Pacific Northwest-Pacific Southwest Intertie Project, as an economical means to deliver power from the Navajo Generating Station to the CAP pumping plants. See Figure 13-1. The CAP has 15 pumping plants, each using varying amounts of power to move Colorado River water through the approximately 330-mile CAP aqueduct.

Currently, the CAP pumps run, on average, about 50 percent of the time and consume energy on the order of 2,500,000 MWh annually. As of 2008, the power requirements of the CAP pumps were primarily met by three Federal sources: the Navajo Generating Station, the Hoover Powerplant, and the New Waddell Pump-Generating Plant, with remaining demand met by power acquired by CAWCD. A breakdown of the Federal resources supporting the CAP is as follows:

- Navajo Generating Station - About a quarter of the capacity and energy of the Navajo Generating Station (24.3 percent) was acquired by the United States for the benefit of the CAP. This percentage converts to approximately 547 MW of capacity and 4,300,000 MWh of energy per year.

- Hoover Powerplant - CAWCD's Hoover allocation of capacity and energy under contract with the Arizona Power Authority for the CAP is up to 161.6 MW of capacity and up to 182,235 MWh of energy resulting from the Hoover Powerplant uprating program (known as Hoover Schedule B capacity and energy). The Arizona Power Authority, also through a contract with CAWCD, reserves a portion of the energy resulting from the release of surplus Colorado River water (known as Hoover Schedule C energy) for the CAP. The contracts between Arizona Power Authority and CAWCD for Hoover Schedule B and Hoover Schedule C expire September 30, 2017.

- New Waddell Pump-Generating Plant - Located near the base of New Waddell Dam, the New Waddell Pump-Generating Plant went into operation in 1994. It has eight units, of which four are adjustable speed pumps and four are two-speed pump-generators. The maximum capacity of the New Waddell Pump-Generating Plant is 45 MW.

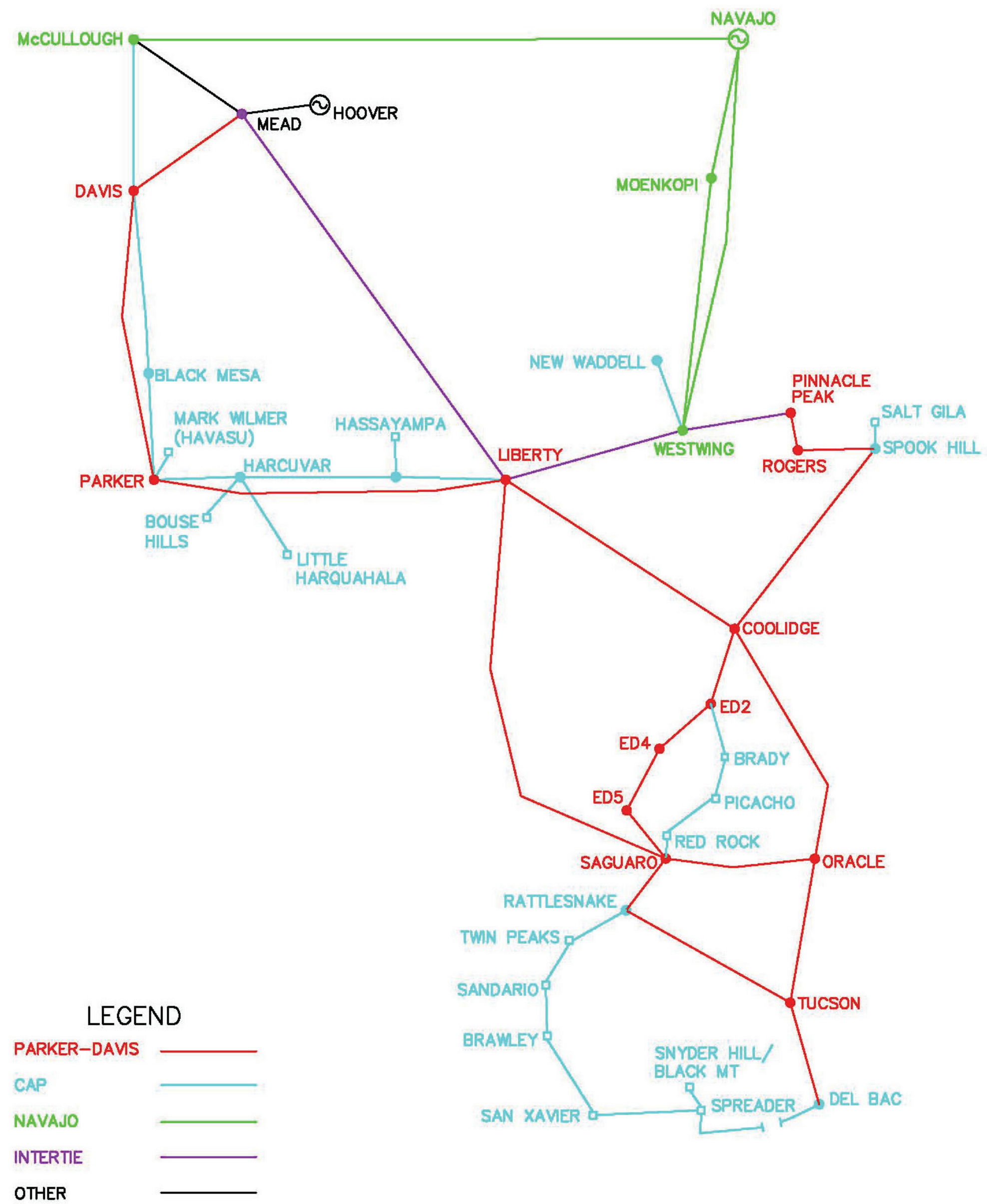

Figure 13-1. Navajo, CAP, and supporting interconnected transmission systems.

Transmission capacity rights were acquired by the United States for the benefit of the CAP in the following Navajo Project transmission systems:

- **Navajo Project - Southern Transmission System**
  Two separate 500-kV transmission lines routed side by side between Navajo Generating Station and Westwing Substation, located just northwest of Sun City West, Arizona. As of December 31, 2008, the lines are operated and maintained by the APS. The United States' share of these lines is approximately 550 MW as of December 31, 2008. The United States acquired this transmission capacity under Contract No. 14-06-300-2538.

- **Navajo Project - Western Transmission System**
  A single 500-kV transmission line routed from Navajo Generating Station to McCullough Substation, located near Boulder City, Nevada. As of December 31, 2008, this line is operated and maintained by Nevada Power Company. The United States' share of this line is approximately 356 MW as of December 31, 2008. The United States acquired this transmission capacity under Contract No. 7-07-30-P0015.

- **McCullough Substation to Mead Substation**
  122-MW transmission capacity acquired by the United States under Contract No. 1-CS-30-P1100 for the Sale and Consolidation of the Department of Water and Power of the City of Los Angeles Facilities Between Hoover Dam and Mead Substation and the Exchange of Capacity Between Reclamation, Western, and LADWP executed June 16, 1992. This contract also provides 122 MW of transformer capacity to LADWP.

Transmission lines were constructed by the United States for the benefit of the CAP in the following CAP transmission systems in which title is held by the United States:

- McCullough to Davis Dam to Parker Dam (230-kV capacity)

- Parker Dam to Mark Wilmer Pumping Plant (formerly Havasu Pumping Plant) (230-kV capacity)

- Parker Dam to Liberty Substation (230-kV capacity)

- Harcuvar Substation to Bouse Hills Pumping Plant (115-kV capacity)

- Harcuvar Substation to Little Harquahala Pumping Plant (115-kV capacity)

- Hassayampa Tap to Hassayampa Pumping Plant (230-kV capacity)

- Westwing Substation to Raceway Substation to New Waddell Dam (230-kV capacity)

- Spook Hill Substation to Salt Gila Pumping Plant (69-kV capacity)

- Electrical District No. 2 Substation to Saguaro Switchyard (115-kV capacity)

- Rattlesnake Tap to Del Bac Switchyard (115-kV capacity) (incomplete section remaining near Del Bac as of December 31, 2008)

Other transmission lines constructed by the United States, in particular for the Parker-Davis Project and Pacific Northwest-Pacific Southwest Intertie Project, provide support to meet the power requirements of the CAP. Title to these transmission systems is held by the United States.

Numerous contracts were entered into between 1979 and 2008 relating to the CAP transmission system, including:

- Letter Agreement No. 8-CU-30-P1055 between Reclamation and Western, dated January 24, 1983, establishes policies for control, operation, maintenance, design, and construction of CAP transmission facilities, including budget, billing, and payment procedures.

- Agreement for Operation, Maintenance, and Replacement of Facilities, Agreement No. 5-AG-30-P1046 between Reclamation and Western, dated June 11, 1985, provides for improving the operation efficiency of the CAP transmission facilities and sets forth more specifically the operation, maintenance, replacement, management, budget, and financial responsibilities of the agencies for the CAP transmission facilities.

- Letter Agreement No. 8-AG-30-P1043 between Reclamation and Western, dated October 30, 1985, provided that Reclamation plan, design, and construct the transmission lines necessary to operate the New Waddell Pump-Generating Facility.

- Letter Agreement No. 7-AG-30-P1017 between Reclamation and Western, addressed responsibilities relating to the procurement, installation, operation, maintenance, and sharing of certain CAP and Western communications facilities. The agreement was executed on January 5, 1984, and expired September 30, 2003.

- Shared Use Agreement No. 7-CU-30-P1139 among Reclamation, Western, and IXC Carrier, Inc. (now Broadwing Communications, LLC) dated October 17, 1996, provides for the funding, construction, operation, maintenance, and replacement of optical fiber ground wire and communication system electronics supporting remote monitoring and control needs of Federal projects.

- Contract No. 3-CU-30-P1171 among Reclamation, CAWCD, and Western, dated April 14, 2003, became effective October 1, 2002, and expires September 30, 2017, unless Western's Contract No. 94-PAO-10602 terminates first. The contract is to reimburse Western for its operation and maintenance costs relating to CAP transmission.

- Letter Agreement No. 6-CU-30-P1188 among Reclamation, CAWCD, and Western, effective October 1, 2005, provides for reimbursement of Western's costs associated with the operation and maintenance of the CAP transmission system. As of December 31, 2008, Western was billing under this letter agreement and not under Contract No. 3-CU-30-P1171.

Yuma Area Power Contracts

The construction of the Yuma Desalting Plant (YDP) and the Protective and Regulatory Pumping Unit (also known as the PRPU or the 242 Wellfield) are described in Chapter 4. In the Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat. 1063 (1980), which amended and supplemented the Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974), Congress authorized the use of power from the Navajo Generating Station to operate the YDP and the 242 Wellfield, subject to the pumping requirements of the CAP. The statute provided, however, that such use could not reduce revenues credited to the Development Fund and further provided that the Secretary of the Interior undertake an analysis of alternative sources of supply to operate the YDP and the 242 Wellfield. As of December 31, 2008, other power resources were being used for the YDP and the 242 Wellfield.

Reclamation and Western entered into Interagency Agreement No. 6-AG-30-P1018 for Firm Transmission Service (Yuma Desalting Plant) (Protective and Regulatory Pumping Unit), on December 12, 1991, to secure 27 MW of Parker-Davis Project and Pacific Northwest-Pacific Southwest Intertie Project transmission system capacity for electric power for the YDP and the 242 Wellfield. Since 1994, Parker-Davis Project and Pacific Northwest-Pacific Southwest Intertie Project transmission system capacity in excess of YDP and 242 Wellfield load have been temporarily reallocated to Western by Reclamation.

Contract No. 7-CU-30-P1141 among Reclamation, Yuma County, and YCWUA, dated September 2, 1998, and retroactively effective on October 1, 1997, provides for construction, operation, and maintenance of the wells of the Yuma Valley Drainage Well Project and established the terms and conditions for providing Federal power to operate the wells.

Chapter 13: List of References

Treaties, Interstate Compacts, and Federal Statutes

The Reclamation Act of 1902, Pub. L. No. 57-161, 32 Stat. 388 (1902).

Act of April 16, 1906, Pub. L. No. 59-103, 34 Stat. 116 (1906) (Town Sites and Power Development Act).

Act of November 2, 1921, Pub. L. No. 67-85, 42 Stat. 208 (1921) (Snyder Act).

Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928). On DVD in *Updating the Hoover Dam Documents 1978* at I-13.

Reclamation Project Act of 1939, Pub. L. No. 76-260, 53 Stat. 1187 (1939).

Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956). On DVD in *Updating the Hoover Dam Documents 1978* at I-99.

Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 885 (1968). On DVD in *Updating the Hoover Dam Documents 1978* at XII-9.

Department of Energy Organization Act, Pub. L. No. 95-91, 91 Stat. 565 (1977).

Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat. 1063 (1980), amending and supplementing:

> Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974). On DVD in *Updating the Hoover Dam Documents 1978* at XIV-14.

Hoover Power Plant Act of 1984, Pub. L. No. 98-381, 98 Stat. 1333 (1984) (Appendix 46), later amended and supplemented by:

> Energy Policy Act of 1992, Pub. L. No. 102-486, Section 114, 106 Stat. 2799 (1992).

San Luis Rey Indian Water Rights Settlement Act, Pub. L. No. 100-675, Title I, 102 Stat. 4000 (1988) (Appendix 18), later amended and supplemented by:

> Act of October 27, 2000, Pub. L. No. 106-377 Appendix B, 114 Stat. 1441A-70 (2000). Appendix 19.

Arizona Water Settlements Act of 2004, Pub. L. No. 108-451, 118 Stat. 3478 (2004). DVD Supplement 48.

Federal Court Decisions

Uncompahgre Valley Water Users Ass'n v. *Federal Energy Regulatory Commission*:

785 F.2d 269 (10^{th} Cir. 1986).

479 U.S. 829 (1986) (*sub nom. Town of Norwood* v. *Uncompahgre Valley Water Users Ass'n.*)

Federal Regulations

Bureau of Reclamation, General Regulations for Lease of Power, April 25, 1930.

Bureau of Reclamation, General Regulations for Generation and Sale of Power, May 20, 1941.

Western Area Power Administration, General Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects, May 3, 1983.

43 CFR Part 431, General Regulations for Power Generation, Operation, Maintenance, and Replacement at the Boulder Canyon Project, Arizona/Nevada (Bureau of Reclamation). Appendix 47.

10 CFR Part 904, General Regulations for the Charges for the Sale of Power from the Boulder Canyon Project (Western Area Power Administration).

Federal Register Notices

48 Fed. Reg. 20872 (May 9, 1983), General Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects.

49 Fed. Reg. 50582 (December 28, 1984), Conformed Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects. Conformance of Power Marketing Criteria in Accordance with Hoover Power Plant Act of 1984 (Pub. L. 98-381).

51 Fed. Reg. 23960 (July 1, 1986), General Regulations for Power Generation, Operation, Maintenance, and Replacement at the Boulder Canyon Project, Arizona/Nevada. Final Rule.

51 Fed. Reg. 43124 (November 28, 1986), General Regulations for the Charges for the Sale of Power from the Boulder Canyon Project. Final Rule.

52 Fed. Reg. 48328 (December 21, 1987), Adoption of Navajo Power Marketing Plan. Notice of adoption.

58 Fed. Reg. 3269 (January 8, 1993), Memorandum of Understanding Between the Federal Energy Regulatory Commission and the Department of the Interior, Bureau of Reclamation. Notice of Memorandum of Understanding.

72 Fed. Reg. 54286 (September 24, 2007), Adoption of Amended Navajo Power Marketing Plan. Notice of adoption.

Contracts and Agreements

Reclamation Contract No. 0-AG-30-P1037, Agreement Between Water and Power Resources Service [now Bureau of Reclamation] and Western Area Power Administration, March 26, 1980 (Master Agreement).

Informal Working Agreement Between the Bureau of Reclamation and Western Area Power Administration for Budget and Finance and Accounting Matters, March 14, 1983.

United States Department of the Interior Bureau of Reclamation Florida Project Lease of Power Privilege for the Lemon Dam Hydroelectric Project, Contract No. 8-07-40-P0140, July 15, 1988, between the United States and the Florida Water Conservancy District.

United States Department of the Interior Bureau of Reclamation Central Utah Project, Utah Lease of Power Privilege Among the United States of America, Central Utah Water Conservancy District, and Heber Light & Power Company for the Development of Hydroelectric Power at Jordanelle Dam, July 19, 2005, Contract No. 5-07-40-P0270.

Central Arizona Project Power-Related Contracts.

Headgate Rock Dam and Powerplant Interagency Agreements.

Hoover Power Operations Contracts.

Hoover Uprating and Electrical Service Contracts.

Navajo Project Contracts.

Navajo Surplus Contracts.

Parker-Davis Project Contracts.

Siphon Drop Powerplant Letter Agreement.

Yuma Area Contracts.

Letters

Director, Colorado River Water and Power Management Office to Parker-Davis Project Electric Service and Transmission Service Contractors, Parker Dam and Powerplant and Davis Dam and Powerplant Financing, October 5, 1995.

Memoranda

Commissioner of the Bureau of Reclamation and the Administrator of Western Area Power Administration, November 26, 1979, regarding transfer of functions and property pursuant to the Department of Energy Organization Act. DVD Supplement 165.

Bureau of Reclamation and Federal Energy Regulation Commission, November 6, 1992, Memorandum of Understanding between the Federal Energy Regulatory Commission and the Bureau of Reclamation, Department of the Interior, for Establishment of Processes for the Early Resolution of Issues Related to the Timely Development of Non-Federal Hydroelectric Power at Bureau of Reclamation Facilities. DVD Supplement 168.

Bureau of Reclamation memorandum to Bureau of Indian Affairs, regarding Transfer of Powerplant, Switchyard, and Transmission Line to Operation and Maintenance Status - Headgate Rock Hydroelectric Project - Interagency Agreement No. 6-AA-30-04110 – Bureau of Indian Affairs (BIA) – Arizona-California, May 20, 1997.

Other

The Hoover Dam Documents 1948, Chapters IV, VI, IX and XII, and Appendices 601, 901, and 902. On DVD.

Updating the Hoover Dam Documents 1978, Chapters I(H), III, and V, and Appendix 1 H.1. On DVD.

Federal Energy Regulatory Commission, License for the City of Farmington, New Mexico, for Operation of Powerplant at Navajo Dam, October 15, 1985.

Interim Navajo Power Marketing Plan, March 17, 1986. DVD Supplement 166.

Navajo Power Marketing Plan, December 1, 1987. DVD Supplement 167.

Amended Navajo Power Marketing Plan, September 18, 2007. Appendix 48.