

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
AND
UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION

OPERATING AGREEMENT ASSOCIATED WITH GLEN CANYON DAM OPERATING CRITERIA

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1. PREAMBLE

This Interagency Agreement (Agreement) is made this day of Pursuant to the Acts of Congress approved June 17, 1902 (32 Stat. 388); April 11, 1956 (70 Stat. 105); August 4, 1977 (91 Stat. 565); the Transfer of Functions and Property Agreement, dated March 26, 1980; and the Acts amendatory or supplementary to the foregoing Acts; between the UNITED STATES DEPARTMENT OF ENERGY, Western Area Power Administration, hereinafter called "WAPA," represented by the officer executing this Agreement or a duly appointed successor, and THE UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation, hereinafter called "Reclamation," represented by the officer executing this Agreement or a duly appointed successor; each sometimes hereinafter individually called Party, or both sometimes here after collectively called the Parties.

2. EXPLANATORY RECITALS

- 2.1 Reclamation is a Federal agency with management responsibilities for dam and power operations at Glen Canyon Dam.
- 2.2 WAPA is a Federal agency responsible for the marketing and delivery of power and energy from Glen Canyon Dam.
- 2.3 Reclamation and WAPA have entered into the Transfer of Functions and Property Agreement which, among other things, delineates each Party's responsibilities for power system operations including provision of operating reserves, development of schedules, optimizing reserve generation, and cooperation in controlling system voltage.
- 2.4 WAPA has entered into firm electric service contracts with various entities committing the sale of Colorado River Storage Project (CRSP) firm capacity and energy surplus to Reclamation project power loads.
- 2.5 On October 21, 1991, WAPA and Reclamation entered into Interagency Agreement No. 91-SLC-0180 which outlined the Exception Criteria and associated operational procedures during the preparation of the Operation of Glen Canyon Dam Final Environmental Impact Statement, the Glen Canyon Dam research flows and subsequent interim operations.
- 2.6 On February 24, 1997, the Department of Interior signed the Operating Criteria for Glen Canyon Dam (1997 Operating Criteria) In accordance with the Grand Canyon Protection Act.

- 2.7 On July 7th, 1997, WAPA and Reclamation entered into Interagency Agreement No. 97-SLC-0333 which outlined the Operation of Glen Canyon Dam under the 1996 Record of Decision Statement replacing the aforementioned Interagency Agreement and interim operations.
- 2.8 On December 15, 2016, Department of Interior issued the Record of Decision for the Glen Canyon Dam Long-Term Experimental and Management Plan Final Environmental Impact Statement (LTEMP ROD) which modified operations of the Glen Canyon Dam.
- 2.9 The 2017 Operating Criteria attached as Exhibit B and hereinafter called "Operating Criteria" summarize the operations described in the LTEMP ROD.

3. AGREEMENT

The Parties agree to the terms and conditions set forth herein.

4. TERM OF AGREEMENT

- 4.1 This Agreement shall become effective on the date of execution and shall remain in effect unless and until canceled by either Party by written notice given not less than one year in advance of the intended termination date.
- 4.2 Once effective this Agreement shall replace and supersede Interagency Agreement No. 97-SLC-0333.
- 4.3 The Parties shall periodically review, not less often than every 12 months, operations under this Agreement, and the Parties hereto shall put into effect necessary modifications, which shall be evidenced by written amendment to this Agreement.

5. DEFINITIONS

- 5.1 **Available Generating Capacity** means net operable capacity (i.e., total installed nameplate capacity at rated power factor less inoperable capacity).
- 5.2 **Average Integrated Value** across the Hour with respect to generation and water releases, means the sum of the instantaneous values taken across the hour divided by the number of instantaneous values taken.
- 5.3 **Bulk Electric System** all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher. This does not include facilities used in the local distribution of electric energy.
- 5.4 **Emergency Exception Criteria** means that part of the Operating Criteria designed to cover events which will result in the temporary alteration of normal powerplant operations. Examples of these conditions are illustrated in the Operating Criteria in Exhibit B, attached. These guidelines are illustrative of reliability criteria that are developed and modified from time to time.

- 5.5 **Long-Term Experimental and Management Plan (LTEMP) Final Environmental Impact Statement (EIS)** means the Final Environmental Impact Statement on the operations of Glen Canyon Dam filed with the Environmental Protection Agency October 7th, 2016
- 5.6 **Long-Term Experimental and Management Plan Record of Decision (LTEMP ROD)** means the Record of Decision on the operations of Glen Canyon Dam signed by the Secretary of the Interior on December 15th, 2016.
- 5.7 **North American Electric Reliability Corporation (NERC)** means the not-for-profit international regulatory authority whose mission is to assure the reliability and security of the bulk power system in North America. NERC develops and enforces Reliability Standards; annually assesses seasonal and long term reliability; and monitors the bulk power system through system awareness. NERC is the Electric Reliability Organization (ERO) for North America, subject to oversight by the Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada. WAPA and Reclamation are required to meet NERC Reliability Standards requirements.
- 5.8 **Regulating Reserve** means an amount of reserve responsive to Automatic Generation Control (AGC), which is sufficient to provide normal regulating performance for a Balancing Authority (BA). Regulating Reserve is provided by varying the power output of electric generators in response to an Area Control Error (ACE) signal which is calculated based on changes in system frequency, time error, and BA tie-line loading. Glen Canyon Dam generation provides Regulating Reserve in support of WAPA. As a result, generation output from Glen Canyon can swing frequently throughout the day. However, the swings are typically small in magnitude and duration, the average of which approximates the hourly scheduled generation.
- 5.9 **Scheduled Generation Level** means the amount of hourly generation output, in megawatt hours, planned for Glen Canyon Dam.
- 5.10 **System Emergency** means any abnormal system condition that requires automatic or immediate manual action by the BA or Transmission Operator (TOP) to prevent or limit the failure of transmission facilities or generation supply that could adversely affect the reliability of the Bulk Electric system.
- 5.11 **Unloaded Capacity** means online capacity at Glen Canyon which is available, but not currently serving load.
- 5.12 **Western Electric Coordinating Council (WECC)** means the non-profit corporation that exists to assure a reliable Bulk Electric System in the geographic area known as the Western Interconnection. NERC delegated some of its authority to create, monitor, and enforce reliability standards to WECC through a Delegation Agreement.

6. POWER SYSTEM OPERATION

- 6.1 Pursuant to Reclamation's water schedules and maintenance activities, WAPA's firm electric service contractual commitments, and consistent with the guidelines, criteria, and requirements of the NERC, WECC or other applicable agencies, Available Generating Capacity must be

sufficient to meet system regulation needs, maintain transmission reliability, maintain power operating reserve requirements, and to serve firm load requirements.

- 6.2 In consideration of the power operating guidelines and criteria described in Section 6.1 of this Agreement, and in accordance with the provisions of this Agreement, Reclamation will make Unloaded Capacity available from the Glen Canyon Dam Powerplant to the power system under emergency situations so that WAPA can continue to operate within utility industry standards.
- 6.3 Reclamation or WAPA shall, in all instances when the requirements to invoke Emergency Exception Criteria are known sufficiently in advance, notify the other party and the parties will collectively determine the appropriate action.
- 6.4 At any time either Party may request review of this Agreement and Exhibit B.

7. EMERGENCY SITUATIONS

- 7.1 The available generating capacity at Glen Canyon Dam shall respond to Bulk Electric System emergencies as well as to applicable interconnected System Emergencies.
- 7.2 If a power resource becomes unavailable to WAPA, or if additional generation is needed, Available Generating Capacity at Glen Canyon Dam will be available to support firm load until another source of energy can be found. The generation at Glen Canyon Dam will be increased only if other available CRSP generation has been utilized. Under an unavailable resource scenario, WAPA will call for replacement resources from other interconnected utilities and/or generation from other WAPA offices in accordance with standard utility practice.
- 7.3 WAPA and Reclamation will continue to respond to requests for changes in releases for humanitarian reasons (i.e., rescue and recovery activities).
- 7.4 Should conditions arise, including, but not limited to those described in Sections 7.1, 7.2, or 7.3 of this Agreement, or the Emergency Exception Criteria, which require changes to Glen Canyon Dam generation outside of the Minimum and Maximum Releases and Allowable Daily Fluctuations defined in the Specific Operational Constraints of the Operating Criteria for periods greater than 1 hour, generation will be restored at Glen Canyon Dam in accordance with the provisions of Exhibit A, attached hereto, of this Agreement.
- 7.5 If, as a result of an emergency situation, generation at Glen Canyon is lost, generation will be restored as soon as possible. Usually this can be accomplished within 15 minutes, and only under extraordinary conditions would this require more than 1 hour. Releases without generation will be made through by-pass valves to restore the minimum-release level only after it has been determined that generation cannot be restored within a 1-hour timeframe.
- 7.6 If it is anticipated that Glen Canyon Dam generation will be needed to operate under Emergency Exception Criteria for more than 1 hour, WAPA real time personnel and Reclamation's operators will consult with each other and with others as appropriate.

8. REGULATION

- 8.1 The Parties agree and recognize that Regulation Control is an essential part of operations and is required under all circumstances. Adequate generation for regulation purposes will be provided at Glen Canyon Dam and also may be provided at other CRSP facilities pursuant to power system operation practices, and generation will be measured as an Average Integrated Value across the Hour.
- 8.2 WAPA will determine which CRSP plants will be placed on Regulation Control by Reclamation, taking into consideration sufficient water and associated generation that must be made available to maintain Balancing Authority needs on an hourly basis. WAPA and Reclamation will consult as needed on water and plant availability.
- 8.3 For purposes of monitoring compliance with this Agreement, the Glen Canyon Supervisory Control and Data Acquisition System will be the preferred measure of all release flows from Glen Canyon Dam.

9. PERFORMANCE AND COORDINATION

- 9.1 WAPA will make every effort to adhere to the Specific Operational Constraints as provided in Section 5 of the Operating Criteria.
- 9.2 On occasions when the need to operate under Emergency Exception Criteria can be anticipated by WAPA, every effort will be made to avoid such operations during periods of special resource sensitivity.
- 9.3 Reclamation and WAPA agree that Basin Fund revenues may be used to fund a long-term monitoring program and associated research program regarding dam operations, as provided by law.
- 9.4 At least annually, the CRSP Manager of WAPA and the Upper Colorado Basin Regional Director of Reclamation, or their designees, will meet to discuss the Operating Criteria and the effects of the Operating Criteria on WAPA's and Reclamation's operations and maintenance budgets and status of the Basin Fund.
- 9.5 WAPA and Reclamation operations personnel will coordinate and as necessary meet to identify any use of Emergency Exception Criteria and the impact and effects of specific occurrence(s).
- 9.6 Reclamation will be notified when use of Emergency Exception Criteria may occur so that evaluation of the effects can be noted.
- 9.7 Annually, Reclamation will develop a hydrograph based on characteristics described in section 1.1 of Attachment B to the LTEMP ROD. Reclamation will seek input on the annual hydrograph through monthly operational coordination calls with governmental entities including WAPA, and regular meetings of the GCDAMP Technical Working Group (TWG) and Adaptive Management Working Group (AMWG).

9.8 Reclamation and WAPA will regularly consult throughout the year and when there is a need for adjustments to daily and monthly release volumes. Reclamation will utilize the full operational flexibility described in the LTEMP ROD to maintain or improve hydropower production to the greatest extent practicable. This operational flexibility may be implemented for a number of reasons including operational, resource-related, and hydro-power related issues.

10. COORDINATION OF GLEN CANYON DAM EXPERIMENTS

10.1 Reclamation and WAPA will work together to design experiments in a way that achieves the desired resource objectives, while maintaining or improving hydropower production to the greatest extent practicable.

10.2 Reclamation and WAPA will work together to coordinate the implementation of experiments to avoid conflicts with delivering energy, and generation and transmission maintenance activities, and in a manner that seeks to maintain or improve hydropower production to the greatest extent practicable while achieving the desired resource obligation.

10.3 Reclamation will consult with WAPA on the reallocation of water resulting from implementation of experiments to maintain or improve hydropower production to the greatest extent practicable.

11. SAFETY

11.1 Human safety will not be compromised in order to preserve Operating Criteria.

11.2 There are occasions when managing agencies and local authorities, such as the police, request that the flows from the dam be reduced so that search and rescue procedures can be conducted or fatalities can be recovered from the river. In these situations, flows will be reduced for an agreed upon period of time. When returning to normal operations, flows will be brought up quickly to the minimum flow identified in the LTEMP ROD and then may be increased at the ramping rate identified in the LTEMP ROD.

12. EXHIBITS

Inasmuch as certain provisions of this Agreement may change during the term hereof, they may be set forth in exhibits from time-to-time agreed upon by the Parties in writing. The initial Exhibits A, B, and all future exhibits shall be attached hereto and made a part hereof, and each shall be in full force and effect in accordance with its terms unless superseded by a subsequent Exhibit.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed by day and year first above written.

BUREAU OF RECLAMATION

By: WAYNE PULLAN Digitally signed by WAYNE PULLAN
Date: 2021.03.03 09:50:57 -07'00'

Regional Director

Upper Colorado Region

Bureau of Reclamation

Salt Lake City, Utah 84138-1147

Western Area Power Administration

By: Timothy A. Vigil Digitally signed by Timothy A. Vigil
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